Accelerating Progress on Riparian Forest Buffer Goals: Financial and Human Capacity Factors

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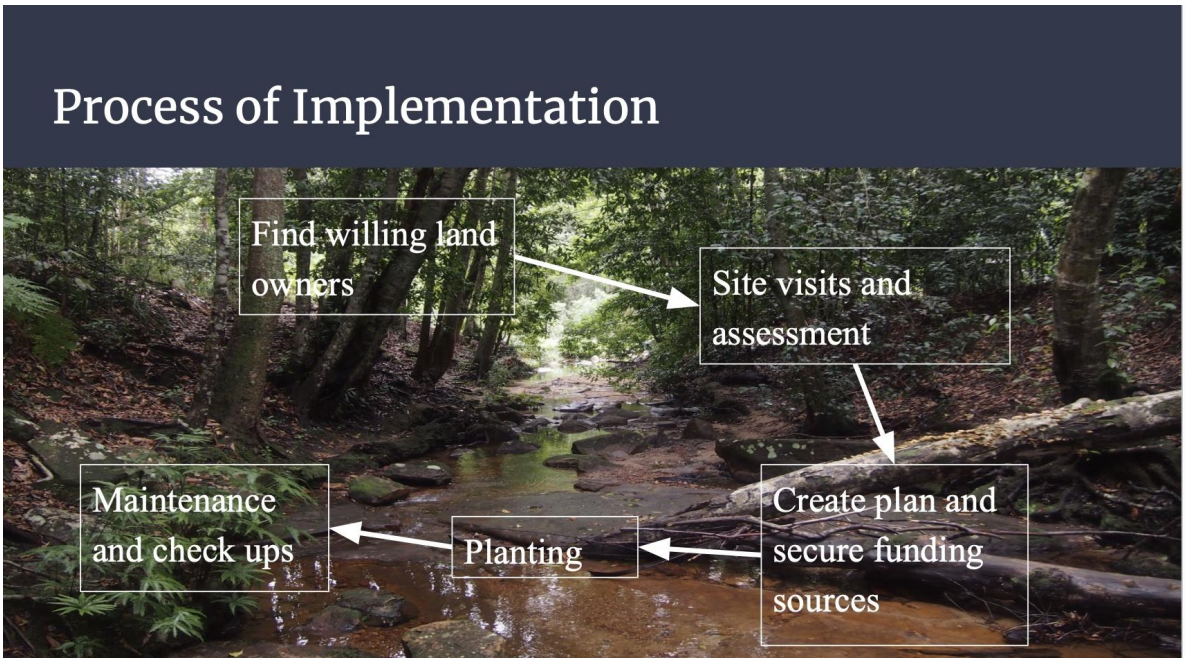
Background

The Chesapeake Bay is a world-class natural resource. Besides being one of the largest estuaries in the world, it provides countless benefits. This amazing body of water begins with small streams and creeks which eventually converge to form the larger rivers that flow into the Bay. Their condition directly impacts the bay's condition. For a long time, these streams and the land around them have been overdeveloped and disregarded, leading to poor water quality in streams and the Bay. Riparian Forest Buffers or (RFBs) are a crucial strategy in remedying the problems of the Bay.



RFBs help provide many benefits and contribute to other outcomes of the watershed. It makes sense that restoring nature leads to a healthier bay with more habitat for wildlife, better water quality, cooler water temperature, healthy fish populations, and increased protection against the effects of climate change.

The state of RFB planting is far from where we need it to be. Because of all the benefits Forest Buffers provide, the Chesapeake Watershed Agreement set an ambitious goal to plan 900 miles per year of new buffers. Some states set even bigger goals in their Watershed Implementation Plans (WIPs). In 2021, only 230.5 new miles were reported by all the states. A massive gap exists between the current levels and goals.

I originally started my project with the prompt of evaluating the financial and human capacity needed for accelerating RFB planting. There was a gap in knowledge of what was necessary (people and funding) to meet this goal of 900 miles a year.

