



Accelerating Non-Tidal Wetland Restoration Across the Bay

Documenting Landowner Views and Practitioner Needs
Toward Identifying Solutions

The Nature Conservancy, Chesapeake Bay Program



© The Nature Conservancy

Recommended Citation: Houser, M., Heyn, S., Fanok, S., & Jacobs, A. (2026). Accelerating Non-Tidal Wetland Restoration Across the Bay Watershed: Documenting Landowner Views and Practitioner Needs Toward Identifying Solutions. The Nature Conservancy.

Funding Acknowledgement: This work was supported by the U.S. Environmental Protection Agency, the Chesapeake Bay Program, and the Chesapeake Bay Trust.

Table of Contents

EXECUTIVE SUMMARY	3
REPORT RECOMMENDATIONS	6
INTRODUCTION	8
LANDOWNER SURVEY RESULTS	9
<i>Landowners Interested in Wetlands and Restoration, Engagement Insufficient</i>	<i>9</i>
<i>Engagement Potential Exists</i>	<i>12</i>
PRACTITIONER WORKSHOP RESULTS	13
<i>Exploring Opportunities and Challenges to Accelerating Restoration</i>	<i>13</i>
POLICY WORKSHOP	17
<i>Policy Workshop Barriers and Solutions</i>	<i>18</i>
<i>Funding Solutions.....</i>	<i>19</i>
<i>Permitting Solutions.....</i>	<i>21</i>
<i>Capacity Solutions</i>	<i>22</i>
<i>Awareness and Prioritization Solutions</i>	<i>22</i>
CONCLUSIONS	23
<i>Solving a Systems Issue.....</i>	<i>24</i>
Report Information.....	27
Appendix A: State Specific Recommendations from Practitioner Workshops	29
Appendix B. Practitioner and Policy Workshop Results	33

EXECUTIVE SUMMARY

Non-tidal wetlands are essential to the ecological health and resilience of the Chesapeake Bay watershed. They provide critical ecosystem services, including water quality improvement, flood mitigation, wildlife habitat, and climate resilience. Despite these benefits, restoration progress has lagged significantly behind regional goals. Between 2014 and 2024, only [about 6% of the goal to restore 85,000 acres was achieved](#).

This report identifies the key barriers limiting restoration and outlines actionable strategies to accelerate progress. It draws on three complementary research efforts across Maryland, Delaware, Pennsylvania, and Virginia:

- Surveys of over 1,600 landowners with potentially restorable wetlands on their property
- Three workshops with state-based restoration practitioners
- A regional policy workshop with state, non-profit, and federal restoration partners aimed at confirming barriers and potential solutions.



Wetland Restoration Site on the Eastern Shore of Virginia. © The Nature Conservancy

Key Finding: Landowner Interest Exists

A central finding across all research efforts is clear: Landowner interest in wetland restoration is high, but system-level constraints prevent that interest from translating into action.

Key survey findings include:

- 72% of landowners have never been contacted about restoration opportunities
- Over 60% are interested in learning more or participating

These findings point to a largely untapped restoration opportunity across the watershed. However, practitioner feedback indicates that restoration system inefficiencies limit the ability to implement projects at scale.

Key Finding: Four Systemic Barriers Are Limiting Accelerated Restoration Process

1. *Funding Accessibility and Structure*: Funding is available, yet limited, and when available, it is difficult to access and use efficiently because one source rarely funds all project components (outreach to monitoring). Federal conservation funding for non-tidal restoration exists (e.g., NRCS Wetland Reserve Easement (WRE)), but utilization varies across watershed states.
2. *Permitting Inefficiencies*: Although improvements have been made, stakeholders still perceived permitting constraint in most watershed states. Umbrella permits may enable more efficient review timelines but are not being widely used.
3. *Limited Restoration Capacity*: Insufficient staffing across federal, state, nonprofit, and private entities, with an acute shortage of wetland engineers and designers who are supporting voluntary restoration.
4. *Insufficient Awareness and Prioritization of Non-Tidal Wetlands*: Demand for wetland restoration is constrained by low awareness among landowners, practitioners, and policymakers, and under-recognition of the value of wetlands as tools to achieve diverse state-goals (water quality, resilience, habitat, etc.) and thereby low prioritization of wetlands in diverse funding sources.

Key Finding: A System Problem Requires a System Solution

These barriers do not operate independently. Instead, they form a highly interconnected system in which shortcomings in one area undermine progress in others. For example, increasing outreach does not translate into projects if funding and staffing are insufficient. Similarly, streamlining permitting alone does not resolve funding or capacity limitations. Each stage must be moved through sequentially for each project. Moreover, the same organizations and often the same individuals are often involved in each step of the restoration process, meaning inefficiencies in one stage require capacity and therefore limit from being used to advance project. Consequently, incremental improvements will not achieve meaningful gains. Instead, accelerated restoration requires simultaneous, coordinated action across all four barriers.

Toward a Comprehensive Approach to Restoration

A unifying recommendation emerging from stakeholder engagement is the development of a “one-stop-shop” model for wetland restoration. This model would integrate all phases of restoration into a coordinated system integrating government and NGO partners: (1) Landowner outreach; (2) Funding acquisition and administration; (3) Project design; (4) Permitting Application (reflecting the umbrella approach); and (5) Construction, implementation, and monitoring. We refer to this one-stop-shop model as a comprehensive approach to restoration model.

By combining these functions under a multi-organizational partnership framework, the comprehensive approach could reduce administrative complexity, accelerate project timelines, and ultimately promote the scalability of non-tidal wetland restoration.

Conclusion

The overall pace of wetland restoration remains insufficient to meet regional goals. The findings of this report underscore a critical reality: The primary challenge, currently, is not a lack of landowner interest or opportunity—it is the structure of the restoration system itself.

Achieving meaningful progress will require:

- Coordinated action across funding, permitting, capacity, and demand
- Strategic partnerships that leverage shared resources
- A shift from fragmented approaches to integrated, system-level solutions

By embracing these strategies, restoration professionals and partnerships in the Chesapeake Bay watershed can unlock substantial restoration potential and move toward achieving its long-term ecological and resilience goals.

REPORT RECOMMENDATIONS

To address the identified systemic challenges, the report proposes the following high-impact strategies:

1. **The Wetland Workgroup for the Chesapeake Bay Program should consider adopting this report's recommendations into their management plan for improving wetland restoration success in the watershed.** Our work reflects the findings of past efforts, affirming the reality and persistence of these challenges to more efficient delivery of restoration. Formal inclusion of these recommendations in the management plan may help to legitimize and subsequently actualize these directions across the Chesapeake.
2. **Increase demand for wetlands through strategic communication campaigns targeted to diverse audiences—landowners, practitioner groups, and legislators.** Each group, based on our report's findings, may be more willing to support or pursue restoration if they better understand how wetland and wetland restoration programs can address their needs. For instance, clearer documentation and communication of wetlands' water quality benefits could encourage greater attention from restoration practitioners. Wetlands' flood resilience benefits may entice other groups, or states, to be more supportive of accelerating restoration. Finally, landowners often lack a basic knowledge of wetlands and the restoration potential for their land. Survey results from this report clearly suggest that past engagement around wetlands and restoration programs has been limited for many watershed residents. In every case, additional engagement may be a key step to promoting additional support.
3. **Formalize/prioritize non-tidal wetlands restoration in existing state funding pools.** There is an opportunity to increase the ability to fund wetland restoration through small changes in the language of a variety of state conservation and/or resilience programs. Notably, seeking additional state-funding is unlikely to be successful given current budgets, but reallocations or simply increasing the priority of wetlands within existing programs could unlock significant pools of funding.
4. **There is, relatedly, a need to develop additional funding programs that support restoration and/or long-term maintenance and monitoring** (e.g., as one model, see the [Chesapeake Bay Trust's Pooled Monitoring Initiative's Restoration Research Award Program](#)), and **programs that align funding timelines with the full restoration lifecycle (e.g., up to a 5-year timeline)** (see, for a recent example, the [National Fish and Wildlife's 2026 Chesapeake Bay Innovative Nutrient and Sediment Reduction Grant](#)).
5. **For restoration practitioners and future projects, capitalize on potential increased efficiency in permit review by developing priority working areas and applying for umbrella permits that cover restoration across these areas.** Workshop participants noted that states' permit reviewers were highly amenable to this process and it could alleviate the need for individualize permits which significantly increase the project timeline. The approach depends on wetland restoration organizations strategically focusing on specific sub-watersheds for batched restoration, which would allow for the development of umbrella permitting. This too could have benefits, given the potential to develop a larger, geographically focused project. Smaller

projects, spread across a larger area, were a noted source of inefficiency in outreach, contracting, permitting, and construction. See, for instance, the benefits of [Iowa's "Batch and Build" approach](#).

