

A lush green forest with a dirt path leading through tall trees. The path is covered in fallen leaves and ferns. The trees are tall and thin, with dense green foliage. The lighting is bright, suggesting a sunny day.

# CONSERVING YOUR LAND

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## THE FINANCIAL BENEFITS

A RESOURCE GUIDE OFFERING INNOVATIVE WAYS  
TO BENEFIT FROM YOUR PROPERTY WHILE  
PRESERVING YOUR LAND  
In The Bull Run Mountains, VA



# Preface

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The Bull Run Mountains region of Northern Virginia has been subjected to an overdevelopment of land in the past decades. In many cases, large developments arise when a landowner sells off a portion or all of their property for a large payout. This large-scale deforestation has many negative effects, such as disrupting the water cycle and leading to more consistent and intensive droughts (Pearce).

In order to address these issues and to preserve the BRM region, this informational toolkit seeks to explore different financial solutions that allow landowners to financially benefit off of their land without selling it, thus reducing development within this region.

Within this toolkit, you will learn about two of these financial incentives - Carbon Markets and Conservation Easements - as well as their pros, cons, and potential benefit to you, the reader. The main issue with these incentives is that they are often inaccessible,



with complex processes and confusing wording. With new carbon offset programs allowing landowners with as little as 30 acres to join, it is crucial that residents have accessible knowledge of these markets.

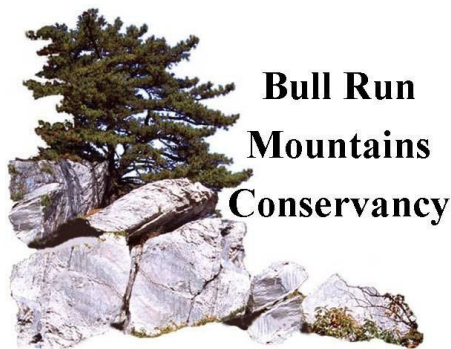
By explaining both Carbon Markets and Conservation Easements, this toolkit aims to increase knowledge and access to these solutions, which ideally will allow more landowners to balance their economic and conservation values.





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**Bull Run  
Mountains  
Conservancy**