Information Collection Methods

To start my research, I did background research on forest buffers to better understand the complex process of implementation. I also learned about all the partners involved with planting and maintenance and the different roles they play. Once I had a foundation, I interviewed various partners involved with the forestry work group. During these interviews I utilized the snowball method, getting new contacts from each interview, and then repeating. This was to branch out and cover as much of the watershed as I could.

I used a semi-structured interview style. I started with a list of questions but the interview was fluid depending on the role and programs of various interviewees.

Results

Based on my interviews with partners and the estimates they provided, I estimated that on average, organizations can plan and coordinate the planting of 40 acres per staff person per year. In most cases, the planting and post-planting care is contracted out or volunteers/interns are being utilized. The programs interviewed all were a part of distinct partnerships and had many other factors that could have affected their capacities and in turn, affected this range. Examples include but are not limited to contractor availability, types of projects planted that year (larger or smaller), and flexibility of funding sources. Partners had cited new staff as a cause for lower acres per year with an expectation of productivity/acres per year almost doubling once acclimated to the work.

Based on the estimated capacity of a singular staff person (40 acres) the gap between the acres planted in 2021 (2794) and the acres needed to meet the goal in the watershed agreement (10,909), It is calculated that ~200 additional full-time equivalents (FTE) would be needed to meet the goal.

This staff number is massive and would also require large increases in other capacities such as the internal capacities of organizations that house these buffer programs (including HR, grants management, and other staff) and contractor capacity to plant and maintain the buffers.

Case Studies

The significant increase in needed staff is difficult to digest, but many great things are happening with forest buffers in the watershed. Although there are many others, in this section I will detail a few programs with innovative approaches to get more buffers on the ground.

-James River Buffer Program

The James River Buffer Program has enjoyed rapid growth over the past couple of years. Their use of a turnkey model in which landowners can receive a buffer at no cost or work to them has been very successful. With demand being higher than their capacity, there has been a limited need for outreach. They have an amazing, long-term funding source in VEE (Virginia Environmental Endowment). That allows them to spread money across the budget and provide funding for each step of the process, including maintenance. Recently the Upper

James River Buffer Program was started by the CBF, accessing money from the VEE and increasing the reach of the JRBP.

-Sustainable Dairy PA

The Initiative has been a huge step in the right direction. The Alliance for the Bay has been able to bridge private corporations and environmental conservation and restoration. While these corporations are not known to be very conscious of the environment, in recent years, many have committed to goals in their supply chains relating to sustainability and climate change. For example, Turkey Hill was looking to meet water quality goals and Hershey was looking to lower emissions. The Alliance has connected them with a means to meet these goals. While the program and most farmers focus on various Ag BMPs, the Alliance requires RFB to be included for the farmer to access other funds for other BMPs. There have been a few times farmers have not been receptive to this, but most of the time farmers are willing to plant buffers to access the funds. The partnership with Turkey Hill had another bright spot, through the relationship with the Maryland Virginia Dairy Cooperative which supplies Turkey Hill Milk. In partnering with such a well-respected organization the Alliance was able to gain trust with these communities and dairy farmers that in the past may have been very hesitant to implement conservation plans. In combination with being an NGO, they were able to get over some hesitancy that exists about interactions with the government.

-Cacapon Institute

This program is slightly different than most, focusing on urban forestry. They are moving into the RFB space in the coming years. For now, their work is focused on communities. They utilize community volunteers, looking to involve schools, faith-based groups, HOAs, and friend groups. These groups are provided the materials and TA (Technical Assistance) needed for plantings. In this model, the Cacapon Institute can offer community-building exercises while getting trees planted by these groups that have a larger capacity. They do require increased coordination of volunteers, but it gives the program people who can get trees in the ground and integrate trees into programs that usually don't have an environmental focus.

