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# Chesapeake Bay Riparian Forest Buffer Initiative:

## *Final Report*



*Prepared by:*



September 2015

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## Chesapeake Riparian Forest Buffer Initiative Steering Committee

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## Introduction

Restoring riparian forest buffers (RFBs) along streams is one of the most cost effective methods of reducing nonpoint source pollution loading to the Chesapeake Bay and has been an important focus of the Chesapeake Bay Program partnership for nearly 20 years. Since 2010, state Watershed Improvement Plans (WIPs) to implement the Chesapeake Bay TMDL have relied heavily on RFBs to accomplish water quality goals on agricultural lands. Without aggressive efforts to restore riparian forest buffers, states will need to find other (often more costly) strategies to reduce nearly 3.5 million pounds of nitrogen and over 157,000 pounds of phosphorus.

In addition, USDA, via the 2010 Chesapeake Executive Order Strategy, made several commitments designed to accelerate implementation of forest buffers.<sup>1</sup> Instead, RFB enrollments in the Chesapeake Bay watershed have declined dramatically in recent years and are not on pace to achieve state WIP goals. While the funding needed to accomplish RFB goals is largely available through the state/USDA Conservation Reserve Enhancement Programs, success continues to be constrained by issues related to the need for greater interagency leadership and coordination, greater program flexibility, increased incentives where they are not sufficiently competitive, increases in staffing, interagency training, and landowner outreach and education, as well as improved delivery of technical services to farmers. A further challenge is that contracts on over 37,000 acres of riparian forest buffers enrolled in CREP will expire by 2018 and need to be re-enrolled or otherwise protected.

This final report summarizes the efforts of the watershed-wide Riparian Forest Buffer Initiative. It is important to note that while this Initiative broadly examined the issue of riparian forest buffers across all state and federal programs, most of the recommendations relate to the CREPs because these are, to date, the most powerful tool for RFB enrollment being used by watershed states. While the USDA Farm Service Agency (FSA) plays a leadership role, CREP is managed through partnerships. State CREP agency partners, the USDA Natural Resources Conservation Service (NRCS), the USDA Forest Service, and NGOs, each play important roles in CREP outreach and implementation, and can help increase RFB enrollment, establishment, retention (reenrollment), and long-term success.

## The Riparian Forest Buffer Initiative

A watershed-wide effort to reinvigorate programs designed to implement RFBs was convened in June 2014 by USDA Undersecretaries Michael Scuse and Robert Bonnie, including announcement of a FSA commitment of \$5,000,000 to enhance CREP enrollment of RFBs in 2015. Speakers detailed the successes and challenges of reaching riparian forest buffer goals set for the Chesapeake Bay region, and highlighted the multiple



values achieved by restoring forests along streams and shoreline. All recognized the importance of effectively implementing the CREP program and recognized the need for a fresh look at all programs being used to address these goals, the need for strategies to overcome barriers, and to taking steps

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<sup>1</sup><http://executiveorder.chesapeakebay.net/file.axd?file=2010%2f5%2fChesapeake+EO+Strategy%20.pdf>

that would create the potential for a new generation of USDA programs aimed at riparian buffer establishment.

Professionals from the Farm Service Agency, Natural Resources Conservation Service, and Forest Service worked with state agency partners to convene task forces in each of the Chesapeake Bay states to identify barriers to enrollment/reenrollment and put forth recommendations to address the steep drop off in RFB restoration and protection. Dozens of meetings between September of 2014 and February of 2015 brought together multiple stakeholders and partner agencies in each state.

This report summarizes the overarching themes emerging from the state task force process and the key recommendations offered. Full reports from the 6 state Task Forces are attached and also be found online [www.allianceforthebay.org/riparian-forest-initiative](http://www.allianceforthebay.org/riparian-forest-initiative).

While the Initiative has drawn to a close, the significant work of implementation continues. The Executive Council of the Chesapeake Bay Program adopted the recommendations of the state task force reports in July of 2015 and recommended that they be implemented through a collaborative effort with USDA and the states. Recommended actions will also be incorporated into the workplan of the Riparian Forest Buffer Management Strategy due by October of 2015 as called for by the 2014 Chesapeake Watershed Agreement. FSA is expected to soon announce its decisions on the state requests for the \$5,000,000 in additional CREP funding for RFBs, and states will be working with USDA to amend their CREP agreements, as needed, to implement the recommendations.

#### **Key Recommendations from the Riparian Forest Buffer Initiative and the State Task Forces:**

Although challenges and conditions varied from state to state, the following represent key shared themes and recommendations:

#### ***1) A Strong commitment of federal, state, and local leadership is needed to boost RFBs.***

All six state task forces emphasized that to succeed in meeting RFB goals, a strong commitment of federal, state and local leadership is needed. High level leadership across state and federal agencies is required to motivate action on the ground, secure needed reforms, address barriers to RFB enrollment, and ensure sufficient staffing, outreach and technical assistance.

#### **Next steps include:**

- *NRCS and FSA work together to resolve CREP technical assistance delivery issues and develop goals and workplans that improve turn-around times, reward CREP Program implementation, and increase overall performance in the field. Ensure that NRCS has the capability and performance structure in place to prioritize CREP program delivery and/or explore options for state or NGO delivery.*
- *Increase cooperation between the leadership of state water quality agencies and CREP partner leadership to more directly engage WIP managers in supporting and accelerating RFB program implementation.*
- *Evaluate WIP targets and set annual riparian forest buffer implementation goals for each state and within each agency down to the local level to accelerate RFB implementation.*
- *Champion timely completion and approval of Conservation Reserve Enhancement Program (CREP) amendments to increase incentives, provide greater program flexibility, improve outreach, and,*

*where needed (VA, WV), increase total acreage allowed to enroll to meet WIP goals. Top state leadership needs to reach out to USDA Secretary Vilsack and OMB in support of these efforts.*

- *Reward creativity in implementation to maximize performance and innovation in the field.*

## **2) Enhanced financial incentives would increase RFB enrollments.**

Across the entire Chesapeake Bay watershed, enrollment in RFBs is higher where the total package of incentives offered is economically competitive and the practice makes sense within the farm's overall business operations. Although CREP rental rates are typically lower for pastureland than cropland, enrollment tends to be highest among livestock/dairy producers because CREPs can provide significant cost share assistance for fencing cattle out of streams, providing alternate water, etc. Successful outreach highlights the benefits of stream exclusion and buffers not only to streams and the Bay, but also to livestock production benefits, including improved herd health, lowered calving risk, and a clean, reliable, alternate water supply. However, continued success of RFBs in this context depends on updating marginal pastureland rental rates and increasing annual maintenance payments.

Restoring corridors of riparian forest buffers along streams in cropped areas is a more critical challenge because of the higher loading rates for nitrogen and phosphorus. In some parts of the watershed, farmers crop to the edge of the stream, exacerbating nutrient and sediment loadings to streams, increasing stream instability, and flood risk, and resulting crop loss. Some of the most difficult areas to achieve RFB goals are in watersheds dominated by cropland, such as Virginia east of I-95, Maryland's Eastern Shore, and Delaware. Given recent (2012/2013) record high corn prices and production concerns, for riparian forest buffer practices to be competitive on cropland requires strong financial incentives, outreach tailored to landowners and farmers (including absentee landowners), and sensitivity to production concerns, such as impacts of shading on row crops.

### Next steps include:

- FSA is in the process of updating marginal pastureland rental rates. States need to provide data to support higher rates for marginal pastureland to increase incentives. If MPL rates remain low, states may need to seek increased MPL incentives through CREP amendments.
- FSA has promised an increase of \$5 million in state assistance to address priority enrollment barriers and to support increased incentives such as:
  - Double annual maintenance payments to \$10/acre/year
  - Virginia, New York and Delaware requested FSA to increase rental payments for RFBs – New York and Virginia also proposed increases in state incentives.
- Enhance the RFB financial package for cropland that is enrolled in CREP. Maryland has proposed to pilot a Nitrogen Incentive Payment to accelerate riparian forest buffer enrollments in areas of high nutrient loadings particularly on crop land.
- Continue to leverage CREP, EQIP, state cost share programs, and foundation funding to maximize RFB restoration, prevent duplicity, and avoid program competition.