**WILLIAM  
& MARY**  
CHARTERED 1693

**INSTITUTE FOR  
INTEGRATIVE  
CONSERVATION**

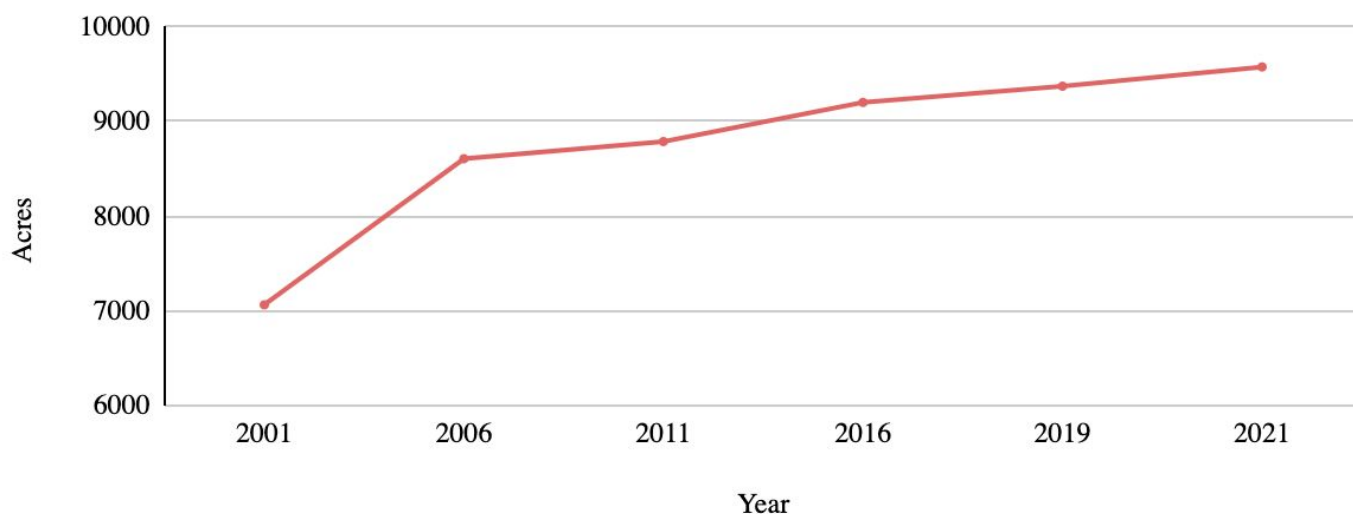
# The Bull Run Mountains

of Northern Virginia are a natural treasure cherished by all. While they are renowned for their stunning beauty, the region serves as a “living laboratory and open air museum” with rich biodiversity and historic value (“Living on the Edge”). However, in recent years, the Bull Run Mountains

higher than local averages. When referring to net loss of forests, the BRM region suffered an average decline of 3.74 percent, while local county rates as well as state levels were at the ~2 percent mark (Tingley and Tao 14). Increasing deforestation threatens the region in multiple ways, one being increased droughts. Just this year, NOAA declared that Fauquier County’s

## Total Acreage of Developed Land from 2001 - 2021

Includes land converted to open space / low, medium and high intensity developments



have been subjected to increased urban sprawl stretching from the central Washington D.C. metro area. From 2001 - 2021, our study area of ~67k acres had a loss of over 800 acres of deciduous forest, while roughly 900 acres were transformed into medium intensity development in the same 20 year period (Tingley and Tao 12). This isn’t typical growth, either; the rate for the Bull Run Mountains region is

June of 2024 was the driest it has ever been since they started recording weather 130 years ago (“Recent News”). In order to prevent future droughts and other ecological issues, we must find solutions that allow landowners to economically benefit from their land without selling it for development. But how can we do this? What is the most effective way to share these opportunities?