6. **Leverage large-scale funding mechanisms** (e.g., NRCS's [Regional Conservation Partnership Program](#)) **to pilot a comprehensive approach to restoration model (i.e., "a one-stop-shop"), supporting the development of coordinated capacity and hiring sharing (e.g., project managers/coordinators, engineers, etc.), and the centralization of restoration project funds, which could be held by and/or passed through the restoration partnership.** Ultimately, beyond direct restoration, the goal of this work should be to test the hypothesis stated above—that the acceleration of wetland restoration depends on a system's solution, or in other words, simultaneously mitigating the roadblocks within all four barrier categories. Data tracking and analysis—including project timelines, landowner engagement, and potential bottlenecks in the restoration process— is a critical part of implementing and testing this approach. This suggestion aligns with the recommendations of [other recent reports](#).

- 6.1 **To support the comprehensive approach to restoration model, there is a need to develop strong wetland restoration partnerships**, that include state, federal, non-profit, and private organizations who can provide complementary support to one another and landowners in across restoration phases (e.g., outreach, contracting, constructions).

INTRODUCTION

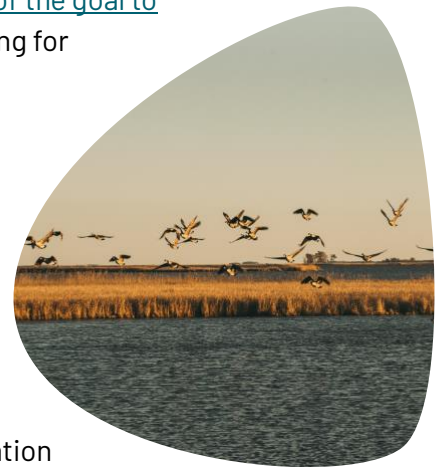
Wetlands and other natural landscapes provide critical ecosystem services for the Chesapeake Bay watershed, including fish habitat, flood mitigation, and clean water. However, [given the loss of historical wetlands across the region](#), these benefits have been significantly reduced.

Across the Chesapeake Bay Watershed, progress has been made toward restoring wetlands, but it has been slow, even compared to other conservation goals in the region. The wetland restoration goal is officially “off course” for the watershed, with only [about 6% of the goal to restored 85,000 acres achieved](#) by 2024 (4,862 acres, not accounting for wetlands loss due to natural processes and development).

Restoration programs funded by federal, state, or private entities [provide landowners incentives to voluntarily restore land](#). Understanding landowners' views on wetlands and restoration programs is therefore critical to addressing barriers to and motivations for participation.

But challenges and opportunities exist beyond landowner interest. Cultivating landowner interest through engagement takes capacity and skill on the ground, and the implementation of restoration once a landowner is interested depends on program and/or grant applications, permitting, design, and construction, along with many other factors. Accelerating non-tidal wetland restoration across the watershed depends on not only understanding landowner views, but also the potential to increase the efficiency of the restoration delivery process across the states.

Past efforts have sought to document and propose solutions to the challenges limiting wetland restoration in the Chesapeake Region. In 2015, The Nature Conservancy and Ducks Unlimited connected with restoration practitioners throughout the Bay watershed to [identify barriers to accelerated impact](#). Similarly, in 2022, the [Chesapeake Bay Program](#) hosted a workshop with a diverse participant set on a related topic. Our efforts aim to build on these projects. By drawing on a more representative set of data for the various “communities” involved in wetland restoration (landowners, practitioners, organizational leadership/policy), we offer a comprehensive account of challenges and opportunities.



©Greg Kahn

Our work integrates findings of three, interrelated research efforts that covered Virginia, Pennsylvania, Delaware, and Maryland: (1) landowner surveys focused on perceptions of wetlands and restoration programs; (2) non-tidal wetland restoration practitioner workshops, where barriers to increasing the pace and scale of restoration were discussed; and (3) a policy stakeholder workshop, where legislative and organization-level solutions to identified barriers were in-focus. This report summarizes the results from these efforts and make recommendations to accelerate voluntary non-tidal wetland restoration within and across each of our focal watershed states.

LANDOWNER SURVEY RESULTS

To address landowner interest, we conducted three surveys of landowners across four states within the Chesapeake Bay Watershed. The first survey, conducted in 2022, focused on the Maryland and Delaware portions of Delmarva. The second and third surveys were done in 2024-2025 and focused on the watershed portions of Pennsylvania and Virginia. Across these regions, we surveyed landowners whose properties contained potentially restorable wetlands identified through spatial analyses (see Table 1).



©Cameron Davidson

Landowners Interested in Wetlands and Restoration, Engagement Insufficient

Our survey results clearly suggest that to date, landowner outreach has been insufficient across the watershed. ***On average, approximately 72% of surveyed landowners across the watershed have “Never been contacted before” about restoration programs their property might be eligible for.*** Lack of engagement is particularly pronounced in VA, where 88% of landowners reported never being contacted¹ (see Figure 1 for more detail). In line with this result, a substantial portion of respondents in each state had “Never heard of” restoration or conservation programs offered by federal entities. ***On average, 54% of respondents had never heard of any of the federally supported restoration programs.***

¹ VA residents were also asked about their exposure to mitigation programs. Almost 91% of VA respondents reported also having never been contacted before about mitigation programs.

Table 1: Responses to survey by state

	Number of Respondents	Response Rate	Average Acres Owned	Percent operating farms**	Year Surveyed
DE	78	16%*	129	7%	2022
MD (Eastern Shore)	288		267	25%	2022
PA	655	20%	125	30%	2025
VA	600	17%	240	21%	2025
All	1621	18%	192	21%	2022-2025

* We use a combined response rate as a single survey was sent to both states.

**Meaning the percent of respondents who noted that they or an immediate family member was farming on their land.

We also explored how past participants in federal or other restoration programs viewed those programs. These questions were only delivered to VA and PA survey respondents. Looking across these respondents, **48% of past program participants in the two states somewhat or strongly agree that many programs' requirement for upfront payment to cover the cost of restoration is a barrier to participating in these programs (see Figure 2).**

Despite our survey being the initial exposure to restoration program opportunity for the majority of respondents, initial interest in participation was high.

When asked if they would consider enrolling a portion of their property into a restoration program, over half of respondents in each state were interested in learning more or actively considering enrollment (see Figure 3).