## **3) Increased program flexibility would increase RFB enrollments.**

All six states identified current barriers to RFB establishment that require greater flexibility in program delivery to address. "Government red tape probably scares more people away from these programs than



anything else.”<sup>2</sup> Many of the changes sought by the states are simple policy changes that do not require additional funding requests or trigger pay as you go (“pay go”) issues that would require USDA to find offset savings. Granting increased program flexibility can cut red tape, such as by making it easier for more people to participate in restoring RFBs by providing greater flexibility in buffer design, cutting time participants wait for reimbursement, and ensuring they get paid for the true costs of installing a buffer. This can lead to higher enrollment.

*Next steps include:*

- Amend CREP Agreements to provide FSA county and state committees increased flexibility to waive cost share payment caps to reflect true local costs of components like fencing, crossings and alternate water development. This is a critical part of the incentive package in pasture situations and is a non-pay go action item that could meaningfully spur RFB enrollment in NY, PA, WV, MD and VA.
- For interested states (WV, NY, MD, VA, DE), Amend CREP Agreements to allow partial practice incentive payment upon completion of components. This particularly adversely impacts low income and beginning farmers, especially if there is no state cost share immediately available to help address their cash flow needs.
- FSA and NRCS work together at the state level to allow a greater variety of riparian buffer vegetation mixes (including multi-zoned buffers along maintained drains and tax ditches) and greater flexibility in tree density requirements for natural regeneration of trees. This would help increase buffer enrollments in cropland areas, particularly in DE, MD, PA, and VA.
- Where applicable, address issue at local level of grass filter strips that have grown into trees.
- Explore opportunities for more significant role of NGOs and States in the management and delivery of the CREP program.

***4) Adequate and targeted staffing, interagency training and outreach, and technical assistance must be available to boost RFB enrollment and reenrollment.***

All six states stressed the importance of adequate staffing, interagency training and strong messaging that riparian forest buffer enrollments are a top priority:

“Effective marketing and implementation of RFBs on agricultural land requires highly trained, technical staff as well as informed and cooperative partnerships. Outreach to potential customers has proven to be a time-intensive effort that requires hours of personalized education, consulting, planning, design work, contracting, administration, and plenty of follow-up.” (Virginia Final Report).

In each of the states, RFB enrollment success has ebbed and flowed over the years due to a variety of factors, such as changes in crop prices, changes in administration, and loss of momentum, funding and staff for outreach. In many states, a key factor in strong RFB enrollment has been the work of dedicated individuals on the ground who strongly believe in the importance of RFBs and how CREP can benefit producers and farm landowners. Consistent outreach and messaging is also essential to keeping forest buffer practices a priority.

In recent years, in many states, funding and staffing cuts have hampered enrollment and outreach efforts. In some states, funding was so tight that FSA offices lacked the funding to even send out post cards to

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<sup>2</sup> Robert Whitescarver, [www.gettingmoreontheground.com](http://www.gettingmoreontheground.com)

producers with expiring CRP contracts to encourage them to reenroll their riparian forest buffers. In addition, technical assistance and long-term follow up are critical not only to successful establishment of RFBs and long-term maintenance and function, but also to the ability to reenroll riparian forest buffers and to public, landowner and farmer perception of the desirability of RFBs and the efficacy of CREP. Some states have successfully demonstrated the value of using partners to conduct outreach and deliver programs to farmers where state or federal staffing is inadequate.

Next steps include:

- Increase staffing and outreach as needed. This was a key component to many states requests to FSA for some of the \$5,000,000 in funding. In addition, FSA has provided funding to some states to hire more foresters and has provided \$180,000 in grant funding to help all six states with outreach materials, webinars, a CREP/RFB forum, outreach to people with expiring CRP contracts, etc. Conduct staffing needs assessments as needed and work with state and federal leadership to ensure sufficient staffing and outreach resources.
- FSA and NRCS work together to resolve CREP technical assistance deliver issues, develop goals and work plans to improve turn-around times and increase overall performance—may include NRCS cooperative agreements or FSA direct assistance. Increase site visits, status reviews and compliance checks by agency staff, particularly NRCS, and partners. Staff must work more closely with landowners to ensure maintenance is conducted to control invasive species, avoid damage from pests, and ensure long-term success of tree plantings.
- Once programs are updated, implement an interagency, multi-partner, coordinated RFB outreach strategy, including a kickoff event with Governor and/or high ranking USDA official.
- Interagency training is a high priority to increase teamwork at the local level, to provide education on the importance of RFBs, and to provide consistent understanding at all levels of reforms, such as increased incentives and new/revised policies.
- Provide mechanisms to extend the CREP establishment period beyond 2 years so that states may provide assistance to farmers for maintenance and improved survival.

**5. Retention/Reenrollment of existing riparian forest buffers must be a high priority**

Maryland and Pennsylvania are two of the oldest, most successful, and largest CREPs in the nation. In the next 5 years, in Maryland alone, the CRP contracts on over 12,600 acres of forested riparian buffers will expire. These buffers need to be reenrolled to prevent slippage in meeting water quality goals.

Next steps include:

- Conduct an outreach campaign to farmers up for reenrollment in the next five years
- Agencies, technical service providers and NGO partners prioritize working with willing landowners to resolve any compliance issues that would prevent reenrollment.
- Provide outreach materials and support that addresses the concerns of aging farmers and landowners, including information on estate issues and hardship situations.
- Provide greater flexibility to reenroll grass filter strips that have naturally succeeded into woody vegetation to reenroll in wildlife habitat buffers or riparian forest buffers.

## **Appendices:**

A-G State Task Force Summaries prepared for the Chesapeake Bay Executive Council

A. Chesapeake Bay Riparian Forest Buffer Initiative Summary - Key Recommendations for Leadership

B. Summary: Commonwealth of Virginia

C. Summary: Commonwealth of Pennsylvania

D. Summary: State of New York

E. Summary: State of West Virginia

F. Summary: State of Maryland

G. Summary: State of Delaware

H. Chesapeake Executive Council Resolution adopted July 23, 2015

I. Buffering the Bay – Status Report prepared for the Chesapeake Bay Program Management Board



## **A. Chesapeake Bay Riparian Forest Buffer Initiative**

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Restoring riparian forest buffers (RFBs) along streams are one of the most cost effective methods of reducing nonpoint source pollution loading to the Chesapeake Bay. State Watershed Improvement Plans to implement the Chesapeake Bay TMDL rely heavily on RFBs to accomplish water quality goals on agricultural lands. Without aggressive efforts to restore riparian forest buffers, states will need to find other (often more costly) strategies to reduce nearly 3.5 million pounds of N and over 157,000 pounds of P. In addition, Conservation Reserve Enhancement Programs (CREP) contracts on over 37,000 acres will expire by 2018, acres that need to be retained.

Once the national model for RFB establishment, RFB enrollments in the Chesapeake Bay watershed have declined dramatically in recent years and are not on pace to achieve state WIP goals. While the funding needed to accomplish RFB goals is largely available through State/USDA CREP programs (over \$500 million has already been invested in CREPs to date), success continues to be restrained by issues related to agency leadership and coordination, incentives, lack of program flexibility, and delivery of technical assistance and outreach to farmers/farm landowners.

### **The Riparian Forest Buffer Initiative**

A watershed-wide effort to reinvigorate RFB programs was convened last summer by USDA Under Secretaries Scuse and Bonnie including an FSA commitment of \$5 million for enhancing CREP enrollment in 2015. Task Forces were convened in each of the Chesapeake Bay states to identify barriers to enrollment/reenrollment and put forth recommendations to address the steep drop off in RFB restoration. Dozens of meetings between September 2014 and February 2015 brought together multiple stakeholders and partner agencies in each state, supported by the Alliance for the Chesapeake Bay. Recommended actions must be incorporated into the workplan of the Riparian Forest Buffer Management Strategy by October of 2015 as called for by the 2014 Chesapeake Watershed Agreement.