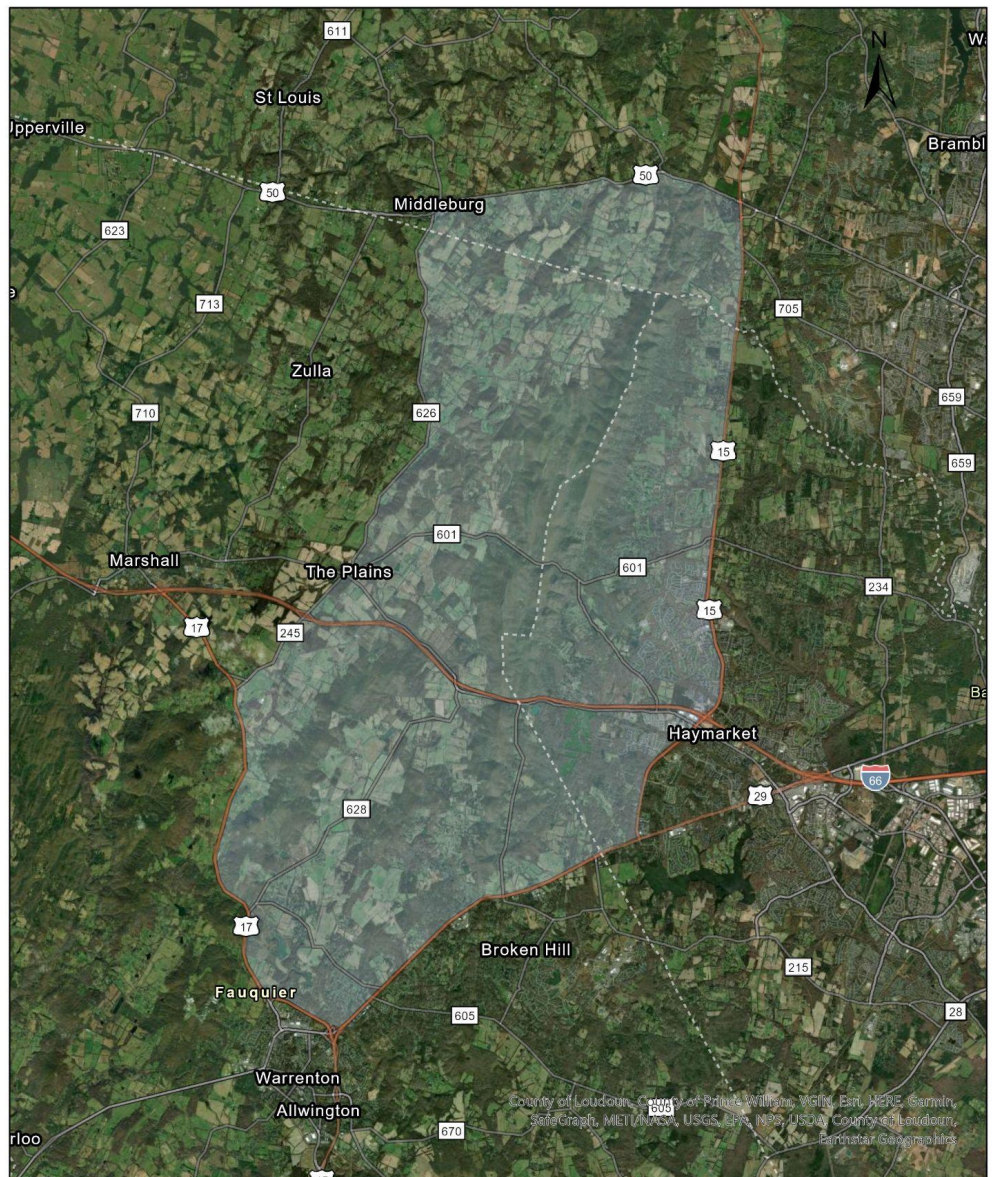
# Research Process

To solve these issues, my research involved interviewing professionals in both carbon markets and conservation easements. This is a continuation of last year's project, when two students, Jialu Tao and Aaron Tingley, began this project. They researched carbon sequestration rates within our study area (see map below) as well as conducted interviews with landowners to understand their knowledge of these financial incentives. They utilized GIS mapping to determine land use change from 2001 to 2021, providing valuable data on the development rate Bull Run Mountains is experiencing.

Our overarching research goal was to lower the developmental burden that the BRMs area is facing. One of the main findings we discovered is that these solutions are effective and landowners are interested, but they are often not accessible. In large, this is due to gaps in knowledge about these programs, how they operate, and who qualifies for them. They can also be legally

complex with frequent changes to policy. This can be a dealbreaker for those who wish to get involved.

This toolkit aims to bridge this gap in knowledge by addressing these concerns. In the following pages, you will learn about how carbon credits work, the different types of credits, and programs available to you in the BRM region. You will also learn about conservation easements, their role in protecting your land, and possible tax incentives they can provide you with.



**Our Study Area**

# What is a Carbon Market?

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In 2015, the Paris Agreement was formed, bringing countries together with the unified goal of keeping global temperature change ‘well below’ 2 degrees celsius compared to pre-industrial levels, while pushing to keep it under 1.5 degrees celsius (“The Paris Agreement”). Forest carbon markets offer a unique solution to this, where corporations and firms can purchase carbon credits in order to offset their emissions. The asset being traded, a carbon credit, represents one metric ton of carbon dioxide being removed or prevented from entering the atmosphere. These programs create individualized strategies with landowners that allow their forests to increase the amount of carbon dioxide their land absorbs, also known as additional *carbon sequestration*. This creates carbon credits, which can be sold to buyers within the market.

The concept of *additionality* is key - carbon credits are only viable if the project generates *additional* carbon sequestration that would not have occurred if the project was not implemented.

