

Elizabeth Haub School of Law

Environmental Law & Policy Hack

Competition

The Issue: Nutrient Pollution

**Protecting the Chesapeake Bay from Nutrient Pollution through
Riparian Buffer Conservation Easements in the Shenandoah Valley**

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1. About the Authors

Samantha Fairbanks

Samantha is a first-year law student. She pursued an undergraduate degree in geology and environmental management, focusing her research on using livestock exclusion practices and legislation to improve water quality. She is excited to use her legal education to work towards the implementation and litigation of environmental policies, specifically relating to water quality and agriculture.

Alexis Smith

Alexis is a first-year law student. While obtaining her undergraduate degree, she studied Government and Politics, focusing her studies at the cross-section of government and the environment. Growing up in Florida along the waterways, she has a passion for water wildlife and ensuring that the next generations can enjoy the environment for years to come. Her experience with environmental protection projects includes working on policy-based solutions for a wide range of nationwide shared resources such as the air and water.

Gabriella Werner

Gabriella is a first-year law student. She has always been fascinated by marine life and how the environment and humanity interact with each other. Her interest in environmental policy stems from her wanting to protect the environment on a global scale after receiving her undergraduate degree in Environmental Biology and graduate degree in Ecology and Evolutionary Biology. Having worked on many environmental projects ranging from studying toxic air pollutant distribution and impacts in lower socioeconomic communities to researching hypoxic zones in the Gulf of Mexico, she hopes to bridge policy and science to create a better future.

3. Introduction

3.1 The Problem

The Chesapeake Bay is a 200-mile estuary that encompasses parts of six states— Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia— and the entire District of Columbia, fifty major rivers, and 64,000 square miles.¹ This watershed is home to not only wildlife, but 18 million people who live, work, and rely on the Bay.² Unfortunately, this critical area that we call home is under threat from the very people that rely on it. At its healthiest in the 1600s, the Chesapeake watershed was comprised.³ However, as our population continues to grow in both urban and agricultural development, we have stripped our watershed of these buffers and our pollution flows practically uninhibited.⁴

Why do we care? Why does nutrient pollution matter? The polluted agricultural runoff includes a significant amount of nutrients, including nitrogen and phosphorous that are limiting agents for plant growth.⁵ This overloading of nutrients arises from the constant input of the states within the watershed and travels down into the Bay to stimulate a surge of phytoplankton blooms. This sudden and exponential growth of organic matter consumes the previously limited nitrogen and spreads along the y cwtø's surface, blocking sunlight from reaching the organisms underneath, therefore preventing underwater grasses from growing.⁶ Sometimes the blooms can be even more harmful, as some algae can be naturally toxic and produce toxins that would be

¹ *More Than Just The Bay*, Chesapeake Bay Found., <https://www.cbf.org/about-the-bay/more-than-just-the-bay/> (last visited Oct. 19, 2021).

Watershed, Chesapeake Bay Program, <https://www.chesapeakebay.net/discover/watershed> (last visited Oct. 19, 2021).

² *Id.*

³ *Nitrogen & Phosphorus*, Chesapeake Bay Found., <https://www.cbf.org/issues/agriculture/nitrogen> (last visited Oct. 19, 2021).

in this analysis we will be specifically targeting Shenandoah Xcmg{ø'relevant regulatory structure and a proposed policy designed to improve nutrient management in the area.

3.2 What can be done?

The key to our success and the foundation of our policy hack is the 12,000 miles of shoreline.²¹ Currently, Best Management Practices (BMPs) are being utilized throughout the Chesapeake watershed to prevent or reduce pollutants from entering the waterway.²² There are a variety of recommended practices ranging from planting cover crops, managing manure, creating forest buffers, not tilling and restoring urban streams.²³ In the Shenandoah Valley, the Department of Environmental Quality has provided guidance for establishing Local Area Planning Goals (LAPGs) and have created a list of more than 50 effective BMPs that are to be implemented in the area.²⁴ In addition, in 2010, the EPA created the Chesapeake Bay Total Maximum Daily Load (TMDL), which is a mandate that establishes targeted reductions for nitrogen, phosphorus, and total suspended solids intended to be met by 2025. The current measures of the TMDL for the Cheucr gcmg'Dc{ 'y cvgtuj gf "õrko ku"qh'3: 7Q "o krkqp'r qwpf u'qh' pktqi gp."3407"o krkqp'r qwpf u'qh'r j qur j qtwu."cpf "8067"dkrkqp'r qwpf u'qh'ugf ko gpv'r gt"{ gct@²⁵

Since the largest contributor of nutrient pollution is agricultural runoff, it is logical that establishing a designated boundary to filter the nutrients before it reaches the water would be a

²¹ *Promoting Healthy Northern Shenandoah Valley Watersheds*, Northern Shenandoah Valley Regional Commission, <http://www.nsvregion.org/watershed-implementation.html> (last visited Oct. 19, 2021).

²² *Id.*

²³ *Chesapeake Bay Program releases best management practice guide*, Chesapeake Bay Program, https://www.chesapeakebay.net/news/blog/chesapeake_bay_program_releases_best_management_practice_guide (last visited Oct. 19, 2021).