-Creek Releaf

Creek Releaf is a program in Frederick County MD which plants trees to help the county government to meet their MS4 permit requirements. The county being on board with the project provides an amazing steady source of funding. They can fund maintenance and easement payments. Easements are another differentiating piece of this program. They provide a similar turnkey approach that others have, but in this case, they require a conservation easement to be placed on the land after planting. This approach ensures the work that they have accomplished in getting these buffers planted will be maintained over the long term. Some issues arise when talking about easements dealing with mortgages and lower demand due to the commitment involved with an easement. Another special piece about this program is its use of contractors and consultants. For planning, planting, and maintenance,

contractors are utilized. Staff act as coordinators and work with landowners while lining up the rest of the work. While other jurisdictions may not have this contractor capacity or funding, in Frederick County it helps Creek Releaf have very high acres per staff.

Discussion

Challenges to building financial and human capacity

Funding sources that lack flexibility have posed challenges for buffer programs. Geographic limitations on the spending, as well as the length of grants being around 3 years, are not enough to cover the full process of buffer implementation, leaving out maintenance. A lot of the funders of these grants are looking for new ideas or projects when it comes to selecting grants but in many cases, these programs are doing great work and just need consistent funding to keep doing what works.

At the same time, funding sources are mainly focused on plantings and not the personnel getting these buffers on the ground. Lack of stable funding is holding back organizations from increasing capacity. The money is there but no one knows if it will still be there in a couple of years. Organizations are not able to commit to full-time employees when their funding may only be secure for 3 years.

Buffer Programs that have been very successful at staffing up have had trouble keeping that growth up due to the limited internal capacities of programs and larger organizations. This has led to problems with tracking and reporting in organizations that have been able to grow at a great rate.

There are also capacity challenges with contractors, who often do the majority of the actual planting and maintenance. Throughout the watershed, contractors and availability differ. Many groups have been able to utilize contractors who can complete all their planting and maintenance needs at scale and in a cost-effective way. This has been helpful in terms of decreasing the coordination needed to manage multiple contractors. However, many interviewed had at least some challenges with securing contractors for their planting and maintenance activities.

Engaging with the private sector is very important; however, in some cases, net zero goals are driving deforestation. The rapid expansion of solar especially in Northern Virginia has mostly been placed on previously forested areas. We must find ways to transition to clean energy and preserve what is still left of the natural environment, including places where we have mature RFBs.

Opportunities for capacity building

With the big influx of federal funding through the Inflation Reduction Act and the Bipartisan Infrastructure Law, funding for plantings is everywhere and people want to see these plantings happen. Even with the funding challenges, there are sources in the watershed Bay that have been able to pool funding and provide it in a flexible way to cover maintenance. Some great sources of funding include VEE, NFWF, Chesapeake, and Atlantic Coastal Bays Trust Fund.

The turnkey model has been very popular with landowners. These programs take care of each step of the process from project planning to maintenance. Programs with this approach have been so successful, that they have had limited need to perform additional outreach because information about the programs is spreading through word of mouth. The main issue is keeping up with the demand for buffers.

In recent years a lot of focus has been on sustainability and climate change. Partnerships between organizations around the watershed Bay and large corporations are largely unexplored. The work done with Sustainable Dairy represents a lot of potential in connecting corporations with methods to meet their sustainability goals. RFBs may not be the first practice farmers are looking for. Looking at the Alliance's work under Sustainable Dairy, requiring RFBs to access funds to implement other BMPs may help generate interest among farmers. This shows that buffers can be packaged effectively with other practices and funding.

RFBs can be used for community building and providing multiple benefits to community members. It involves people who would not usually be in the environmental space and helps add capacity to get trees in the ground.

Conclusions

Right now, there is an unprecedented amount of funding for planting. The issue arises when it comes to having staff on the ground to spend that money. This money pouring in is not doing much to increase staffing and in most cases does not take into account needed funds for multi-year maintenance of buffers. Consistent funding is needed that gives programs confidence to expand their capacities.