### **Key Recommendations for USDA and State Leadership**

While the RFB Initiative has drawn to a close, the important work of implementing these recommendations is just beginning. All six state task forces emphasized that success in meeting RFB goals, will require the strong commitment of federal, state and local leadership. Critically important actions that leadership can take now to support this effort:

- Evaluate WIP targets and set annual riparian forest buffer performance goals within each agency down to the local level to accelerate RFB implementation.
- Champion timely completion and approval of Conservation Reserve Enhancement Program (CREP) amendments to increase incentives, provide greater program flexibility, improve outreach, and, where needed (VA, WV), increase total acreage allowed to enroll to meet WIP goals. Top state leadership needs to reach out to USDA Secretary Vilsack and OMB in support of these efforts.
- NRCS and FSA work together to resolve CREP technical assistance delivery issues and develop goals and workplans to improve turn-around times and increase overall performance. The existing relationship between NRCS (technical assistance lead) and FSA (CREP program lead) in terms of technical assistance delivery and funding can be a barrier to effective program delivery. Ensure that capability and a performance structure is in place to prioritize CREP program delivery and/or explore options for state or NGO delivery.

- Increase cooperation between the leadership of state water quality agencies and CREP partner leadership to more directly engage WIP managers in supporting and accelerating RFB program implementation.

## **B. Summary: Commonwealth of Virginia**

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Over the past year in Virginia, state and federal agencies, agricultural groups, environmental organizations and other stakeholders have developed a set of strategies to accelerate the implementation of programs that establish riparian forest buffers. These buffers are not only important for cost-effectively meeting water quality goals, they are also vital parts of the ecosystem – restoring the health of freshwater fisheries, reducing downstream flooding, enhancing wildlife habitat, storing carbon, and cleaning the air.

Currently, Virginia relies heavily on riparian forest buffers as a best management practice for meeting its nitrogen reduction goals; fully 9% of these reductions are expected to result from the use of these buffers.<sup>3</sup> The state’s Watershed Implementation Plan (WIP) proposes the creation of 6,215 acres of new riparian forest each year for a total of 80,820 acres by 2025 – a significant acceleration of current efforts. From 2012 to 2014, Virginia’s annual accomplishments averaged only 250 acres/year through the USDA Farm Service Agency’s Conservation Reserve Enhancement Program (CREP).<sup>4</sup>

Without an aggressive effort to increase riparian forest buffers, the Commonwealth of Virginia will need to find other (and often more costly) strategies to reduce over 1 million pounds of nitrogen, nearly 100,000 pounds of phosphorus, and 50,000 tons of sediment to reach their 2025 total pollutant reduction goals.<sup>5</sup> Virginia also has 8,500 acres of riparian forest buffers in 10 to 15 year CREP contracts, set to expire by 2018.<sup>6</sup> Unless re-enrolled or otherwise retained, losing these acres will further undermine Virginia’s ability to achieve its water quality goals.

### **Recommendations/Strategies**

To address these challenges, the Virginia State Task Force developed several “high priority” strategies that require a mix of federal and state policy flexibility, new funding and enhanced partnerships.<sup>7</sup>

1. Amend CREP Agreement to provide additional state funding to ensure that farmers can install riparian forest buffers and stream exclusion fencing at no cost and better integrate state and federal cost share programs. Expand the number of acres in the state eligible for CREP.
2. Make the riparian forest buffer practice more attractive to farmers by providing additional “incentives.” Amend CREP Agreement to raise the “rental payment incentive” from 120% to 150%.

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<sup>3</sup> Chesapeake Bay Program Scenario Builder and Modeling Teams. “Determining the Relative Reductions of BMPs in the Phase II WIPs. March 13, 2013.

<sup>4</sup> Number cited for CP-22 practice only

<sup>5</sup> Chesapeake Bay Program Modeling Team. “Estimated additional lbs. of nutrients and sediment that would need to be offset due to slower progress toward Riparian Forest Buffer WIP goals.” November 13, 2014.

<sup>6</sup> USDA Farm Service Agency. “CRP CP22 Enrollment Activity in Chesapeake Bay Watershed, FY 2012-FY 2015.” December 31, 2014.

<sup>7</sup> The complete report can be found at [www.allianceforthebay.org/riparian-forest-initiative](http://www.allianceforthebay.org/riparian-forest-initiative).

3. Provide greater flexibility in state and local programs to best address local conditions and costs. This includes delegating authority to CREP committees to “waive” some caps on cost-share payments.
4. Provide high-level federal and state leadership to inspire local staff and partners to implement riparian forest buffers. A history of CREP in the Chesapeake shows that forest buffers are implemented where local offices “champion” their use (75% are in just 25% of the counties).
5. Expand partnerships, increase training for conservation professionals, and provide outreach resources needed to increase awareness of riparian forest buffers and state and federal programs and to market the practice in the farming community.

## C. Summary: Commonwealth of Pennsylvania

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Over the past year in Pennsylvania, state and federal agencies, agricultural groups, environmental organizations and other stakeholders have developed a set of strategies to accelerate the implementation of programs that establish riparian forest buffers. These buffers are not only important for cost-effectively meeting water quality goals, they are also vital parts of the ecosystem – restoring the health of freshwater fisheries, reducing downstream flooding, enhancing wildlife habitat, storing carbon, and cleaning the air.

Currently, Pennsylvania relies heavily on riparian forest buffers as a best management practice for meeting its nitrogen reduction goals; fully 13% of these reductions are expected to result from the use of these buffers.<sup>8</sup> The state’s Watershed Implementation Plan (WIP) proposes the creation of 6,895 acres of new riparian forest each year for a total of 89,630 acres by 2025 – a significant acceleration of current efforts. From 2012 to 2014, Pennsylvania’s annual accomplishments averaged only 271 acres per year through the USDA Farm Service Agency’s Conservation Reserve Enhancement Program (CREP).<sup>9</sup>

Without an aggressive effort to increase riparian forest buffers, the Commonwealth of Pennsylvania will need to find other (and often more costly) strategies to reduce over 2 million pounds of nitrogen, nearly 40,000 pounds of phosphorus, and 30,000 tons of sediment to reach their 2025 total pollutant reduction goals.<sup>10</sup> Pennsylvania also has 7,400 acres of riparian forest buffers in 10 to 15 year CREP contracts, set to expire by 2018.<sup>11</sup> Unless re-enrolled or otherwise retained, losing these acres will further undermine Virginia’s ability to achieve its water quality goals.

### Recommendations/Strategies

To address these challenges, the Pennsylvania State Task Force developed several priority strategies that require a mix of federal and state policy flexibility, new funding and enhanced partnerships.<sup>12</sup>

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<sup>8</sup> Chesapeake Bay Program Scenario Builder and Modeling Teams. “Determining the Relative Reductions of BMPs in the Phase II WIPs. March 13, 2013.

<sup>9</sup> Number cited for CP-22 practice only

<sup>10</sup> Chesapeake Bay Program Modeling Team. “Estimated additional lbs. of nutrients and sediment that would need to be offset due to slower progress toward Riparian Forest Buffer WIP goals.” November 13, 2014.

<sup>11</sup> USDA Farm Service Agency. “CRP CP22 Enrollment Activity in Chesapeake Bay Watershed, FY 2012-FY 2015.” December 31, 2014.

<sup>12</sup> The complete report can be found at [www.allianceforthebay.org/riparian-forest-initiative](http://www.allianceforthebay.org/riparian-forest-initiative).

1. Expand the provision of technical assistance and on-farm site visits throughout the life of RFB contracts through expanded federal and state staffing and partnerships with NGOs.
2. Increase outreach to farmers by creating regional specialists to service high priority areas.
3. Continue to provide state cost-share assistance for riparian forest buffers to leverage federal investments and create incentive for riparian forest buffers as stream protection practices.
4. Expand partnerships, increase training for conservation professionals, and provide outreach resources needed to increase awareness of riparian forest buffers and state and federal programs and to market the practice in the farming community.
5. Provide high-level federal and state leadership to inspire local staff and partners to implement riparian forest buffers. A history of CREP in the Chesapeake shows that forest buffers are implemented where local offices “champion” their use (75% of riparian forest buffers are in just 25% of the counties).
6. Work with State partners to review current levels of staffing to ensure that outreach and technical assistance efforts are successful.