## Compliance vs. Voluntary Markets

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There are two sectors of the carbon market: Compliance and Voluntary. In the compliance market, companies are given carbon credit ‘allowances’, with each credit allowing them to emit one metric ton of carbon dioxide. Companies that

emit less than their allotted credits can sell them to firms that have exceeded their limit. Compliance markets exist under a ‘Cap and Trade’ system, which is regulated by a government body, such as California, who has been using this system since 2006 (“California’s”).

The voluntary carbon market (VCM), on the other hand, is entirely optional. Rather than an allowance, these credits are referred to as *carbon offset credits*. The market is mainly made up of corporations who are using these to negate their emissions in order to meet their climate goals. There are two general categories that offset projects fall into: reduction and removal.

## Reduction vs. Removal Projects

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Carbon *reduction* projects (also commonly called carbon avoidance) focus on preventing carbon dioxide that would be released if the project was not in place. Examples of this include investing in clean energy rather than a polluting power plant.

Carbon *removal* projects focus on removing carbon dioxide from the atmosphere. Examples of this include reforestation and afforestation.

This toolkit focuses mainly on a type of project known as *Improved Forest Management (IFM)*, which occurs when a landowner already has a forested area. These typically fall under carbon reduction unless there is a significant reforestation aspect as well.

*Please continue scrolling to learn more.*



# Improved Forest Management (IFM)

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Improved Forest Management, or IFM, is a project strategy that works to improve a forests' health, development, and regeneration. Depending on the current forest practices, it may involve lessening the number of cuttings, performing selective cutting, and / or planting new trees in the place of old ones.

These projects are created by a project developer, who starts by establishing a carbon sequestration baseline, which shows how much carbon was being absorbed before the new practices. Once the contract is finalized, these new practices are installed, and the developer monitors the carbon sequestration rate. From here on, every additional metric ton of carbon dioxide absorbed above the baseline can be registered as a carbon credit. To do this, the developer has the credit verified by a third party inspector. Once this is done, it can be sold on one of the established carbon markets.

## IFM Projects become more accessible

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In the past years, IFM projects had been exclusively for landowners with massive amounts of established forests, with many commonly over 2,000 acres. While programs like this were beneficial for large scale forests, as well as generating a lot of offset credits, it did not allow for participation from landowners with smaller quantities of forest. Recently, however,

programs have been created that allow landowners with as little as 30 acres of forest to participate in these markets. With nearly 82% of Virginia's forests being privately owned in 2020 ("Forests of Virginia"), this opens the doors for many landowners that previously could not participate.

Within my research, accessibility to carbon credits is one of the most prohibiting factors that stop landowners from joining. The technological jargon is often confusing and difficult to understand. The market being a somewhat new concept also brings difficulties, with frequent changes that make it difficult for persons attempting to get involved. With these new programs, as well as this informational toolkit, it is my hope that more landowners will be able to educate themselves and evaluate these programs to see if it would be a good fit for them.

*Continue reading to learn more about different carbon offset programs available for landowners to participate in. The programs listed are tailored towards the northern Virginia region, and may not be available everywhere.*



# Carbon Offset Programs In Virginia

There are a couple of different programs that you can enroll your forest in. This guide will provide a simple overview of these programs, including land requirements, property conditions, and common contract lengths. For a more in depth review, please see the respective webpages, which will be listed at the end of the toolkit.



## **Forest Carbon Works**

- ↑ Minimum of 40 forested acres, all forested acreage must be enrolled
- ↑ Forest must be at risk or at future risk of conversion and / or harvest
- ↑ Landowner must hold harvesting rights / Non-commercial harvests generally allowed, such as firewood, etc.
- ↑ Contract has 25 year payment period followed by a 35 year observation period to ensure the forest continues to store carbon. Optional 100 year observation period, offers doubled payments within 25 year payment period
- ↑ Two payment options: Annual flat rate / acre or revenue share
- ↑ Upfront costs: None
- ↑ [Forest Carbon Works - Link to website](#)