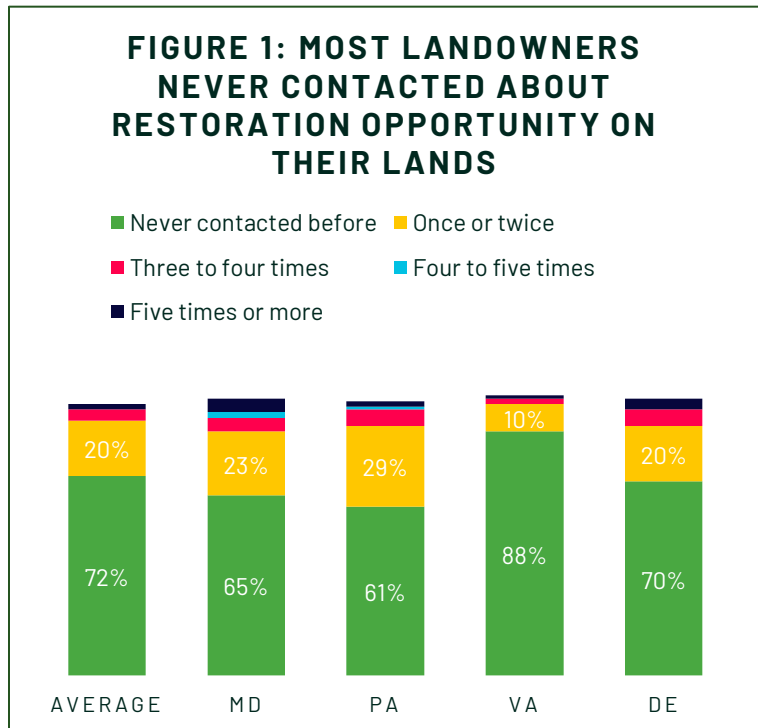


FIGURE 3: INTEREST IN PARTICIPATING IN RESTORATION PROGRAMS

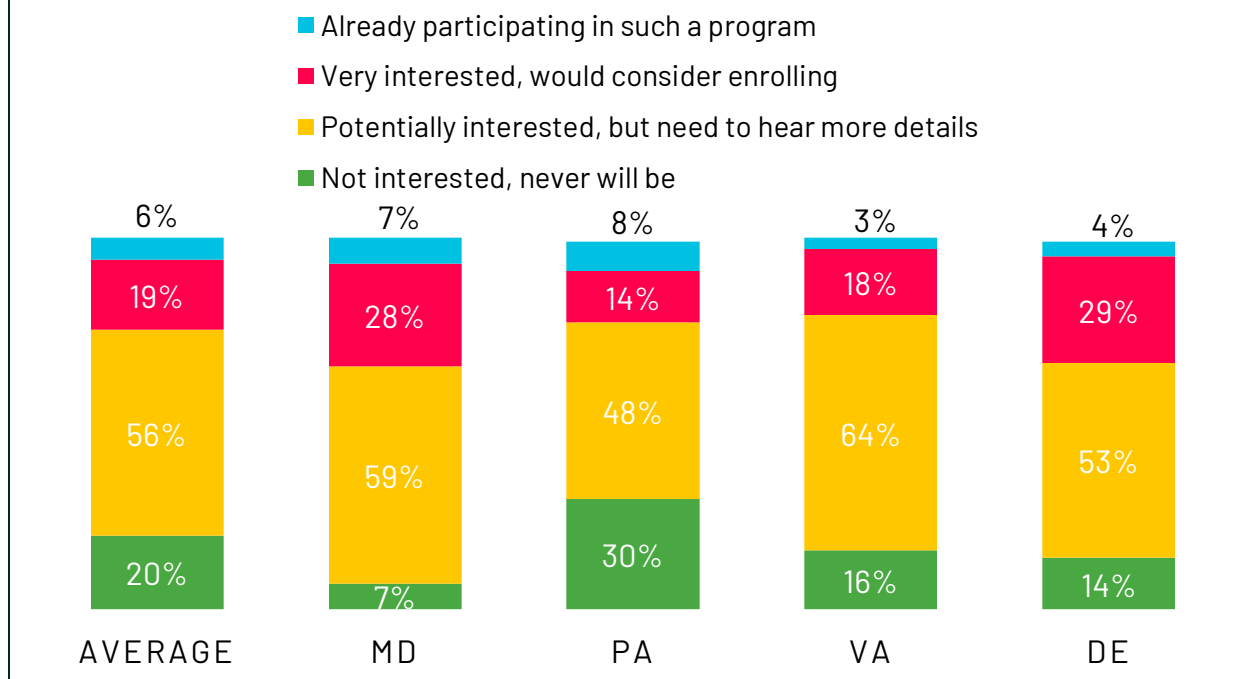


Figure 4: Top 3 "very motivating" outcomes for restoration across surveyed states*

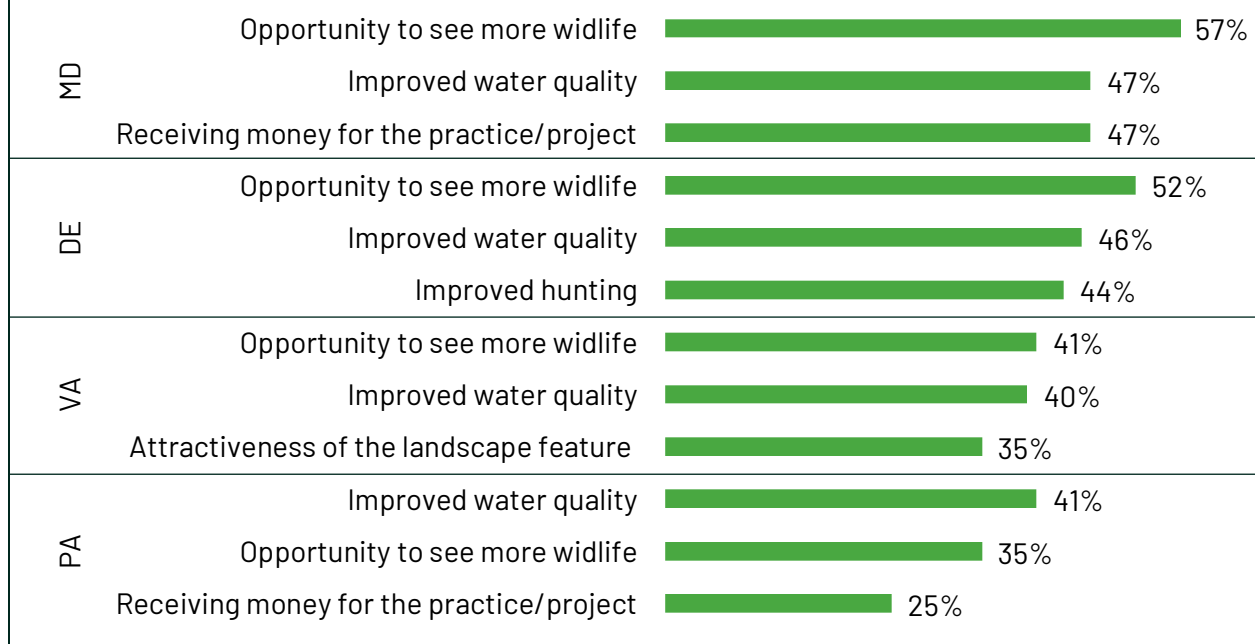
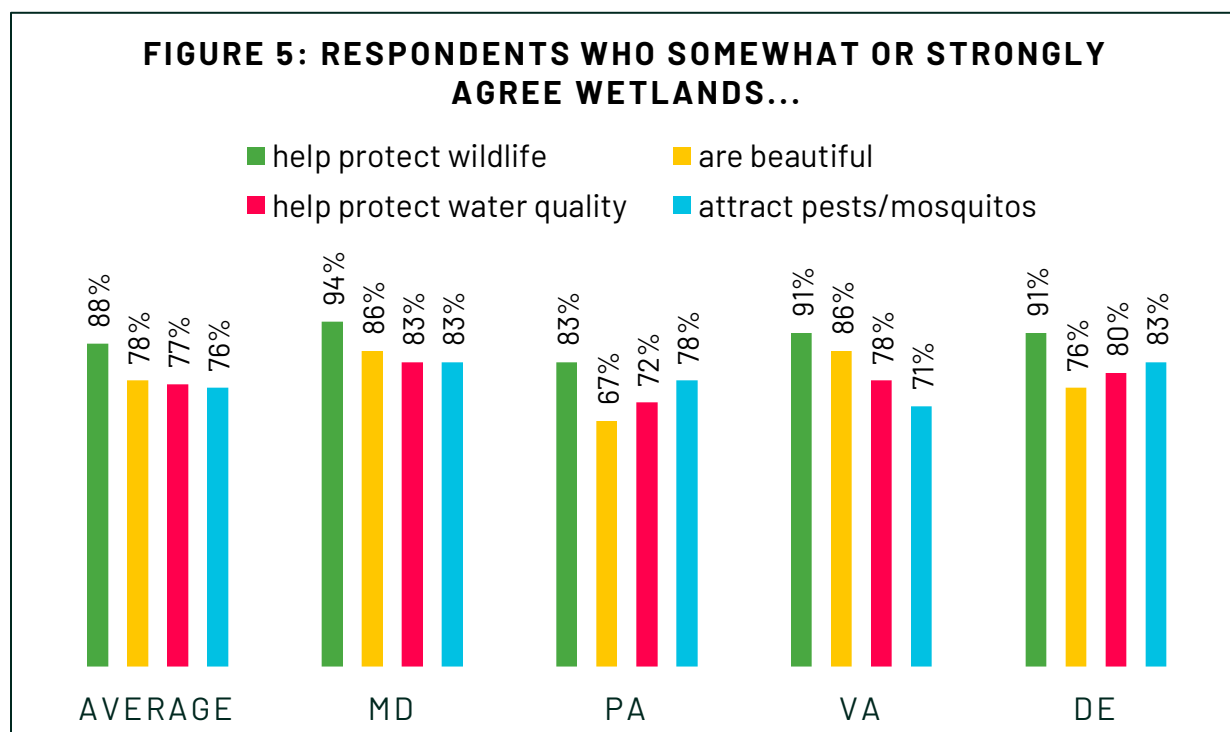


Figure 4 note: *These findings exclude several questions that were directed only to VA and PA survey takers

Overall, respondents were "very motivated" to participate in restoration programs for the ecological benefits, but program incentives also matter. The top three "motivating" factors were:

The opportunity to see more wildlife (42%); improving water quality (42%); and receiving payment for participating in the program (33%). These factors varied by state. See Figure 4 for more information.