## **D. Summary: State of New York**

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Over the past year in New York, state and federal agencies, agricultural groups, environmental organizations and other stakeholders have developed a set of strategies to accelerate the implementation of programs that establish riparian forest buffers. These buffers are not only important for cost-effectively meeting water quality goals, they are also vital parts of the ecosystem – restoring the health of freshwater fisheries, reducing downstream flooding, enhancing wildlife habitat, storing carbon, and cleaning the air.

Currently, New York expects riparian forest buffers to generate 5% of the state’s nitrogen reduction goals.<sup>13</sup> The state’s Watershed Implementation Plan (WIP) proposes the creation of 475 acres per year for a total of 6,180 acres by 2025 – a significant acceleration of current efforts. Between 2012 and 2014, New York’s efforts averaged 20 acres per year through the USDA Farm Service Agency’s Conservation Reserve Enhancement Program (CREP).<sup>14</sup>

Without an aggressive effort to increase these buffers, New York will need to find other (and often more costly) strategies to reduce 41,000 pounds of nitrogen, nearly 2,000 pounds of phosphorus, and 900 tons of sediment to meet their total pollutant reduction goals for 2025.<sup>15</sup> New York also has 5,000 acres of riparian forest buffers in 10 to 15 year CREP contracts, set to expire by 2018.<sup>16</sup> Unless re-

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<sup>13</sup> Chesapeake Bay Program Scenario Builder and Modeling Teams. “Determining the Relative Reductions of BMPs in the Phase II WIPs. March 13, 2013.

<sup>14</sup> Number cited for CP-22 practice only

<sup>15</sup> Chesapeake Bay Program Modeling Team. “Estimated additional lbs. of nutrients and sediment that would need to be offset due to slower progress toward Riparian Forest Buffer WIP goals.” November 13, 2014.

<sup>16</sup> USDA Farm Service Agency. “CRP CP22 Enrollment Activity in Chesapeake Bay Watershed, FY 2012-FY 2015.” December 31, 2014.

enrolled or otherwise retained, losing these acres will further undermine New York’s ability to achieve its water quality goals.

### **Recommendations/Strategies**

To address these challenges, the New York State Task Force developed several priority strategies that require a mix of federal and state policy flexibility, new funding and enhanced partnerships.<sup>17</sup>

1. Amend the State CREP Agreement to make the riparian forest buffer practice more attractive to cropland farmers by providing “financial incentives.” The State of New York is proposing a new \$200 per acre incentive payment for cropland farmers that implement forest buffers. The Task Force also recommends raising the “rental payment incentive” from 145% to 200%.
2. Expand partnerships, increase training for conservation professionals, and provide outreach resources needed to increase awareness of riparian forest buffers and state and federal programs and to market the practice in the farming community.
3. Ensure program success through enhanced financial and technical assistance to farmers. New York is requesting increased financial assistance and policy flexibility that will help farmers handle challenges to successfully establishing forest buffers.
4. Provide greater flexibility in state and local programs to best address local conditions and costs. This includes delegating authority to CREP committees to “waive” some caps on cost-share payments.
5. Provide high-level federal and state leadership to inspire local staff and partners to implement riparian forest buffers. A history of CREP in the Chesapeake shows that forest buffers are implemented where local offices “champion” their use (75% of Riparian forest buffers are in just 25% of the counties).
6. Provide funding for state partners to meet identified levels of staffing to ensure outreach and assistance efforts are successful.

## **E. Summary: State of West Virginia**

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Over the past year in West Virginia, state and federal agencies, agricultural groups, environmental organizations and other stakeholders have developed a set of strategies to accelerate the implementation of programs that establish riparian forest buffers. These buffers are not only important for cost-effectively meeting water quality goals, they are also vital parts of the ecosystem – restoring the health of freshwater fisheries, reducing downstream flooding, enhancing wildlife habitat, storing carbon, and cleaning the air.

Currently, West Virginia expects riparian forest buffers to generate 5% of the state’s nitrogen reduction goals.<sup>18</sup> The state’s Watershed Implementation Plan (WIP) proposes the creation of 250 acres per year for a total of 3,250 acres – a significant acceleration of current efforts. Between 2012

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<sup>17</sup> The complete report can be found at [www.allianceforthebay.org/riparian-forest-initiative](http://www.allianceforthebay.org/riparian-forest-initiative).

<sup>18</sup> Chesapeake Bay Program Scenario Builder and Modeling Teams. “Determining the Relative Reductions of BMPs in the Phase II WIPs. March 13, 2013.

and 2014, state partners averaged 119 acres per year through the USDA Farm Service Agency's Conservation Reserve Enhancement Program (CREP).<sup>19</sup>

Without an aggressive effort to increase riparian forest buffers, the State of West Virginia will need to find other (and often more costly) strategies to reduce 45,000 pounds of nitrogen, nearly 2,000 pounds of phosphorus, and 1,400 tons of sediment to meet their total pollutant reduction goals for 2025.<sup>20</sup> West Virginia also has 5,000 acres of riparian forest buffers in 10 to 15 year CREP contracts, set to expire by 2018.<sup>21</sup> Unless re-enrolled or otherwise retained, losing these acres will further undermine West Virginia's ability to achieve its water quality goals.

### **Recommendations/Strategies**

To address these challenges, the West Virginia State Task Force developed several priority strategies that require a mix of federal and state policy flexibility, new funding and enhanced partnerships.<sup>22</sup>

1. Amend CREP Agreement to add Monroe County to the state's CREP funding area to ensure that farmers in all of the state's portion of the Chesapeake Bay watershed have access to funding and assistance. The State is also proposing to expand the number of acres eligible for CREP.
2. Expand partnerships, increase training for conservation professionals, and provide outreach resources needed to increase awareness of riparian forest buffers and state and federal programs and to market the practice in the farming community.
3. Ensure program success through enhanced financial and technical assistance to farmers. Increase financial assistance and policy flexibility that will help farmers handle challenges to successfully establishing their forest buffer. This includes increasing funding for maintenance.
4. Provide greater flexibility to state and local programs to best address local conditions and costs. This includes delegating authority to CREP committees to "waive" caps on cost-share payments.
5. Expand the use of NGO partnerships to provide turnkey RFB implementation and maintenance.
6. Provide high-level federal and state leadership to inspire local staff and partners to implement RFBs. A history of CREP in the Chesapeake shows that forest buffers are implemented where local offices "champion" their use (75% of riparian forest buffers are in just 25% of the counties).
7. Provide funding to meet identified levels of staffing to ensure outreach and assistance efforts are successful.

## **F. Summary: State of Maryland Summary**

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<sup>19</sup> Number cited for CP-22 practice only

<sup>20</sup> Chesapeake Bay Program Modeling Team. "Estimated additional lbs. of nutrients and sediment that would need to be offset due to slower progress toward Riparian Forest Buffer WIP goals." November 13, 2014.

<sup>21</sup> USDA Farm Service Agency. "CRP CP22 Enrollment Activity in Chesapeake Bay Watershed, FY 2012-FY 2015." December 31, 2014.

<sup>22</sup> The complete report can be found at [www.allianceforthebay.org/riparian-forest-initiative](http://www.allianceforthebay.org/riparian-forest-initiative).

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Over the past year in Maryland, state and federal agencies, agricultural groups, environmental organizations and other stakeholders have developed a set of strategies to accelerate the implementation of programs that establish riparian forest buffers. These buffers are not only important for cost-effectively meeting water quality goals, they are also vital parts of the ecosystem – restoring the health of freshwater fisheries, reducing downstream flooding, enhancing wildlife habitat, storing carbon, and cleaning the air.

