# CHESAPEAKE BAY FOUNDATION

*Environmental Protection and Restoration*
*Environmental Education*

**Senate Bill 414**
Climate Solutions Now Act of 2021

Date: March 31, 2020
To: House Environment and Transportation and Economic Matters Committees

Position: Support
From: Robin Clark, Maryland Staff Attorney

Chesapeake Bay Foundation **SUPPORTS** SB 414 as a comprehensive and critical action by the State of Maryland to achieve net-zero greenhouse gas emissions by 2045. The bill will mitigate climate change and improve water quality with a goal to plant 5 million trees through State and private efforts by 2030.

SB 414 is a comprehensive approach reducing greenhouse gas emissions and mitigating the effects of climate change. It addresses emissions from sources including vehicles, buildings, and landfills. It acknowledges the need to accelerate greenhouse gas reductions to prevent catastrophic environmental consequences. It also acknowledges that disadvantaged communities and employees in fossil fuel industries will be disproportionately affected by some of the necessary adaptations to climate change.

**Confronting climate change and its effects, including severe storms, warmer temperatures and seas level rise, supports the Chesapeake Bay's recovery**
Climate change is affecting the Chesapeake Bay—adding more stress to a system still out of balance. The physical impact has long-lasting implications for its waters, wildlife, and watershed. The number of intense storms is on the rise, increasing soil erosion, sewer overflows, flooding, and polluted runoff. These activities dump nitrogen, phosphorus, and sediment into rivers and the Bay. As a result, our waters experience more dead zones and algal blooms. Larger than average inflows of fresh water threaten oysters and push other Bay-life out of their traditional habitats.

Average annual stream temperatures have increased by 1.1°F (.61°C) in the past six decades in the Chesapeake Bay watershed according to the U.S. Geological Survey (USGS). Warmer waters have a decreased capacity to hold dissolved oxygen, exacerbating the Bay's fish-killing dead zones and contributing to algal blooms. Rising water temperatures are stressing fish from the Bay's iconic striped bass to Pennsylvania's beloved brook trout. Temperature sensitive species are at risk, like eel grass, a food source for migratory waterfowl and important habitat for blue crabs. Like higher inflows of fresh water, significant changes in water temperature displace Bay species, impacting fishing.

Sea-level rise is exacerbated by land subsidence. This combination of processes in the Chesapeake Bay has resulted in approximately one foot of net sea-level rise in the Bay over the past 100 years—a rate nearly twice that of the global historic average. Thousands of acres of environmentally critical tidal wetlands and shorelines are threatened, not to mention susceptible cities and towns. In low-lying areas, storm surges combined with higher sea levels and increasingly erratic storm activity may create a "perfect storm" that will flood thousands of acres. Many of those areas are economically disadvantaged, and the combination of flooding and limited access to emergency facilities—facilities that might themselves be flooded—could be disastrous.

**5 million trees will help the State reach its greenhouse gas reduction goals and help the State meet its Watershed Improvement Plan climate goals**
SB 414 sets out a goal for the State to plant 5 million trees by 2030 with 500,000 of those trees to be planted in underserved urban areas of the State. The 5 million tree goal represents a step forward for the State that complements and supports its achievement of the Greenhouse Gas Reduction Plan, the Phase III Watershed Implementation Plan, and needed additional reductions in nitrogen pollution required to address the impacts of climate change in Maryland's Watershed Implementation Plan.

The draft 2019 Greenhouse Gas Reduction Plan includes targets for tree plantings by the State by 2030 that when totaled reach about 5 million trees. However, many of those plantings would simply represent mitigation for trees cut for development or timber. SB 414 would increase the State's net forested acreage to help achieve the State's current goal of 40% reduction by 2030 and the accelerated reduction rate called for in this legislation.

The State's Phase III Watershed Implementation Plan relies in part on tree planting best management practices and other practices that could include tree plantings, offering the potential to plant more than 2 million trees by 2025. As SB 414's goal is tied to 2030, the 5 million tree initiative represents a near continuation of that pace for five additional years. This effort will help support the State's maintenance of water quality, even in the face of changing conditions of climate change.

By 2022 the State will likely need to address an additional 1.1 million pounds of Nitrogen to account for the effects that climate change is already having on the Chesapeake Bay. The 5 million trees envisioned in this legislation could meet up to 40% of the State's responsibility – a strong and proactive contribution. An early investment in trees, as one of the lowest cost methods for reducing nitrogen pollution, could help defray additional costs to the State to address that approaching requirement.