## **Family Forest Carbon Program**

- ↑ Minimum of 30 continuous, naturally forested acres, not all land is required to be enrolled
- ↑ Forest must be at risk or at future risk of conversion / harvest
- ↑ Landowner must hold harvesting rights / Non-commercial harvests generally allowed, such as firewood, etc.
- ↑ 20 year contract
- ↑ Majority of Prince William County ineligible
- ↑ Upfront costs: None
- ↑ [Family Forest Carbon Program - Link to website](#)







- ↑ Minimum of 40 acres held by single owner / All timberland not required to be enrolled
- ↑ Forest must be at risk or at future risk of conversion / harvest
- ↑ Landowner must hold harvesting rights / Non-commercial harvests generally allowed, such as firewood, etc.
- ↑ 40 year contract / first 20 years are harvest deferral / After 20 years, can harvest excess carbon stock from the initial 20 year period
- ↑ Payment fixed for first 3 years, market price of carbon offset paid after
- ↑ Upfront costs: None
- ↑ [LandYield / FiniteCarbon - Link to website](#)

**To learn more** about the carbon offset programs mentioned above, please click [this link](#). Virginia Cooperative Extension has put together a comprehensive in-depth guide about these programs.

## Pros and Cons

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These programs as a whole have their advantages and disadvantages. On the pro side - these smaller acreage programs offer more landowners a chance to enter this market, allowing more conservation to happen. Carbon offsets allow more funding for conservation projects to occur globally. They offer a unique way for corporations to offset their carbon footprint by investing in nature based solutions.

However, carbon markets have been under scrutiny in the past years. There has been cases where the project baseline is set lower than it actually is, allowing projects to credit more carbon sequestration than actually occurred. There are also times

where trees were said to be in danger but in reality were not, making the credits invalid as they did not generate additionality. The main issue, in my opinion, is that these programs essentially allow corporations to continue to pollute as long as they pay to offset. In a perfect world, this would work - but voluntary carbon offsets need to be regulated in order for this to happen. At the moment, there is no official overarching regulation - there are privately run exchanges that set their own regulations, but these are not government affiliated.

Voluntary carbon offsets have the potential to be a key player in the race to lower global emissions, but in the coming years, they must become better regulated and more trustworthy. I encourage you, the reader, to use what you've learned in this guide and research more about these specific programs and markets. If used and credited correctly, they could play a large piece of the puzzle to mitigate climate change.

*This is not investing advice. Figures and policies may change. Please consult a member of these programs for more details.*

# Conservation Easements

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Conservation Easements are a unique way to not only protect your land for years to come, but to also gain significant financial benefits. A conservation easement is a legal document that essentially restricts the usage of the land. This voluntary contract is between the owner of the property and either a government or land trust organization. These contracts last forever, and stay with the property even if sold. The main way these easements protect the land is by prohibiting the number of times a particular parcel can be divided. Depending on the easement, there may be more restrictions, but generally, recreational activities are still permitted on the property.

While conservation easements exist predominantly to promote conservation, they also offer significant tax benefits. The main benefits are Land Preservation Tax Credits and Federal Income Tax deductions.

## Land Preservation Tax Credits (LPTC)

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Conservation easements, as stated before, restrict how you can develop your land. Because of this, when a land is donated to be put under easement, its value inherently drops. The Land Preservation Tax Credit, or LPTC, incentivizes landowners to enter easements regardless of this property value loss. This credit is equal to 40% of the market value when it is donated to easement (“Land Preservation Tax Credit”).

The amount of LPTCs received can be calculated by first finding the difference in property value before and after the easement, which can be calculated by a certified real estate appraiser.



As an example - take a property that is appraised at \$500k, and after an easement is implemented, it is worth \$400k. In this example, the loss in property value is equal to \$100k. This is the figure that we take 40% out of, giving you \$40k of LPTCs. This can be used against your Virginia tax liability, up to \$20k per year. These credits can be delayed usage for up to 10 years.

These credits are transferable to other Virginia taxpayers. Using a broker, you can convert these credits into cash by selling them to individuals or corporations that use them against their own Virginia taxes. On average, you can expect to receive roughly 80¢-85¢ per \$1 of credit sold (cite).