Currently, Maryland expects riparian forest buffers to generate 5% of the state’s nitrogen reduction goals.<sup>23</sup> The state’s Watershed Implementation Plan (WIP) proposes the creation of 90 acres per year for a total of 1,190 acres. Currently Maryland is meeting its annual target. If this rate cannot be sustained, the state would need to find other (and often more costly) strategies to reduce over 29,000 pounds of nitrogen and 7,000 tons of sediment to meet their total pollutant reduction goals for 2025.<sup>24</sup>

Maryland also has 11,250 acres of riparian forest buffers in 10 to 15 year CREP contracts, set to expire by 2018.<sup>25</sup> Unless re-enrolled or otherwise retained, losing these acres will further undermine Maryland’s ability to achieve its water quality goals.

### **Recommendations/Strategies**

To address these challenges, the Maryland State Task Force developed several priority strategies that require a mix of federal and state policy flexibility, new funding and enhanced partnerships.<sup>26</sup>

1. Implement a multi-stakeholder outreach campaign to increase farmer awareness of state and federal programs.
2. Amend CREP Agreement to enhance financial and technical assistance to farmers. Specifically, increase financial assistance and policy flexibility that helps farmers successfully establish forest buffers. Create a state-run funding pool to contract and better implement buffer maintenance.
3. Provide funding and expand partnerships to increase training for conservation professionals and provide resources needed to market the practice in the farming community.
4. Provide high-level federal and state leadership to inspire local staff and partners to implement riparian forest buffers. A history of CREP in the Chesapeake shows that forest buffers are implemented where local offices “champion” their use (75% of riparian forest buffers are in just 25% of the counties).
5. Work with state partners to review current levels of staffing to ensure outreach and technical assistance efforts are successful.

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<sup>23</sup> Chesapeake Bay Program Scenario Builder and Modeling Teams. “Determining the Relative Reductions of BMPs in the Phase II WIPs. March 13, 2013.

<sup>24</sup> Chesapeake Bay Program Modeling Team. “Estimated additional lbs. of nutrients and sediment that would need to be offset due to slower progress toward Riparian Forest Buffer WIP goals.” November 13, 2014.

<sup>25</sup> USDA Farm Service Agency. “CRP CP22 Enrollment Activity in Chesapeake Bay Watershed, FY 2012-FY 2015.” December 31, 2014.

<sup>26</sup> The complete report can be found at [www.allianceforthebay.org/riparian-forest-initiative](http://www.allianceforthebay.org/riparian-forest-initiative).



6. Provide greater flexibility to state and local programs to address local conditions and costs: delegate authority to CREP committees to “waive” caps on cost-share payments and revise policies to allow conversion of grass buffer practices to forest buffers where natural regeneration of trees occurs.
7. Conduct an analysis to determine if financial incentives are competitive enough on cropland.

## **G. Summary: State of Delaware**

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Over the past year in Delaware, state and federal agencies, agricultural groups, environmental organizations and other stakeholders have developed a set of strategies to accelerate the implementation of programs that establish riparian forest buffers. These buffers are not only important for cost-effectively meeting water quality goals, they are also vital parts of the ecosystem – restoring the health of freshwater fisheries, reducing downstream flooding, enhancing wildlife habitat, storing carbon, and cleaning the air.

Currently, Delaware relies heavily on riparian forest buffers as a best management practice for meeting its nitrogen reduction goals; fully 10% of these reductions are expected to result from the use of these buffers.<sup>27</sup> The state’s Watershed Implementation Plan (WIP) proposes the creation of 370 new acres per year for a total of 4,790 acres by 2025.

If the state is unable to sustain this rate, other (and often more costly) strategies would be needed to reduce over 125,000 pounds of nitrogen, 6,000 pounds of phosphorus and 5,000 tons of sediment to meet their total pollutant reduction goals for 2025.<sup>28</sup> Delaware only has 64 acres of riparian forest buffers in 10 to 15 year CREP contracts that are set to expire by 2018.<sup>29</sup> To sustain forward progress, these acres should be re-enrolled or otherwise retained.

### **Recommendations/Strategies**

To address these challenges, the Delaware State Task Force developed several priority strategies that require a mix of federal and state policy flexibility, new funding and enhanced partnerships.<sup>30</sup>

1. Amend the state CREP Agreement to make the riparian forest buffer practice more attractive to cropland farmers by providing more financial incentives. Delaware is proposing a new \$200 per acre bonus payment for farmers that implement a forest buffer through CREP.
2. Work with state legislature to ensure stable, long term matching funds for CREP funding.
3. Increase farmer awareness of state and federal programs through a multi-stakeholder outreach campaign.

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<sup>27</sup> Chesapeake Bay Program Scenario Builder and Modeling Teams. “Determining the Relative Reductions of BMPs in the Phase II WIPs. March 13, 2013.

<sup>28</sup> Chesapeake Bay Program Modeling Team. “Estimated additional lbs. of nutrients and sediment that would need to be offset due to slower progress toward Riparian Forest Buffer WIP goals.” November 13, 2014.

<sup>29</sup> USDA Farm Service Agency. “CRP CP22 Enrollment Activity in Chesapeake Bay Watershed, FY 2012-FY 2015.” December 31, 2014.

<sup>30</sup> The complete report can be found at [www.allianceforthebay.org/riparian-forest-initiative](http://www.allianceforthebay.org/riparian-forest-initiative).

4. Ensure program success through enhanced financial and technical assistance to farmers. Delaware is requesting increased financial assistance that will help farmers handle challenges to successfully establishing their forest buffer. This includes developing new standards for implementing riparian forest buffers along tax ditches.
5. Provide high-level federal and state leadership to inspire local staff and partners to implement RFBs. A history of CREP in the Chesapeake shows that forest buffers are implemented where local offices “champion” their use (75% of riparian forest buffers are in just 25% of the counties).

## H.



### Chesapeake Executive Council Resolution- 2015 #1\*

#### ***Endorsing State Task Force Recommendations for Increasing Riparian Forest Buffers to Meet Chesapeake Bay Goals***

Whereas, the Chesapeake Bay Program, an international model for ecosystem and watershed restoration and management, relies on science, innovation, strong partnerships, and shared leadership for success; and

Whereas, the United States Department of Agriculture (USDA) is an important and significant federal partner; and

Whereas, the goal of restoring and sustaining healthy streams in the Chesapeake Bay watershed requires action on agricultural lands; and

Whereas, past Chesapeake Bay agreements have recognized that riparian forest buffers are essential for restoring water quality and habitat, and the 2014 *Chesapeake Bay Watershed Agreement* endorses new goals and outcomes; and

Whereas, although past accomplishments by the Chesapeake Bay states are noteworthy, progress on riparian forest buffer establishment on agricultural lands has not kept pace with the milestones set forth in the Watershed Agreement or State Watershed Implementation Plans for the Bay TMDL; and

Whereas, over the last year, a USDA-led, Chesapeake Riparian Forest Buffer Initiative identified ways to improve the restoration and development of riparian forest buffers and foster healthy streams; and the USDA's Farm Service Agency, Natural Resources Conservation Service, and Forest Service joined state leadership to address immediate needs and identify priorities for future practice delivery and success;

Now, therefore be it resolved that:

We endorse the recommendations provided by the State Riparian Forest Buffer Task Force. We commit to work together to align our efforts and harness available resources to increase the miles of riparian forest buffers on agricultural lands in the Chesapeake Bay watershed.

Be it further resolved, that in recognition of this, the Chesapeake Bay Executive Council will take the following actions:

- The State Task Force Reports will be conveyed to USDA and be part of the *Chesapeake Bay Watershed Agreement* Riparian Forest Buffer Management Strategy workplan where resources and responsibility to achieve those actions will be identified;
- Multi-year strategies for aligning and securing needed resources to reach riparian forest buffer goals will be developed and will include analysis of staffing and financial needs;

- We will support implementation of USDA conservation programs that develop, restore or maintain effective riparian forest buffers in the Chesapeake Bay watershed;
- A robust outreach initiative will be implemented to promote riparian forest buffers within the agricultural community; and
- Technical assistance will be enhanced to ensure that buffers are planned, implemented and maintained successfully;

And be it finally resolved, that we commend the work completed by the USDA and the States through the Initiative and Task Force process and express our thanks to all the stakeholders who provided their insight and recommendations.