When it comes to the benefits of wetland restoration specifically, a majority of respondents somewhat or strongly agreed that wetlands helped improve water quality (77%), protect wildlife (88%), and are beautiful (78%). Agreement on these varied, with PA residents being the least likely to agree that wetlands are beautiful (67% agreement)(see Figure 5). Notably, not all views were positive. A majority also felt that wetlands attracted pests and in PA, 67% of respondents felt wetlands “make farming harder” (asked only to PA and VA respondents).



Engagement Potential Exists

Respondents were asked if they were interested in hearing more about the restoration potential for their land, and if so, to provide contact information. **Across our surveys, 62% of respondents said “yes” to being contacted, equating to over 500 contacts throughout the watershed.** In MD and DE, outreach to these landowners has also been completed. For VA and PA, engagement has only just begun and based on spatial analysis, these individuals conservatively represent at least 3,000 acres of wetland restoration opportunity alone—a number that approaches the total restored or enhanced wetland acres between [2014-2024 \(4,862 acres\)](#).

Notably, these acreage potentials will not be fully realized, and by no means will 100% of these contacts agree to pursue restoration. Instead, these results suggest that landowner interest is high and not the primary barrier to advancing voluntary wetland restoration. The potential to capitalize

on this interest exists, thereby leading to more wetland restoration. But this depends on the capacity and funding to implement restoration projects.



Post-restoration of a PA floodplain ©The Nature Conservancy

PRACTITIONER WORKSHOP RESULTS

Exploring Opportunities and Challenges to Accelerating Restoration

Figure 6: Practitioner Workshop Included Organizations		
DE & MD	PA	VA
USDA Natural Resource Conservation Service (MD and DE) US Fish and Wildlife MD Department of Natural Resources The Nature Conservancy Ducks Unlimited	USDA Natural Resource Conservation Service (PA) US Fish and Wildlife Resource Environmental Solutions (RES) County Conservation Districts Ecosystem Planning and Restoration Trout Unlimited	VA Department of Water Resources VA Department of Environmental Quality Ducks Unlimited Soil and Water Conservation Districts USDA Natural Resource Conservation Service*
<i>*USDA NRCS for VA represented during the DE & MD workshops given the timing of the federal government workshop.</i>		

Understanding practitioner response to these survey results—especially landowner interest—is critical to gaining insight into potential challenges or opportunities in stages of wetland restoration beyond landowners expressed interest. In the fall of 2025 (DE/MD: September 3rd; PA: September 17th; VA October 21st), The Nature Conservancy convened three workshops with restoration practitioners in each of our survey areas (combining DE and the Eastern Shore of MD). Across each state, workshop participants represented federal², state, and county government departments, non-profit organizations, and private industry. In total, we engaged 38 external participants in these workshops and 16 distinct organizations (accounting for repetition across states). See Figure 6 for details.

The workshops included a short presentation of survey results, a facilitated discussion on the barriers practitioners have encountered when restoring wetlands in their state, and a brainstorming session on potential solutions. These workshops aimed to:

1. raise awareness of survey results in each of our survey states
2. discuss and prioritize barriers that could prevent restoration practitioners from meeting landowner demand suggested by the survey
3. develop a list of potential solutions to those barriers to engagement and implementation

After being shown survey data from their respective states, restoration practitioners expressed enthusiasm about the level of landowner interest. However, most practitioners noted challenges that made it difficult or impossible to follow up on the landowner's interest.

Most practitioners reported little to no capacity for proactive outreach on wetland restoration. They explained that they can only manage projects that come through existing networks or landowner inquiries—and even that is challenging due to limited staff capacity across agencies, slow project timelines, inconsistent regulatory standards, and time-intensive funding/program requirements. ***This indicates that, at least for now, landowner interest is not the primary barrier to accelerating wetland restoration across the Chesapeake Bay Watershed.***

Insights into these programmatic barriers—that is, the challenges practitioners face in the actual implementation of restoration, from engagement to construction—that were prevalent across states (3 out of 4) are summarized in Table 2. We also provide the specific implications of the barrier, per workshop participant's insights and proposed solutions to each barrier. Blank cells indicate that no recommendation was provided for the corresponding barrier during the workshops. These barriers represent the most geographically widespread issues (meaning they were noted by practitioners in at least 3 of our 4 survey states) limiting the pace and scale of wetland restoration across the Chesapeake Bay watershed.

² Federal partners were not present at the Virginia workshop, as it was held during the federal shutdown during 2025. Results from Virginia should be interpreted with this in mind. One Virginia-based federal employee was present at the Maryland/Delaware workshop. This person's views have been incorporated into the Virginia section.

Table 2: Watershed-wide Barriers and Their Implications from Practitioner Workshops

Area/Type	Noted barrier(s)	Implications	States
Permitting	Limited state-level regulatory staff capacity	Causes delays in permitting process	VA, PA, DE
	Inconsistent state-level regulatory standards	Creates uncertainty about required permits and situations where regulators request modifications beyond their official scope	VA, PA, DE
Capacity	Limited outreach capacity across agencies/organizations	Leads to reduced landowner awareness and fewer restoration opportunities	MD, DE, VA, PA
	Limited NRCS Capacity to review and process WRE, EQIP and CREP applications	Results in delays or prevents landowners from submitting applications	MD, DE, VA, PA
	Limited design capacity across agencies/organizations	Results in delayed restoration and less bandwidth for new projects	MD, DE, VA
Funding Accessibility & Structure	Funding durations misaligned with project timelines	Makes funds difficult to use effectively	MD, DE, VA, PA
	Project maintenance and monitoring required but not funded	Implemented projects more likely to go unmaintained and restoration work at risk of being lost; can discourage willingness to take on new/more projects	DE, VA, PA

Table 3 focuses on *state-specific* barriers (those reported in 1 or 2 of the 4 surveyed states). While these barriers are less geographically common in the watershed, that should not suggest they are less important in the specific states where they are present. State specific recommendations based on the results of the landowner survey and practitioner workshops are synthesized in state specific recommendations in Appendix B, Tables 1A and 2A.

Table 3: State-Specific Barriers and Implications from Practitioner Workshops

Barrier area	Noted barrier(s)	Implications	States
Permitting	High permitting costs	Disincentivizes landowner participation or necessitates supplemental funding	VA, PA
Capacity	Lack of cross organizational partnerships and communication pathways	Limits ability to pass on potential projects and share workload	VA, PA
	Existing federal and state capacity has limited knowledge of wetland restoration and funding programs (e.g., SWCD staff)	Results in delayed restoration timelines and limits outreach	VA
Funding Accessibility & Structure	Use of Farm Bill funding requires IRS Annual Gross Income Review which is extending past application review window	Causes landowner applications to be deferred until following year	MD, DE
	NRCS's Wetland Reserve Easement appraisal process extending past application review window	Causes landowner applications to be deferred until following year	MD, DE
Funding Accessibility & Structure	Federal grant programs require the solicitation of multiple bids to proceed with construction of projects	Slows down restoration process and dampens the potential for cross-organization partnerships	VA, PA
	Funding rates (e.g., from grants) does not align with project cost	Necessitates piecing together various funding streams for one project	PA
	State funding sources do not include incentives for landowners	Fewer landowners pursue restoration opportunities	VA
	Lack of state-prioritized funding for non-tidal wetland restoration	Less funds available	VA



POLICY WORKSHOP

While there is no one pathway to address many of the challenges that practitioners raised, in many cases solutions could be developed through changing organizational-level systems, program guidance and structure, or formal changes to state-policy. Consequently, we drew together a wide mix of restoration managers, practitioners, and policy experts from across the Chesapeake Bay watershed to solicit their input on how to best address the practitioner identified challenges to wetland restoration. The policy workshop's goal, which is the title we gave to the gathering, was to

facilitate discussion and uncover potential solutions to the identified barriers including updating program systems and structures, the leveraging or growing funding, and improving federal and state policies to better enable restoration outcomes within PA, MD, VA, and DE and across the Chesapeake Bay watershed.