²⁴ *Promoting Healthy Northern Shenandoah Valley Watersheds*, Northern Shenandoah Valley Regional Commission, <http://www.nsvregion.org/watershed-implementation.html> (last visited Oct. 19, 2021).

²⁵ *Chesapeake Bay TMDL Fact Sheet*, U.S. Environmental Protection Agency, <https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-fact-sheet> (last visited Oct. 19, 2021).

reductions on a sector-by-sector, source-by-source basis, including reducing pollutants from non-point sources. In 2010, the EPA created the Chesapeake Bay Total Maximum Daily Load (TMDL), which is a mandate that establishes targeted reductions for nitrogen, phosphorus, and total suspended solids intended to be met by 2025. The current measures of the TMDL for the

In addition, CWA §319 established a grant funding program for non-point source monitoring. Each year the amount of allocated funds to each watershed differs. However, as of 2020 the EPA allocated \$172.3 million to the Nonpoint source monitoring program with State of Virginia getting \$3 million.

Barriers to Regulation

Further, there are many barriers to agriculture non-point prevention, but particularly problematic for Chesapeake Bay watershed because it contains multiple states. Another problem includes a lack of permitting within the Nation Pollutant Discharge Elimination (NPDES) system. This system is the primary permitting exemption method for the Clean Water Act however agricultural pollution is outside that system. Further there is a lack of enforcement of TMDLs in practice.³⁵ This is widely

the Shenandoah Valley watershed is located, has not updated this list since 2016 which was then approved in 2018.³⁶ As someone who is interested in water quality standards, it is not unreasonable to ascertain that a lot can change in three to five years, especially for a vulnerable watershed.

4.2 State Structure

Regulatory Authorities and Virginia House Bill 1422

The regulatory agencies responsible for controlling environmental protection for Virginia are the

Virginia Conservation Easement Act

Currently there are over 750,000 acres under easements in Virginia.⁴⁴ To control this land, the Virginia Department of Conservation and Recreation implemented the Virginia Conservation Easement Act. This act requires that the purpose of these conservation easements to open up space values of real property, assuring its availability for agricultural, for-13(t)7(u1p)-13(t)7(uu90 61nom7(re)t)72 re is

5 Policy Proposal

5.1 Riparian Buffer Conservation Easements

Conservation Easements

Conservation easements are legal agreements designed to protect areas of open land, often working farmland, from being subdivided and further developed. Commonly, easements place limitations on parcel divisions, restrictions on the erection of new buildings, limiting impervious surfaces, and requiring the implementation of conservation best management practices (BMPs). Some common BMPs include establishing healthy riparian buffers, reduction of soil-disturbing activities, implementing a nutrient management plan, and livestock exclusion measures.⁵⁴ Conservation Easements are permanent contractual agreements to implement land-use restrictions on properties; these restrictions are passed along to successive landowners. These contractual agreements are with certain private or public land trust organizations, such as the Virginia Outdoors Foundation or the Valley Conservation Council. After being placed under easement and satisfying any requirements for those easements, the land trust receiving the easement conducts an audit to ensure all measures of the easement remain in place.

By donating land under a conservation easement, the landowner is able to continue to use the land as they were, however, they are promising that it cannot be parceled or developed, which, in turn, lowers the property value. The IRS has created a systematic incentive program that allows landowners to take advantage of extensive tax deductions based upon the calculated loss in value due to the easement. This opportunity is great for families who are passionate about conservation

⁵⁴ Elements of a Conservation Easement, <https://www.dcr.virginia.gov/land-conservation/sample-easement> (last visited Oct 19, 2021)

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phosphorus by 77 percent.⁵⁶ This would allow landowners to guarantee their stream banks remain protected, provide a small monetary bonus, and minimize the anxiety and deterrent effect of property-wide conservation easements.

Virginia currently has a state-wide Conservation Reserve Enhancement Program (CREP) that offers incentives to acquire riparian habitat for 32-15 years, alongside federal incentive payments and cost-share opportunities.⁵⁷ While this program mirrors the area we aim to target, it is missing the permanent nature of a conservation easement. We would like to propose an option that follows the legal structure of conservation easements, but, only requires coverage of riparian zones like the ones CREP would target. Pennsylvania has implemented this type of program, known as the Riparian Buffer Protection Agreement.⁵⁸ In Pennsylvania, they target the 50 feet surrounding the water, calling this area the most critical for water quality protections.

A benefit of this program is that it need not exclude other conservation programs. Conservation easements have never barred landowners from obtaining other cost-share programs or enrolling in incentive programs.⁵⁹ The Virginia CREP program is widespread and effective,⁶⁰ and it helps to preserve the riparian zone.

Additionally, with the looming deadline of VA House Bill 1422, farmers will likely have to implement these exclusion measures regardless. However, by placing the riparian land under

These classes would focus on topics such as understanding conservation measures and how they benefit the farmer, how to apply for cost shares, how to use BMPs, and how to place land under

6 Conclusion

Appendix A – Certification

We hereby certify that the brief for University of Maryland Francis King Carey School of Law is the product of the undersigned. We further certify that the undersigned have read the Competition Rules and that this brief complies with these Rules.

Date October 20, 2020

_____ *Samantha J. Fierman*