*\*adopted by the Chesapeake Executive Council on July 23, 2015*

## I.

### Buffering the Bay:

#### *A Report of the Forestry Work Group on the Progress and Challenges to Restoring Riparian Forest Buffers to the Chesapeake Bay Watershed*

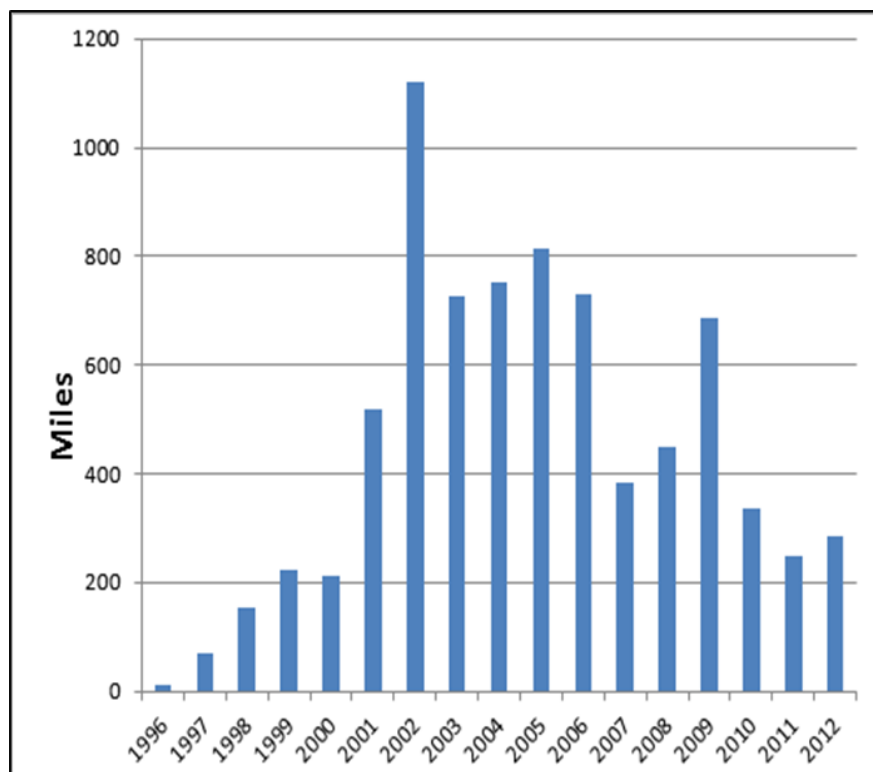
*December 2013*

#### HISTORY OF THE BUFFER GOAL

Of the many best management practices (BMPs) used to improve the quality of waters and habitats in the Chesapeake Bay watershed, the single best BMP may be the restoration of riparian forest buffers. Riparian forest buffers provide critical barriers between polluting landscapes and receiving waterways using relatively little land. Forest buffers reduce the adverse effect of excessive nitrogen (N), phosphorus (P), and suspended sediment inputs. Per acre, they likely provide more benefit than any other BMP, especially when considering the added high value habitat of the natural land cover at the critical juncture of land and water. Forest buffers have been part of the fabric of Bay restoration since 1994 when the Executive Council (EC) first called upon the Chesapeake Bay Program (CBP) to develop a policy to *enhance riparian stewardship and efforts to conserve and restore riparian forest buffers* (Directive 94-1).

Chesapeake Bay Program partners have shown extensive leadership in implementing riparian forest buffer incentive programs. Bay partners have promoted this practice while dedicating countless hours in providing education, landowner outreach, technical assistance, and contract administration. In the most productive 5 years (2002-2007), the Bay States restored over 4000 miles of riparian forest buffer --- an average of 830 miles/year.

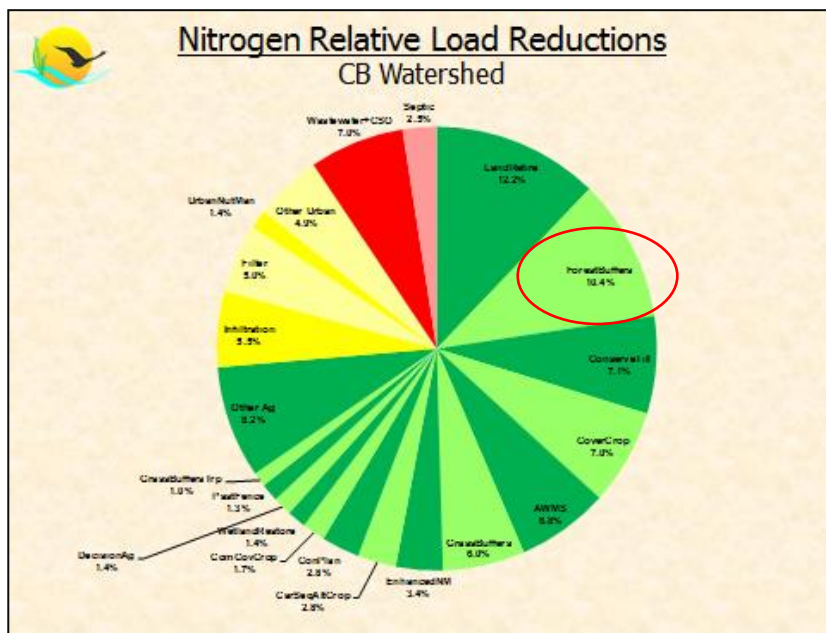
The current goal for restoring riparian forest buffers was established in 2003--- to have a minimum of 70% of the riparian area forested. This goal was also adopted in the [2007 Forest Conservation Directive](#). To achieve this goal, existing forest buffers must be preserved (see "Conservation" section) and additional forest buffers must be restored by planting trees. Based on an estimate of 181,440 miles of streams in the watershed, and 55%



**Figure 2. Percent Nitrogen load reductions anticipated in Watershed Implementation Plans.**

of the land being forested, an annual target of 900 new miles of riparian forest buffer is needed every year through 2036 to reach the 70% threshold. In recent years (2011-2013), progress has slowed significantly-- averaging only 244 miles per year.

Currently, the number of new forest buffers being restored is at the lowest point in 14 years. This is despite the fact that forest buffers are one of the most cost-effective practices for improving water quality in the Bay, particularly when considering their longevity and minimal maintenance needs after establishment. Some assessments have averaged the investment for this practice only out to 15 years (life of contract), but 88% of landowners surveyed in Pennsylvania intended to keep their forested buffers in perpetuity (Cooper 2005)<sup>1</sup>. Some reasons for the lackluster progress of late are mentioned in this document.



State	CREP acreage cap	Type of cap: state or CB only	CREP acres enrolled under this cap (June 2013)	Acres left that are available under this cap	New acres FB needed 2012-2025 for WIP	
DE	10,000	state	5,540	4,460	4790	
MD	100,000	state	67,660		32,340	1190
NY	40,000	state	10,970		29,030	6180
PA	219,746	CB	125,110		94,636	89,630
VA	25,000	CB	14,800		10,200	80,820
WV	9,160	state	5,690		3,470	3250

**Table 1. Acreage caps for all practices in CREP.**

## ROLE OF BUFFERS IN THE CHESAPEAKE BAY TMDL

## FOREST

Because the CBP and its partners could not voluntarily meet water-quality goals for N, P, and suspended sediment in the Chesapeake Bay by 2010, the US Environmental Protection Agency established a Total Maximum Daily Load (TMDL) or limit for these pollutants entering the main stem of the Chesapeake Bay. Bay states are depending on restoring riparian forest buffers to meet the TMDL mandate, especially to reduce nitrogen. In an analysis done by the Chesapeake Bay Program Office, the riparian forest buffer practice is second only to land retirement in BMP's most counted-on for nitrogen reduction according to the states' Watershed Implementation Plans (WIPs) (Fig. 2). This analysis includes all implemented and planned BMP's between years 1985-2025.

According to the WIPs, the projected need is for an additional 185,000 acres of riparian forest buffers in the next 13 years (average 14,200 acres/year or roughly 1,400 miles/year) -- this would be an increase from 2012 implementation of 600% annually until 2025. This scale of increase in riparian forest buffer restoration would be beneficial in reaching other Chesapeake Bay Watershed goals such as brook trout habitat, stream restoration, and healthy watersheds.