The policy workshop, which was held on May 5th, 2026, included 33 participants (excluding three facilitators), representing a diverse range of organizations (see Table 4). The workshop included a short presentation of survey and practitioner results, a facilitated discussion on the barriers policy-participants have encountered in their state, and a brainstorming session for potential solutions to specific challenges at both the state-level, but also solutions at the watershed level that could address challenges across multiple states at once.



©Cameron Davidson

Table 4: Organizations Represented at Policy Workshop

U.S. Fish and Wildlife Service U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS PA, DE, VA, and MD) U.S. Environmental Protection Agency (EPA) Virginia Department of Wildlife Resources Virginia Department of Environmental Quality Pennsylvania Department of Environmental Protection Chesapeake Bay Foundation The Nature Conservancy (TNC) Maryland Department of Natural Resources Chesapeake Bay Commission Ducks Unlimited National Fish and Wildlife Foundation (NFWF) Choose Clean Water Coalition

Policy Workshop Barriers and Solutions

After presentations on the survey and practitioner identified barriers to restoration, workshop participants discussed the relevancy of the issues based on their experience. While some state-specifics were noted for each barrier (and subsequently, for each solution), the general tone of the meeting was that the major barriers limiting accelerated progress on restoration were largely common across the watershed states. State-based distinctions are noted below when relevant.

Policy participants agreed with many of the barriers noted by practitioners in early workshops and built on these points through the addition of somewhat novel fourth category of barrier. These included:

- (1) Funding Accessibility & Structure: Sufficiently large and efficient to manage/deliver funding sources are hard to find and use.
- (2) Inefficient Permitting: Permitting improvements have been made but can still present as a bottleneck to rapid project completion.
- (3) Limited Restoration Capacity: Insufficient and fragmented capacity for entire project lifecycle, with designers and engineers particularly limited in states other than PA (where private consultants are available).
- (4) Insufficient Awareness and Prioritization of non-tidal wetlands: Wetland and floodplain restoration are not prioritized politically, by landowners given limited awareness, or by other conservation organizations given limited incentives.

Related to the fourth barrier category, policy workshop attendees expressed that the public was often not aware of wetland restoration programs (in agreement with survey findings) and that conservation organizations were often not prioritizing the practice given the challenges they faced. Policy attendees also offered that state policymakers also may overlook non-tidal wetland restoration as a solution to pressing state challenges, such as community resilience or water

quality. At the same time, wetlands were perceived to be under credited for their environmental benefits, particularly considering the state’s goals to meet the [Chesapeake Bay’s Total Maximum Daily Load](#) requirements. For instance, some Pennsylvania attendees noted that current accounting approaches may not fully capture the benefits of integrated floodplain, wetland, and stream restoration, potentially influencing restoration priorities and funding decisions. The need to better assess and credit wetlands’ diverse ecological benefits has been affirmed in past [STAC-led research](#).

Specific examples of challenges raised in the workshop are included in Table 5, along with proposed solutions. See Appendix B, table 3A for more details on barriers from the policy workshop. Solutions are described in more detail in the following sections.

Table 5: Barriers and Proposed Solutions from Policy Workshops

Barrier Categories	Proposed Solutions
Funding Accessibility & Structure	• Adapt applicable state conservation and/or resilience funding programs to target wetland restoration more acutely • Pursue large-scale grants, such as Regional Conservation Partnership Programs (RCPP), that can catalyze partnerships and facilitate access to more efficient project funding.
Inefficient Permitting	• Regional prioritization to identify multi-site restoration patches and using bulk “batch and build” style permitting applications for these targeted projects to reduce permitting timelines and costs.
Limited Restoration Capacity	• Develop more cross-organizations partnership models to support capacity sharing and strategic hiring, with a specific focus on government, non-profit, and private organizations working together.
Insufficient Awareness and Prioritization of Non-Tidal Wetlands	• Conduct strategic education campaigns to illustrate multiple benefits of wetlands, particularly focused on state-policy makers. • Support innovative use of existing state funds, such as mitigation programs and MS4 permits, to encourage prioritization of wetland restoration (also increasing funding). • Emphasizing the cost effectiveness of wetlands as solutions to pressing state/regional challenges (e.g. water quality and quantity, community flood resilience) is critical to gaining political support for wetland restoration efforts across states and enabling the use of existing state funds (see above).

Funding Solutions

A key thread throughout the workshop was the opinion that simply asking for more funding was not a feasible option at either the state or federal level given contemporary budgets. Rather, a more

realistic option would be to consider how to adapt existing funding pools to be more applicable to non-tidal wetland restoration.

In general, participants were not optimistic about the feasibility of changing NRCS Farm-Bill programs to make them more efficient (e.g., Wetland Reserve Easement). But participants felt that adjustments to existing state conservation and/or resilience funding programs could be achieved and would be fruitful in all states represented, either through legislative action or more informal changes, such as adjusting language in programs to explicitly include wetland restoration as an eligible practice. Participants noted that each represented state had potential pools of state funds that could directly support wetland restoration. Examples of these programs included [Virginia's Agricultural Best Management Practices Cost Share Program \(VACS\)](#) and [Conservation Assistance Program \(VCAP\)](#), [Pennsylvania's Going Greener Plus Grants](#), [Maryland's MS4 Permit Program](#), and [Delaware's DNREC Chesapeake Bay Grant Program \(among others\)](#). In every case, the purpose of these grant programs (e.g., water quality improvements, or community resilience) could be met through non-tidal wetland restoration. However, these funds were rarely being directed to wetland restoration, as wetlands were either not prioritized and/or eligible for funding within the current structure of these programs. Including or better prioritizing wetlands in these and other existing funding pools was considered a viable inroad to increasing the rate of restoration in each state, especially toward enabling access to more efficient-to-deliver funding.



A PA Farm Along the Susquehanna ©Cameron Davidson

Another common note was the need to expand the number of funding programs that offer timelines which are aligned with restoration project timelines (i.e., 5 years). The [National Fish and Wildlife's](#)

[2026 Chesapeake Bay Innovative Nutrient and Sediment Reduction Grant](#) is a recent example of a restoration-relevant grant that offers a longer timeline. Participants were grateful for this effort, but generally felt other funding programs should develop models that similarly allow for longer timelines to better support efforts across the entire project implementation timeline, from outreach/engagement to final construction. A related call was for additional funding programs to support restoration *and/or* long-term maintenance and monitoring (e.g., see for an example the [Chesapeake Bay Trust's Pooled Monitoring Initiative's Restoration Research Award Program](#)).

Permitting Solutions

Permitting challenges were noted by practitioners in all states other than MD (see above). However, between the Fall 2025 practitioner workshops and the Spring 2026 policy workshop, progress had been made to reduce permitting timelines, especially in VA and PA. Despite progress, the permitting process in each state is still complex and participants acknowledged that significant efficiency gains depend upon navigating the application correctly.

Group members noted that some of the permit related challenges came from permit applications being too hastily developed and submitted, which created a “design-by-review” culture. As a result, underdeveloped applications needed to be improved via permit reviewer comments, and then revised, causing increased timelines.

Ultimately, there was a recognized need to accelerate the permitting process to be as efficient as possible, especially given the noted challenge with grant-timelines being too short relative to project length. A common participant comment was that if restoration practitioners undertook regional prioritization to identify key areas for large-scale, multi-site restoration efforts, and subsequently undertook umbrella permitting for the given area, it would be acceptable to permittees in each state and could dramatically accelerate review timelines for specific sites (if permits were well designed) and/or create a pathway for the development of a permit waiver for a given multi-site project area. This suggestion is largely aligned with the [“Batch and Build” approach developed in Iowa](#), where project sites are clustered together to support more efficient design,



Wetland Restoration Training on the Eastern Shore of VA ©The Nature Conservancy

permitting, and construction. Ultimately, implementing this type of bulk-permitting approach would depend on a similarly structured engagement and project prioritization process as used in this batch and build

model. However, it was noted that this approach could result in much more efficient permit review, especially in PA.