Contractors can be very helpful in increasing productivity and capacity when program staffing is limited. Most organizations are utilizing contractors at a high rate. Using the same contractor for planting and maintenance gives the contractor more responsibility for the quality of work done.

Volunteer use is higher in smaller acreages and when community building is a priority. Volunteers require more coordination than utilizing contractors but the community can be engaged with planting trees at the same time. Community group networks and people are a great asset gained by this type of work. Their networks provide great outreach opportunities and build trust in the community.

Partnerships with these large corporations are a possible way to expand funding and demand for buffers and groups in the watershed can connect them with ways to meet their sustainability goals locally. These private sources of funding can also be more flexible for funding maintenance and staff than more traditional public grant funds. Although these projects are new, the projects being done by the Alliance for the Bay are showing promise.

Recommendations

Contractors are playing a prominent role in getting buffers on the ground. They are very helpful for efficiency in allowing staff to do more and get money spent on putting buffers down. The role needs more focus, to see ways to expand their reach to provide sources of

labor for rural programs with limited staffing. With the widespread increase in capacity needed to plant more buffers, the contractor's capacity will need to be examined. Methods will have to be created to expand that capacity as well.

There is a need for funds that can pool money from different sources for buffers and provide that money to programs with fewer strings attached. Provide more straightforward longer-term grants to give buffer programs more time to keep doing what's working. These sources also need to provide longer-term, consistent funding with maintenance in mind.

Opportunities in the watershed to involve the large corporations who profit from the use of the land need to be explored. These corporations have various sustainability goals to meet but finding ways to tailor programs and projects to their needs can be another great funding source for restoration and conservation.

In places where there is lower demand for buffers, increased cooperation with grassroots organizations that farmers are familiar with is needed. These organizations help deal with a lot of usual skepticism that might accompany environmental groups doing work on their land.

Next Steps/Further Research Paths

To continue to expand our understanding of the financial and human capacity needed to accelerate forest buffer planting, the following areas should be researched further:

- Requirements of easements with buffers are not common. They face lower landowner demand because of the long commitment. On the other hand, the buffers are secured from development for the future. Looking into the long-term outcomes of buffers would help weigh the pros and cons of easements.

- Contractors are very in demand from organizations and their capacity seems close to reaching in most parts of the watershed. To increase the size of buffer programs the current capacity of and current market has to be looked into. Ways have to be looked at to increase the contractor's capacity.

- The Alliance for the Bay has had success partnering with and involving large corporations. Many opportunities out there exist and will have to look through the supply chain of farms and find those corporations who are at the end. Find ways to tailor projects to give them a way to meet their sustainability goals.

- The staff needed to meet the goals of the watershed is enormous. To double the staff, it must be examined where the potential workers are going to come from. Ways to involve different workers besides those who commonly work with buffers will have to be thought out.

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Appendix

Example Questions
-What kind of work do you do with buffers
-Buffers completed in the past year and planned
-Total staff working on buffers in any part
-Staff full-time on buffers
-Percentage of time spent on Buffers
-Tasks supported by these staff
-Acres per staff per year estimate
-Ability to complete maintenance
-Contractor usage and Volunteer Usage
-Major Funding Sources
-What do those sources do and don't do well
-Challenges to capacity
-Opportunities to increase capacity
-Landowner demand and outreach efforts
-Other good contacts to interview

Groups Surveyed

Partners Surveyed: (DCNR PA), (Upper Susquehanna Coalition), (Alliance Riparian Rangers), (MD DNR), (NRCS), (Cacapon Institute), (VDOF), (JRA), (Alliance for the Bay), (Alliance Sustainable Dairy PA), (CBF Upper James River), (Carroll Co MD DNR), (Frederick Co MD Creek Releaf)

Data is available on request

Organizations surveyed would have planted the equivalent of ~39% of the buffers implemented in 2021

Width of 100 ft used for miles to acres formula
=
Formula used for conversion=((43560*Acres)/Width)*0.000189394

Some program's Acres(Yearly) come from a 3-year estimate