### Importance of CREP

Riparian forest buffers cost money to establish, but unlike some other restoration practices, federal cost-share funding is available to defray expenses. The vast majority of riparian forest buffers that are restored in the Chesapeake Bay Watershed are funded through the Conservation Reserve Enhancement Program (CREP--see inset). There is no established funding limit for CREP, and the acreage cap has not been reached in any Bay state (Table 1). For this reason, CREP advocates say CREP is under-subscribed and "money is being left on the table" when it could be used to restore buffers. States that will exceed their acreage caps for CREP should be working to extend it.

Riparian forest buffer plantings can also be cost-shared using the USDA Environmental Quality Improvement Program (EQIP) funding. In the Chesapeake Bay, EQIP funding has been at an all-time high since 2009 when funding for the Chesapeake Bay Watershed Initiative (CBWI) was added to that program. CBWI was initiated in the 2008 Farm Bill to help USDA meet its overall goal to improve water quality in Chesapeake Bay. For a landowner restoring forest buffers, EQIP is usually less preferred because the landowner receives significantly more compensation through CREP. Very few riparian forest buffers have been established with EQIP/CBWI funding: in three years (2009-2011), only 23 acres of riparian forest buffers were restored through the program. During that period \$138 million was spent on conservation practices in the watershed using CBWI.<sup>2</sup>

#### CREP

The Conservation Reserve Enhancement Program (CREP) is a land retirement program of the U.S. Department of Agriculture (USDA) administered by the Farm Service Agency (FSA). CREP is designed to remove marginal agricultural land from production in order to help protect water and soil.

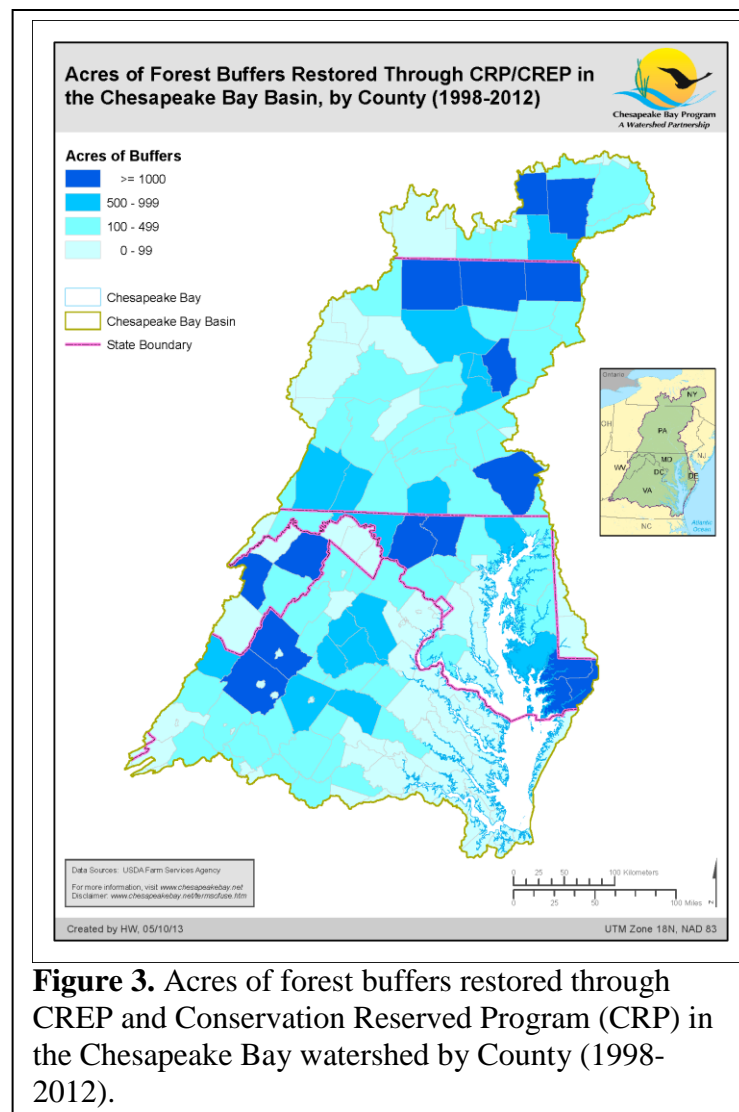
CREP debuted in Maryland in 1998, with other states quick to follow. Riparian forest buffer restoration is a common CREP practice, known as CP22. Even though this is an FSA program, the National Resources Conservation Service (NRCS) is the USDA agency that provides the technical assistance for CREP—or provides funding to a partner to provide it. Although CREP can only cover up to 50% of a project's installation costs, State partners provide matching financial assistance -- such that often 90% or more of the costs are provided through public funds. Further benefit comes to the landowner via an initial incentive payment and annual "land rental" payments for the life of the contract, which is a 10-15 year commitment.

FSA reports that 63,000 acres of riparian forest buffers are currently under CREP contract in the Chesapeake Bay watershed.

### Establishment and Maintenance



Restoring riparian forest buffers to agriculture and urban landscapes is a formidable task. Many of the buffers restored in the early years (1998-2003) encountered problems that became part of the learning process. Lack of proper site preparation and maintenance contributed to the failure of many plantings. Specific problems were attributed to competing vegetation, vole damage, lawn mowing, and deer browse, among other issues. Problem sites were often replanted, but these initial failures left many landowners, producers, and technical assistance providers discouraged.



**Figure 3.** Acres of forest buffers restored through CREP and Conservation Reserved Program (CRP) in the Chesapeake Bay watershed by County (1998-2012).

Lessons were learned to address these problems. A proven method -- herbicide applications and proper use of tree tubes --has greatly improved restoration success. One study cites a 6-fold increase in survival coupled with a 2-fold increase in tree growth when this method is followed (Sweeney 2002). More attention to this method is needed along with continued technical assistance and post-planting care until the riparian forest is considered established (~3-8 years). In 2008, USDA approved a first-in-the-nation cost-share on post-planting care for buffers in Pennsylvania. A more regimented post-planting monitoring program would help minimize problems with buffer planting establishment.

A good example of monitoring comes from Virginia where the Department of Forestry works closely with NRCS to conduct detailed annual survival on every CREP forest buffer planting. Each project site receives multiple visits from a professional forester until it is deemed established.

## Outreach and Technical Assistance

Each new riparian forest buffer represents a considerable amount of promotion and time invested in landowner relations by technical service providers. Initial outreach is conducted to interest landowners and can be done through direct mailings, paid advertising, signs, toll-free call-in centers, and earned media, to name a few. Outreach is especially needed for forest buffers— to educate the landowner of their importance and the incentives available for restoring them. Often the most effective type of outreach is direct contact through a trusted farm technical assistance professional.

Technical assistance helps ensure that conservation practices are correctly installed and a landowner's questions are answered. NRCS administers the technical assistance of CREP and other farm bill programs (like CBWI and EQIP) and can engage in cooperative agreements with partners

who also provide technical assistance. The absence of sufficient technical assistance can be a bottleneck for not getting more forest buffers on the ground.

Some counties in the watershed have clearly been exemplary at prioritizing the forest buffer practice through CREP (Fig 3). In fact, 75% of the riparian forest buffers in the watershed occur in just 25% of the counties. This is, in part, because of the outreach and technical assistance provided in that county, and in some cases, a ranking approach that favors forest buffer restoration.