Capacity Solutions

Reflecting practitioner comments, policy attendees confirmed that restoration capacity is severely limited in each state and across the watershed, making it a key bottleneck. The financial realities that state, federal, and non-profit organizations were facing at the time of the workshop meant that simply hiring themselves out of capacity issues was not a realistic solution

Some participants felt that there was a need to inject funding into the system, and especially to secure long-term funding (5 years or more) to successfully hire, train, and develop impactful restoration practitioners (see *Funding solutions* above for additional solutions to this). But given contemporary financial realities, grant funding was seen as the only short-term remedy. Some, however, did note that focusing efforts on larger scale, more regionally clustered restoration projects, as opposed to smaller, dispersed wetlands, could create capacity efficiencies and should be a strategic priority (see *Batch and Build* model above).

Moreover, a widespread call for more cross-organizational partnerships toward capacity sharing emerged from policy workshop attendees. This call mirrors the interests shared by practitioners. Working together, in a coordinated manner, was seen as necessary to address capacity challenges, where federal and state governments, non-governmental organizations, and private sector firms could hire and share positions strategically. To move toward this end, there was an expressed need for more networking and collaboration and for coordinator positions that could support the effective integration of these efforts at the state and cross-state level. The [Upper Susquehanna Coalition](#) was noted as an example of a success partnership model by workshop participants. Similarly, the [Delmarva Wetland Partnership](#), a multi-organization group working on wetland restoration, reflects this model of strategic capacity sharing and coordination—a model that has proven effective at increasing efficiency.

Awareness and Prioritization Solutions

On the knowledge and attitudes front, attendees felt there was a need for more effective and strategic communication to illustrate the importance and benefit of wetlands, especially to state-policy makers. For restoration practitioners, the benefits of cross-organizational partnerships were again noted—in this case, to facilitate knowledge sharing of diverse private and public restoration programs with potential landowners.

To increase prioritization of non-tidal wetlands in state policy, workshop attendees perceived opportunities to increase the demand for wetlands through regulatory mechanisms (that would also increase funding). Notably, they were not calling for new regulatory approaches, but rather the adjustment of existing regulatory approaches to create more funds or simply enabling conditions that would better support voluntary wetland restoration. One suggestion was changing mitigation programs to generate additional funds (beyond mitigation) that could be used to support voluntary restoration. Mitigation programs in each state were generally seen as successful regulatory models (see more on each state's mitigation programs [here](#)), helping to offset wetland loss from

development through funding project creation. But a similar model that could accelerate demand for voluntary restoration toward gaining acres was missing. Participants wondered if an adaptation to the mitigation program structure in each state could generate a more durable source of voluntary restoration funds.

Similarly, Maryland participants felt that wetlands can support the state's municipalities in meeting MS4 stormwater management permitting requirements but are not well integrated into the regulatory framework. This potential for MS4 to better encourage wetlands extends to the other states in the watershed as well (see funding solutions above for additional context).

Among these options, it was noted that a common definition of "restoration" would be needed and helpful, as lack of clarity on this point was creating confusion for what could count as restoration and thus be considered in water quality outcomes and/or state funding programs. The Chesapeake Bay Program is currently working to address this point, with the release of further guidance pending.



©Cameron Davidson

CONCLUSIONS

This report aims to identify challenges and potential inroads to accelerate non-tidal wetland restoration progress across the Chesapeake Bay Water. Drawing on landowner survey data, practitioner workshops, and a policy workshop, we mapped barriers and solutions between 2022 and 2026. Our work reflects and builds on other recent efforts to identify the roadblocks to more widespread wetland restoration, such as the [Chesapeake Bay Program's 2022 Restoring the Wetlands of the Chesapeake Bay Workshop](#).³ Our work finds many of the same bottlenecks noted in this earlier workshop and in other past studies. However, we build on these efforts through emphasizing these challenges with more granular survey and focus-group (i.e. workshop) data, and through a more focused account of the potential solutions to these challenges.

Looking across the research efforts covered in this report, thematic barriers to more efficient and at-scale wetland restoration include:

³ The MD and DE survey data from this report was presented and referenced in this workshop as well.

- Inaccessible, inefficient, or insufficient available public and private funding for restoration given project costs, demands, and timelines
- Permitting application timelines taking too long and costing too much (though solutions are being enacted)
- Restoration capacity is generally insufficient to meet possible landowner demand, and has specific bottlenecks
- Limited demand/prioritization for wetlands, given insufficient awareness among landowners about restoration programs for their land, practitioners' sometimes siloed understanding of restoration funding opportunities, legislators' perceptions when it comes to wetlands and their benefits related to achieving state environmental goals; and regulatory and crediting models not effectively incentivizing wetlands as a solution to targeted challenges (e.g., water quality or flood prevention)

Solutions for these challenges broadly include:

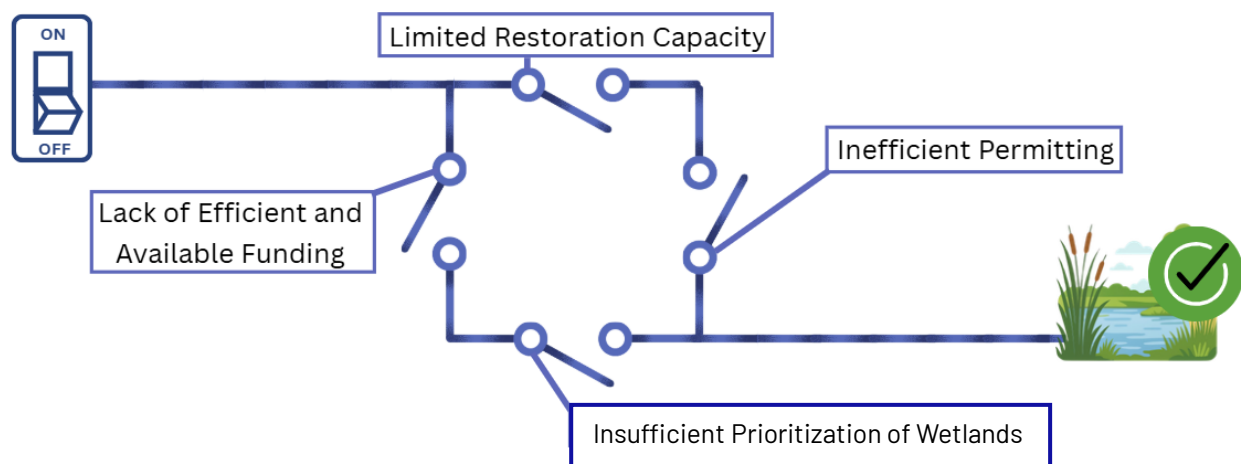
- **Funding:** Adapt applicable state funding programs to target wetland restoration more acutely, and/or pursue large-scale grants, such as Regional Conservation Partnership Programs (RCPP), that can catalyze partnerships and facilitate access to more efficient project funding.
- **Permitting:** Regional prioritization and bulk permitting applications for these targeted projects can reduce timelines and work well with recent adjustments in watershed states
- **Restoration capacity:** Develop more cross-organizations partnership models to support capacity sharing and strategic hiring
- **Limited awareness and prioritization of non-tidal wetlands:** Conduct strategic education campaigns to illustrate multiple benefits of wetlands, particularly focused on state policy makers. Emphasizing the cost effectiveness of wetlands as solutions to pressing state challenges (e.g. water quality, community flood resilience, etc.) is critical to gaining political support for wetland restoration efforts across states.

Solving a Systems Issue

The above barriers and solutions align closely with those identified in previous work, from both [2014](#) and [2022](#). Our work builds on these previous reports through greater detail into the challenges and solutions, and we draw on more data from diverse populations (landowners, practitioners, organization representatives and policy makers) to support these conclusions.

Additionally, we argue that viewing these barriers and solutions in isolation from one another creates its own challenges—and thus we argue for a more comprehensive approach to enacting these solutions.

Figure 7: A Depiction of the Interrelated Barriers to Accelerated Restoration as Faults in a Circuit



Wetland restoration operates as a “system,” where the efficiency of the whole restoration process is impacted by each phase or step of restoration. These phases—for instance, landowner engagement or permit application—do not operate in absolute isolation from one another. This means that each phase must be made more efficient, but also that efficiency gains in one phase alone do not significantly alleviate challenges in the whole system, as inefficiencies in one phase can bottleneck the entire process. For instance, making permitting more efficient does not lead to restoration funds being more accessible or easier to navigate, nor does it support the increased staffing of engineers. Similarly, while scaling-up restoration staff can generate more outreach and landowner interest, uncertain funding sources and long permitting timelines can discourage landowners from turning interest into action, or these inefficiencies require restoration staff to spend more time and effort per project, which limits scale. Solving one problem at the time leaves critical faults in the system, that limit the ability for significant progress in the pace and scale of restoration (see Figure 7).