Virginia only distributes a maximum of \$75M of these credits per year, distributed as first come, first serve. If you are interested in donating your land to easement, consult one of the following organizations on the following page.



# Federal Income Tax Deductions

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In addition to state tax benefits, putting your land under easement also provides significant federal tax deductions. The amount of federal deduction is equal to the property value difference after putting your land under easement, minus the amount of Virginia land preservation tax credits. In our previous example, where the property value loss was equal to \$100k and you would receive \$40k in LPTCs, you would receive an additional \$60k to be used towards a federal income tax deduction.

Per year, a landowner can calculate 50% of their adjusted gross income and use this figure to determine the amount of federal income tax deduction. For example, a landowner with a gross adjusted income of \$75k could use \$37,500 of federal income tax deduction that year ( $\$75k \times 0.50 = \$37,500$ ).

Individuals classified as farmers, meaning 50% or more of their income comes from agriculture, are entitled to deduct 100% of their adjusted gross income from their total income tax deduction figure per year (*What are the Tax Benefits of an Easement?*).



After using this federal income tax deduction, any remainder can be delayed up to 15 years before it expires.

## Lower Property Taxes

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In general, conservation easements cause your property value to decrease, resulting in a lower tax rate. In addition to this, specific counties will use Virginia's Land Use Assessment to determine property tax. Conservation easement protected properties may be taxed on *use value* rather than *market value*, leading to lower property tax (*What are the Tax Benefits of an Easement?*).

## Available Conservation Easement Programs

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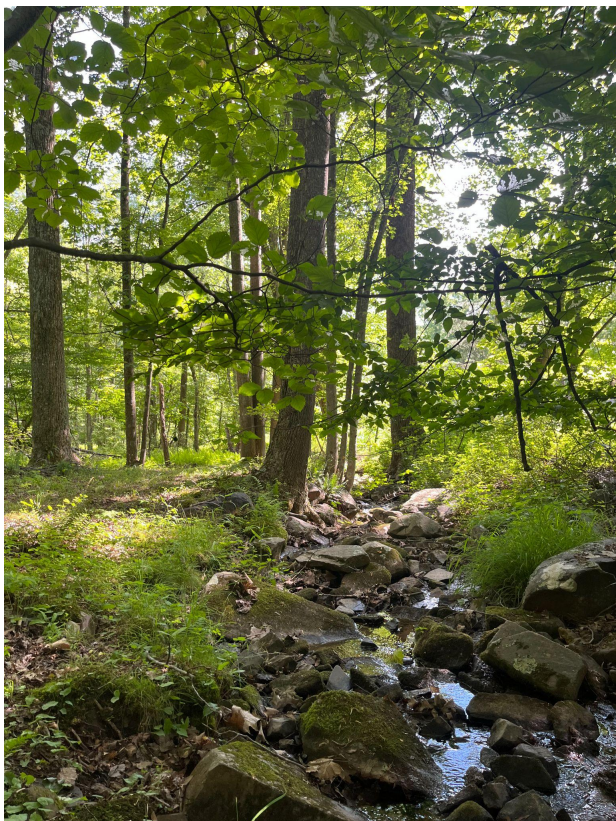
There are several programs in the greater Bull Run Mountains area that you can partner with to conserve your land. Listed below are the most prominent organizations within the region. It is recommended you reach out to them for any additional questions. Please click on the name to be taken to the respective website.

- ↑ [Land Trust of Virginia](#)
- ↑ [Northern Virginia Conservation Trust](#)
- ↑ [Old Dominion Land Conservancy](#)
- ↑ [Piedmont Environmental Council](#)
- ↑ [Virginia Outdoors Foundation](#)

Putting your land under easement does come with costs, such as processing fees, property appraisal fees, and attorney fees. There are organizations that can help with these costs if they are a barrier. The [Rural Landowner Manual](#), created by several local conservation groups, has an elaborate guide to these.

One specific fund directly relevant to our study area is the Piedmont Environmental Council's Bull Run Mountains Land Conservation fund, which can help with costs for properties in close proximity to these mountains. Please contact the [Piedmont Environmental Council](#) for more details.