## **NEW CHALLENGES**

### **CREP Availability**

Continued CREP funding is in jeopardy and needs to be secured through reauthorization of a new Farm Bill. While the new Farm Bill continues to be debated, it is critical that CREP remain available. From October 2012 through April 2013, CREP was closed to new sign-ups while other cost-shared agricultural restoration programs stayed open. As a result, the number of new riparian forest buffers restored will be further reduced for 2013 and 2014. (In 2013, about 202 miles were planted, but many of the sign-ups for these miles happened prior to October 2012). In



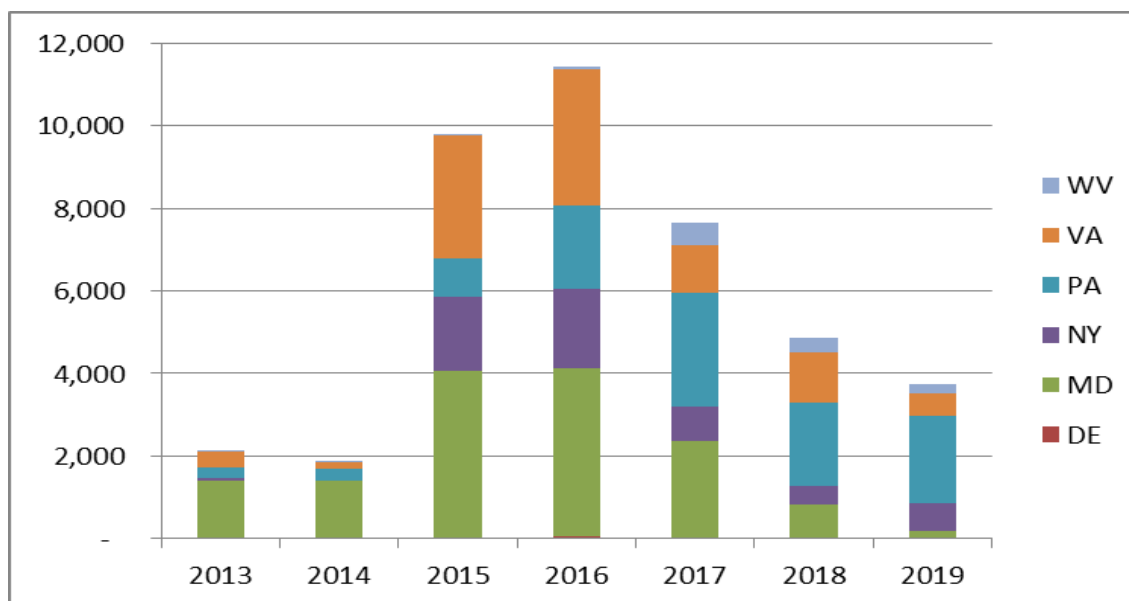
October 2013, CREP closed again to new sign-ups and remains closed as of this writing. Such interruptions in program delivery greatly increase skepticism about program viability, a particular concern for long-term contract programs like CREP. Further uncertainty persists about the future of CREP and the riparian forest buffer practice because a new Farm Bill may decrease current benefits.

### **Expiring Contracts**

Many CREP contracts will expire in the next few years (Fig 4). These contracts represent an enormous amount of effort and financial investment. They also represent a lot of acres that are already being counted toward the TMDL. Partners for the Chesapeake Bay need to seize the opportunity to re-enroll as many of these acres of forest buffer as possible to minimize the loss of acres and safeguard the investment. Even for a willing landowner, it may take 1-3 years to make some acres eligible for re-enrollment if stocking (tree survival) is inadequate. While the contract is still active, outreach is needed to 1) learn the landowner's intentions regarding the buffer, 2) ensure the landowner is aware of the re-enrollment opportunity and 3) encourage re-enrollment.

### **Targeting**

Water quality contributions of forest buffers vary by physiographic region, but they also vary on a more local scale depending on adjacent land use and other factors such as the amount and direction of subsurface flows. Targeting can help answer the question of where to get the greatest nutrient load reduction from an acre of riparian forest buffer restoration. This cost-effective approach could be used more widely as localized geographic analyses are conducted. At present, no additional monetary incentives are available to targeted areas where high pollution reduction is expected, but some partners have used additional outreach and TA to restore forest buffers in these places. Improved targeting in program delivery would be a worthwhile investment.



**Figure 4. Acres of CREP riparian forest buffers in the Chesapeake Bay watershed with expiring contracts (2013-2019).**

## Conservation

Even though conservation of forest buffers was called out back in the 1994 Directive, it has taken a back seat to restoration. Yet conservation is an easier, more successful, and cost-effective means toward ecosystem integrity when compared to restoration. With 55% of riparian areas forested, opportunity for further loss of existing buffers is significant. An easement program exists that pays extra (\$500/acre) for permanent retirement of the land under a CREP contract. This program is not active in most Bay states. Ideally a targeted conservation framework should be implemented that emphasizes conservation of forest buffers through various state and local laws and ordinances. For instance, Maryland has the Critical Areas Law and Forest Conservation Act and counties of Baltimore and Howard have regulations to protect buffers.

When public funding is used to protect farmland, could be a point of leverage to ensure all streams on that farm are buffered. Likewise, conservation could be targeted to places where public funding has been invested in restoration practices. . Linking permanent easement programs with forest buffer restoration benefits both programs.

## Verification

Given the ever increasing importance of accounting for restoration practices like riparian forest buffers—Bay Program partners agreed to a framework whereby tracking and reporting of practices can be expanded AND also verifiable. This framework is called Verification.

One of the first tasks under Verification for riparian forest buffers is to determine a baseline of existing buffers. Only a net gain in riparian forest buffers can be reported, so any loss of buffers needs to be tracked. Other than closer monitoring of gains and losses, an expected result of Verification guidelines will be bolstering of forest buffer conservation and education programs and increased maintenance until a planted buffer is established.

### **Learning from Pennsylvania's CREP Partnership**

There are several innovations from Pennsylvania within the CREP riparian forest buffer program that have enabled them to restore more than twice as many buffers as other Bay states. A federal-state-nonprofit partnership focuses specifically on forest buffers and provides coordination and programmatic guidance at the state level. In addition to doing countless hours of outreach and technical assistance to get more forest buffers, the partnership has improved survival by established new funding and policies around post-planting care.

So, how did they get all those acres of forest buffer? First, Pennsylvania state cost-share dollars are available as a CREP incentive only for riparian forest buffers, not grass buffers. This is an effective way to communicate to the landowner the importance the state places on the riparian forest practice. Second, some counties will improve the ranking of other conservation practices (e.g., EQIP practices) if the landowner has or agrees to put a riparian forest buffer (can use CREP for this). This is known as a tiered system of practice ranking -- the value of a forest buffer leverages other Farm Bill program funding. A voucher system is another model for incentivizing buffers. Vouchers (cash payment) are given to a landowner that, when asked, agrees to put in a riparian forest buffer. These vouchers are used to pay for the landowner's share of other conservation practices implemented on the farm. Funding for vouchers is most likely to come from state or private grants.

The Chesapeake Bay Foundation (CBF) found that 117 out of 120 Pennsylvania farmers were willing to do CREP forest buffers when additional incentive funding (i.e., a voucher) was made available to pay for other agricultural BMPs that the farmer needed. In the process, limited conservation funding is leveraged to encourage both forested buffers as well as traditional agricultural BMPs. This data is encouraging as it stands in contrast to the oft cited "low hanging fruit" argument: that the landowners willing to plant forest buffers have already been reached.

## **CONCLUSIONS**

The need to meet the Bay TMDL necessitates a significant acceleration of current efforts in establishing riparian forest buffers. Common reasons cited for not getting more of this practice on the ground are:

- willing landowners have already been reached;
- higher commodity prices for crops reduce landowner willingness to retire land;
- desire to keep land available for sale and development—many landowners/farmers are of retirement age;
- the confusing mix of programs and funding sources;

These are not new challenges, yet it is not known how much any one of them hampers progress in restoring buffers. No surveys have been done, and there is no information about how many landowners have turned down forest buffers or why. In fact, there is evidence to suggest that if landowners are educated, incentivized, and encouraged, they are usually willing to plant forested buffers as part of good farm stewardship (See PA example, page X).

Overcoming the challenges laid out in this paper will require concerted attention by key decision makers and program managers. Innovative approaches and changes to existing programs will likely be needed. To get more riparian forest buffers on the ground, state-level policies could consider:

- increased technical assistance
- bonus payments
- tiered ranking systems
- vouchers to landowners
- improved survival (with TA)
- extending the establishment period from 3 to 5 years
- funding herbicide applications twice/year for up to 5 years paid by state and federal funding
- Focused collaboration is needed to consider these policy updates and other ways of leveraging Farm Bill funding.



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