Ultimately, accelerating wetland restoration in the Chesapeake Bay watershed likely depends on solving, or at least mitigating, all four identified major barriers at once. While this conclusion may seem to place the solution bar too high, we think such an approach is both necessary to enact if significant restoration efficiency is to be gained, but that piloting/testing this comprehensive solution is also achievable.

Policy-workshop participants proposed an idea related to this system solution concept—multiple attendees stated the need for a “one-stop-shop for restoration.” What they commonly meant was a partnership model where each restoration phase—from outreach to design and permitting, to contracting for construction, and funding delivery—could be combined in a streamlined mechanism. For clarity, we refer to this model as a *Comprehensive Approach to Restoration*. [This concept aligns with recommendations from another recent report focused on tidal wetland restoration.](#)

The opportunity to draw on large sources of restoration funding, like the USDA NRCS's Regional Conservation Partnership Program (RCPP), to develop a comprehensive approach partnership model and leverage recent progress in permitting streamlines was suggested in a concluding session of the meeting. The above offered recommendations (See **Report Recommendations**), though stated separately, should be read and interpreted as elements of a systematic solution in line with this suggestion and implemented as such. These solutions—increasing awareness/prioritization, priority multi-project siting and umbrella permitting, multi-organization partnership models, and scaled-up, restoration funding—should, in other words, be pursued together and funding programs such as a cross-state RCPP may be a sufficient catalyzing vessel that could enable the piloting of this comprehensive approach across key regions of the Chesapeake watershed.



Floodplain Restoration Construction in PA ©The Nature Conservancy

Report Information

Report Authors

Matthew Houser, PhD

Senior Social Scientist
The Nature Conservancy, Chesapeake Bay Program
Assistant Research Professor,
University of Maryland Center for Environmental Science, Horn Point Lab

Samantha Heyn

Conservation Information Manager
The Nature Conservancy, Chesapeake Bay Program

Su Fanok

Director, Freshwater Conservation
The Nature Conservancy, PA/DE

Amy Jacobs

Chesapeake Bay Program Director
The Nature Conservancy, Chesapeake Bay Program

Project Team

Matthew Houser, The Nature Conservancy, Chesapeake Bay Program/ University of Maryland Center for Environmental Science, Horn Point Lab

Samantha Heyn, The Nature Conservancy, Chesapeake Bay Program

Amy Jacobs, The Nature Conservancy, Chesapeake Bay Program

Su Fanok, The Nature Conservancy, PA/DE

Michelle Dietz, The Nature Conservancy MD/DC

Humna Sharif, The Nature Conservancy MD/DC

Evan Endres, The Nature Conservancy, PA/DE

Mikaela Ruiz-Ramon, The Nature Conservancy, VA

Kati Booth, The Nature Conservancy, VA

Emily Knearl, The Nature Conservancy, PA/DE

Jonathan Niles, The Nature Conservancy, PA/DE

Andrew Wells, The Nature Conservancy MD/DC

Project Steering Committee

Chris Guy, U.S. Fish and Wildlife Service

Amy Handen, Environmental Protection Agency

Pamela Mason, Virginia Institute of Marine Science

Su Fanok, The Nature Conservancy, PA/DE

Acknowledgements

Thanks to the numerous staff members of wetland restoration related organizations who partook in our workshop sessions, providing incredible insight. Thank you to the over 1,600 individuals who completed our surveys, we appreciate the time and effort! And thank you to The Chesapeake Bay Trust, The U.S. Environmental Protection Agency, and the Chesapeake Bay Program for providing the funding to support this work. Special thanks to our project Steering Committee for their guidance.

Appendix A: State Specific Recommendations from Practitioner Workshops

Pathways to Increase Wetland Restoration in Delaware: Practitioner Suggested Changes

1. Increase Landowner Outreach and Engagement

Low historical exposure to wetland restoration opportunities remains a primary constraint on landowner participation.

- Expand outreach and education efforts to increase awareness of wetland restoration programs
- Tailor engagement strategies based on survey findings related to landowner knowledge gaps and past exposure
- Improve communication about the benefits, requirements, and long-term impacts of wetland restoration

2. Revise and Socialize Wetland Permitting Processes

Permitting complexity, cost, and inconsistency across jurisdictions can discourage restoration efforts.

- Standardize permitting processes across state and county jurisdictions
- Initiate state- and county-level communication and education efforts with permitting staff to improve coordination
- Reduce costs and review timelines associated with permitting requirements
- Create agricultural land use exemptions for wetland restoration and/or add permitting review staff to streamline approvals

3. Address Restoration Capacity Constraints

Limited technical and organizational capacity affect the pace and scale of wetland restoration projects.

- Support cross-organizational partnership development through targeted funding and/or memoranda of understanding (MOUs) with NRCS
- Increase NRCS program capacity by strategically engaging state agencies and nonprofit organizations to deliver, administer, and support implementation of NRCS programs.
- Expand wetland design and outreach capacity within nonprofit organizations to improve project development and landowner engagement

4. Redevelop Funding Models to Align with Restoration Timelines

Current funding structures often do not align with the full lifecycle of wetland restoration projects.

- Expand funding timelines to better match the pace of wetland restoration, which can extend up to five years from outreach to project completion

- Reduce organizational costs associated with long-term project maintenance and monitoring
- Eliminate lower acreage limits in the NRCS Geographic Area Rate Cap (GARC) process to avoid unnecessary delays in property appraisals for Farm Bill programs

Pathways to Increase Wetland Restoration in Maryland: Practitioner Suggested Changes

1. Increase Landowner Outreach and Engagement

Limited past exposure to wetland restoration opportunities remains a primary barrier to participation among landowners.

- Expand outreach efforts to raise awareness of wetland restoration programs
- Tailor engagement strategies based on survey findings related to landowner knowledge gaps and concerns
- Strengthen communication channels to improve understanding of program benefits and requirements

2. Address Restoration Capacity Constraints

Scaling wetland restoration in Maryland will require increased technical, organizational, and staffing capacity.

- Support cross-organizational partnerships through targeted funding and/or memoranda of understanding (MOUs) with NRCS
- Increase NRCS program capacity by strategically engaging state agencies and nonprofit organizations to deliver, administer, and support implementation of NRCS programs.
- Expand wetland design and outreach capacity within nonprofit organizations to improve project development and landowner engagement

3. Redevelop Funding Models to Align with Restoration Needs

Existing funding structures often do not align with the temporal and administrative realities of wetland restoration projects.

- Expand funding timelines to better match the full wetland restoration process, which can extend up to five years from outreach to project completion
- Eliminate lower acreage limits in the NRCS Geographic Area Rate Cap (GARC) process to avoid unnecessary delays in property appraisals for Farm Bill programs

Pathways to Increase Wetland Restoration in Pennsylvania: Practitioner Suggested Changes

1. Increase Landowner Outreach and Engagement

Low historical exposure to wetland restoration programs continues to limit landowner participation.

- Expand outreach efforts to increase awareness of wetland restoration opportunities

- Address landowner perceptions of wetlands based on survey findings related to past exposure
- Tailor communication strategies to improve understanding of restoration benefits and program requirements

2. Revise Wetland Permitting Processes

Permitting complexity and variability across jurisdictions can slow or prevent restoration projects.

- Standardize permitting processes across state and county jurisdictions to improve consistency
- Create agricultural land use exemptions for wetland restoration
- Build state capacity to accommodate increasing restoration demand

4. Address Restoration Capacity Constraints

Limited technical, staffing, and organizational capacity restricts the pace and scale of restoration.

- Expand wetland outreach capacity within nonprofit organizations
- Support cross-organizational partnerships through targeted funding and/or memoranda of understanding (MOUs)
- Increase NRCS program capacity by strategically engaging state agencies and nonprofit organizations to deliver, administer, and support implementation of NRCS programs.

5. Redevelop Funding Models to Support Project Lifecycles

Existing funding models often do not reflect the full cost or duration of wetland restoration projects.