Other easement programs relevant to the area include the Virginia's [Department of Historic Resources Preservation Easement](#), which provides easements exclusively for landowners who have some sort of historical significance within their property.



For farmers residing in Fauquier County, a program for exists where farm owners can sell the developmental rights of the property to the county. They are allowed to continue to farm with little to no restrictions. To learn more, [click here](#).

*Easements exist primarily to conserve land, not for financial benefit. This is not tax advice. Please consult your tax advisor or a member of one of the listed Land Trusts for more information. Legal definitions and conditions subject to change.*

## **Other Conservation Programs with Financial Benefits**

Apart from these incentives, other programs that revolve around conservation exist.

**Reforestation projects** plant trees where there was previously forests. **Afforestation projects** plant trees where there was historically something other than forest. These lead to greater carbon sequestration, which can be sold as offset credits.

**Wetland and Stream Mitigation projects** allow developers who are disturbing a wetland to purchase credits elsewhere that go to improving or expanding existing wetlands. Virginia operates under a “no net loss” policy (9VAC25-210-116), meaning landowners can pay to have a wetland implemented or improved on their property and sell the new credits to the wetland disturbing firm. This is extremely oversimplified - to learn more, please examine [this resource](#).

However, these programs typically have a significant buy-in at the beginning as they are more cost intensive. Because of this, I have chosen to not name specific programs - but there are a handful of these services in this area. To learn more, please research available programs within your area.



## Conclusion

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These two solutions, Carbon Credits and Conservation Easements, allow Bull Run Mountain and surrounding landowners to balance both their economical and conservation values. This guide serves as a bridge between residents in this area and these incentives, breaking down these complex programs and regulations into understandable, digestible concepts.

By reading this guide, you should have a better, more in depth understanding of these programs and how they operate. I hope you choose to take advantage of the links and resources provided to further investigate these organizations and discover if they are the right fit for you.

## Bull Run Mountains Conservancy and W&M Institute of Integrative Conservation

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This research was done through William and Mary's Institute of Integrative Conservation (IIC) in collaboration with The Bull Run Mountains Conservancy. Special thanks to Erica Garrouette and Robert Rose, my faculty mentors at the IIC, as well as to Michael Kieffer, my conservation partner at the BRMC. This research would not have been possible without their continued support and assistance. Thank you.

A special thank you to Kyra Cheremeteff for connecting me with several key



Student Researcher Colby Samide (left) and Michael Kieffer, Executive Director of the Bull Run Mountain Conservancy (right)

individuals for interviews, as well as providing me with insightful industry knowledge on carbon credit markets.

## About the Author

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Colby Samide is a junior at William & Mary studying Economics with a minor in Psychology and a concentration in Innovation & Entrepreneurship. He is passionate about conservation and hopes to use his Economics degree to get further involved in conservation.

# Glossary of Terms

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**Additionality:** Used alongside carbon offset projects. These projects must have additionality, meaning that the project generated additional carbon sequestration than would have occurred had the project not taken place.

**Adjusted Gross Income (AGI):** Total income after subtracting any deductions.

**Afforestation:** Planting a forest in a location that has historically not been forest.

**Cap and Trade System:** Emissions system that certain states use. Government regulated. Government sets a limit (the ‘cap’) on how much emissions can be released. It then gives or sells carbon credits, which act as allowances, to companies which allow them to pollute a certain amount. Heavier polluters can buy credits from cleaner firms (the ‘trade’). Government will lessen how many allowances are given yearly, incentivizing firms to emit less.

**Carbon Credit / Carbon Allowance:** Represents one metric ton of greenhouse gases, most often carbon dioxide, allowed to be emitted. Used in the compliance market.

**Carbon Markets:** Broad carbon market consisting of compliance and voluntary markets.

**Carbon Offset:** Represents one metric ton of carbon dioxide that has been removed from the atmosphere (removal) or stopped from being released into the atmosphere (reduction).