- Expand funding timelines to align with the complete restoration process, which can extend up to five years from outreach to project completion and allow multi-phase awards or rolling funding that avoids project gaps between design, permitting, construction, and monitoring
- Encourage design-build or design-permit-construct approaches through more flexible funding requirements and procurement alignment
- Develop funding programs that better align with project costs, particularly those related to legacy sediment remediation
- Develop funding sources to fund long-term project maintenance and monitoring

Pathways to Increase Wetland Restoration in Virginia: Practitioner Suggested Changes

1. Increase Landowner Outreach and Engagement

Expanding wetland restoration in Virginia requires improved engagement with private landowners, particularly given historically low exposure to restoration opportunities.

- Increase outreach efforts to improve awareness of wetland restoration programs
- Tailor engagement strategies to address landowner concerns and knowledge gaps
- Utilize survey results to inform outreach messaging and delivery methods

2. Reduce Upfront Costs for Restoration Participants

High initial costs present a significant barrier to participation in wetland restoration programs.

- Develop programs that minimize or eliminate participants' upfront expenses
- Structure funding mechanisms to reduce financial risk for landowners
- Align program design with survey findings on cost-related barriers

3. Revise and Localize Wetland Permitting Processes

Permitting complexity and costs can delay or discourage wetland restoration projects.

- Standardize permitting processes where feasible and reduce associated fees
- Establish dedicated state or county-level permitting staff focused on wetland restoration projects
- Create agricultural tax exemptions for wetland restoration activities and/or increase permitting review staff to streamline approvals

4. Address Restoration Capacity Constraints

Limited technical and organizational capacity constrain the ability to scale wetland restoration.

- Support workforce and organizational partnership development through targeted funding and/or memoranda of understanding (MOUs) with NRCS
- Increase NRCS program capacity by strategically engaging state agencies and nonprofit organizations to deliver, administer, and support implementation of NRCS programs.
- Expand wetland design and outreach capacity within nonprofit organizations

5. Redesign Funding Models to Match Restoration Timelines

Current funding structures often do not match the timeframes or cost realities of wetland restoration projects.

- Expand funding timelines to align with the full restoration lifecycle, which can extend up to five years from initial outreach to project completion
- Reduce long-term costs associated with project maintenance and monitoring
- Develop a state program focused on non-tidal wetland restoration that includes direct landowner incentives
- Adjust EQIP cost-share rates to better reflect actual expenses, particularly on the Eastern Shore

Appendix B. Practitioner and Policy Workshop Results

Table 1A: Watershed-wide Barriers, Their Implications, and Recommended Solutions from Practitioner Workshops				
Area/Type	Noted barrier(s)	Implications	Practitioner Recommended Solutions	States
Permitting	Limited state-level regulatory staff capacity	Causes delays in permitting process	Increase the staffing capacity of regulatory agencies to reduce review timelines.	VA, PA, DE
	Inconsistent state-level regulatory standards	Creates uncertainty about required permits and situations where regulators request modifications beyond their official scope	1) Create standardized permitting frameworks to reduce variability and streamline the review process across the state. 2) State government should initiate top-down communication to educate permitting staff about wetland restoration, provide guidance on permitting procedures, and signal that more restoration projects are expected.	VA, PA, DE
Capacity	Limited outreach capacity across agencies/orga nizations	Leads to reduced landowner awareness and fewer restoration opportunities		MD, DE, VA, PA
	Limited NRCS Capacity to review and process WRE, EQIP and CREP applications	Results in delays or prevents landowners from submitting applications	1) Develop a Memorandum of Understanding (MOU) with state NRCS to support job approval authority and training for certification as technical service providers to enable non-federal actors to assist NRCS and expand program capacity. 2) Increase NRCS staff/NGO partner staff with the authority to move WRE applications through the NRCS ranking and approval process.	MD, DE, VA, PA
	Limited design capacity across agencies/orga nizations	Results in delayed restoration and less bandwidth for new projects	1) DU hire another engineer to increase capacity in DE, MD, VA	MD, DE, VA
Funding Accessibility & Structure	Funding durations misaligned	Makes funds difficult to use effectively	Improve grant programs to address short funding durations and streamline grant administration	MD, DE, VA, PA

	with project timelines			
	Project maintenance and monitoring required but not funded	Implemented projects more likely to go unmaintained and restoration work at risk of being lost; can discourage willingness to take on new/more projects	Create grant program(s) to support maintenance and management of restored wetlands.	DE, VA, PA

Table 2A: State-Specific Barriers, Implications, and Recommended Solutions from Workshops				
Barrier area	Noted barrier(s)	Implications	Practitioner Recommended Solutions	States
Permitting	High permitting costs	Disincentivizes landowner participation or necessitates supplemental funding	Create an agriculture land permitting exception for the construction/restoration of wetlands.	VA, PA
Capacity	Lack of cross organizational partnerships and communication pathways	Limits ability to pass on potential projects and share workload	1) Create grant program(s) to support partnership development and initial project funding in order to catalyze partnership efforts 2) Develop a Memorandum of Understanding (MOU) with state NRCS to support job approval authority and training for certification as technical service providers to enable non-federal actors to assist NRCS and expand program capacity.	VA, PA
	Existing federal and state capacity has limited knowledge of wetland restoration and funding programs (e.g., SWCD staff)	Results in delayed restoration timelines and limits outreach	Targeted education campaigns for practitioners and government staff to improve understanding of wetland restoration processes.	VA
Funding Accessibility & Structure	Use of Farm Bill funding requires IRS Annual Gross Income Review which is extending past application review window	Causes landowner applications to be deferred until following year		MD DE
	NRCS's Wetland Reserve Easement appraisal process extending past	Causes landowner applications to be deferred until following year	Change the federal Geographic Area Rate Cap (GARC) process toward reducing the challenges associated with contract creation. The GARC process could be supported by	MD, DE

	application review window		eliminating the lower acreage limitations to avoid unnecessary delays in property appraisals.	
	Federal grant programs require the solicitation of multiple bids to proceed with construction of projects	Slows down restoration process and dampens the potential for cross-organization partnerships		VA, PA
	Funding rates (e.g., from grants) does not align with project cost	Necessitates piecing together various funding streams for one project	Improve funding programs to expand support for design, permitting, and construction	PA
	State funding sources do not include incentives for landowners	Fewer landowners pursue restoration opportunities	Modify funding programs to support cost-share for non-tidal wetland restoration on agricultural lands.	VA
	Lack of state-prioritized funding for non-tidal wetland restoration	Less funds available		VA

Table 3A: Barriers Discussed During Policy Workshop	
	Specific Barriers Noted
Funding Accessibility & Structure	• Inflexible federal and state program requirements (e.g., WRE eligibility issues) • Decreased availability of restoration funding writ large • Need to assemble multiple grants to fund large projects • No clear funding pathways for large-scale projects • Wetlands competing with more lucrative land uses (e.g., solar) • Not all landowners qualify for existing federal programs, eligibility requirements complex
Inefficient Permitting	• Permit costs are not increasing, rather the cost to have consultants navigate permitting is (e.g., \$5k-\$10k in VA) • Significant staff and consultant time to develop permit plans • Uncertainty around waivers and permit requirements • “Design-by-review” culture with incomplete or poor applications being submitted • Long authorization timelines for permits compared to grant timelines
Limited Restoration Capacity	• Staffing shortages, especially for federal restoration programs. • Lack of engineering capacity. Few engineers qualified to produce wetland plans within the watershed produces a bottle neck. • Limited organizational capacity to manage large, complex projects. • Few organizations working in wetland restoration due to high barriers, creating capacity issues. • Political constraints limiting new staff or funding (e.g., PA). • Potential solutions not being realized: Cross-organizational and sector partnerships. • Limited networking, existing coordination, and coordination gaps hinders partnership development.
Insufficient Awareness and Prioritization of Non-Tidal Wetlands	<i>Landowners/farmers</i> • Often unaware of restoration opportunities (confirmed by survey) • Feel wetlands are a burden or may not be incentivized enough to implement, an especially prevalent opinion among farmers <i>Restoration practitioners</i> • Too few current practitioners • educated/experienced in non-tidal wetland restoration practices • Limited knowledge of the diverse (and often confusing) funding-program landscape, limiting ability to provide interested, but ineligible, landowners with alternatives <i>Legislators</i> • Limited awareness of the multiple benefits provided by non-tidal wetland restoration (biodiversity/habitat, water quality, and flood resilience), and therefore limited desire to support more directed restorative programming