**Carbon Sequestration:** The process of capturing carbon dioxide and storing it.

**Compliance (Carbon) Market:** Carbon Market where factories and firms are required to participate. Typically uses cap and trade system.

**Conservation Easements:** Legal contract with government or land trust that permanently restricts the future development of the land.

**Improved Forest Management (IFM):** Type of forest management that increases overall carbon stock in forests by implementing more conservative forest practices. Can also mean reducing emissions from normal forestry / logging work.

**Income Tax Deduction:** Amount you can subject from your taxable income. Reduces overall tax paid.

**Land Preservation Tax Credits (LPTC):** Virginia issued credits that can be used against your Virginia tax liability. Credited at 40% of your easement donation value.

**Conservation Land Trust:** An organization, typically a non-profit, that purchases land or engages in conservation easements for the sake of preserving its natural elements by restricting development.

**Nature Based Solutions:** Using natural elements or processes as a solution to human issues, such as planting trees to sequester carbon dioxide.

**Reduction Projects:** Type of carbon offset project that reduces or stops the release of carbon dioxide into the atmosphere.



**Removal Projects:** Type of carbon offset project that removes and stores carbon dioxide from the atmosphere.

**Tax Liability:** The amount of tax you are required to pay to a government entity.

**Voluntary (Carbon) Market:** Optional market where firms and individuals can offset their carbon emissions by purchasing carbon offsets from projects that increase carbon sequestration.

**Wetland and Stream Mitigation:** A type of offset that is required by projects that impact and reduce wetlands. The firm constructing said product must pay to implement a new wetland or improve an existing one to make up for the losses on the affected wetland.

## Important Links

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Link to Forest Carbon Works:  
<https://forestcarbonworks.org/>

Link to Family Forest Carbon Program:  
<https://familyforestcarbon.org/>

Link to LandYield / FiniteCarbon:  
<https://landyield.com/>

Link to detailed information on these Carbon Offset Programs by Virginia Cooperative Extension:  
<https://www.pubs.ext.vt.edu/CNRE/cnre-177/cnre-177.html>

Link to Land Trust of Virginia:  
<https://www.landtrustva.org/>

Link to Northern Virginia Conservation Trust: <https://www.nvct.org/>

Link to Old Dominion Land Conservancy:  
<https://odlc.us/>

Link to Piedmont Environmental Council:  
<https://www.pecva.org/>

Link to Virginia Outdoors Foundation:  
<https://www.vof.org/>

Link to Rural Landowner Manual:  
<https://www.pecva.org/wp-content/uploads/RuralLandownerManual-web.pdf>

Link to Virginia's Department of Historic Resources Preservation Easement:  
<https://www.dhr.virginia.gov/programs/easements/>

Link to Fauquier County's Farmland Preservation Program:  
<https://www.fauquiercounty.gov/government/departments-a-g/agricultural-development/pdr-purchase-of-development-rights-program>

Link for more information on Wetland and Stream Mitigation:  
<https://www.nrcs.usda.gov/programs/initiatives/wmpb-wetland-mitigation-banking-program>

Link to the Bull Run Mountains Conservancy website:  
<https://www.brmconservancy.org/>

Link to more details on tax benefits from conservation easements:  
<https://www.pecva.org/land-conservation/conserving-your-land/conservation-easements/tax-benefits/tax-benefits/>

Link to William & Mary Institute of Integrative Conservation:  
<https://www.wm.edu/offices/iic/>

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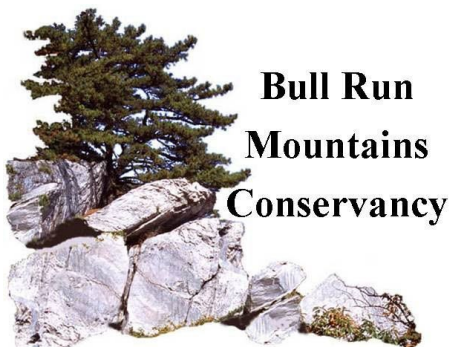
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