**The tree planting goal will be achieved through a combination of state, private, and nonprofit efforts**
This legislation includes a goal for the stat is not a mandate on the State to plant 5 million trees through its own efforts alone. It is a goal for Maryland to be achieved through State coordination, increased funding to existing State programs, leveraging federal opportunities, and through a new Urban Trees Program.

Achievement of the goal will be a joint effort. State agencies, federal partners and nonprofit efforts will contribute to its success. These include the Department of Natural Resources Forest Service, the Department of Agriculture, the Natural Resources Conservation Service and the Chesapeake Bay Trust. To support the State's work, the legislation directs funding from the Chesapeake and Atlantic Coastal Bays Trust Fund for a 5 million tree coordinator with the Department of Environment, and for technical assistance from the Department of Natural Resource Forestry Service.

The bill also organizes a Commission for the Innovation and Advancement of Carbon Markets and Sustainable Tree Plantings. The Commission will develop recommendations regarding the establishment

of a Maryland–based carbon offset market to support the State's tree–planting goals. Carbon markets could continue tree planting progress even after the expiration of this initiative's eight-year timeline.

**Trees are one of the most cost-effective water quality filters of polluted runoff from agricultural lands and in developed areas**

Tree plantings and forest establishment consistently rank at or near the top the list of the most cost-effective pollution reduction practices in urban and rural environments. An agricultural forest buffer is 3 times more cost effective than a soil conservation plan and 6 times more cost effective than a standard cover crop – important practices supported and cost-shared by the state at nearly $25 million every year. An urban tree canopy planting is comparable in cost to replacing septic systems with public sewer, a practice actively promoted and funded by the Bay Restoration Fund. All of these strategies are key to meeting the state's pollution reduction goals – but only trees lack adequate financial support and technical assistance.

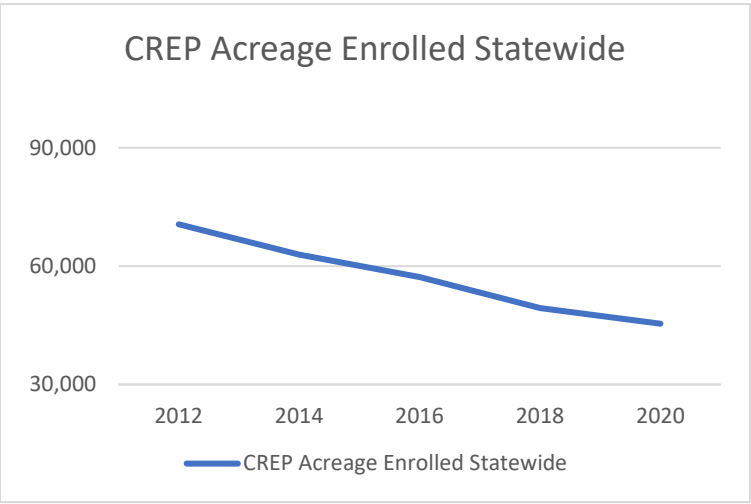
**The trees will be planted on farmland borders, on private property, and in underserved urban areas**

<u>Maryland can leverage additional federal funding to support forested buffers on agricultural lands that capture carbon and filter polluted runoff</u>

SB 414 will provide additional funding to the Maryland Department of Agriculture for tree plantings under the federal Conservation Reserve Easement Program and other tree-planting programs on agricultural land. The legislation will also allow the Department the flexibility to increase the signing bonus for enrolling their property in 10-15-year easements with forested buffers in the Conservation Reserve Easement Program from up to $250 per acre to up to $1000 per acre.

The Conservation Reserve Easement Program currently represents a missed opportunity for the State to leverage federal lease payments to farmers to increase Maryland's forested buffers. The program's terms allow the State to enroll up to 100,000 acres, but acreage in the program has been dropping in the past ten year and now totals less than 50,000 acres.

| Year | Acreage enrolled |
|---|---|
| 2012 | 70,613 acres |
| 2014 | 62,962 acres |
| 2016 | 57,214 acres |
| 2018 | 49,368 acres |
| 2020 | 45,421 acres |




This bill seeks to boost enrollment in CREP and, alternatively, support other similar tree plantings programs through the Department of Agriculture with $2.5 million from the Bay Restoration Fund. The use of the Bay Restoration Fund is more than warranted here as forest buffers represent one of the most cost-effective methods of improving water quality. On a typical forest buffer easement, 200 trees are planted per acre, so a $2.5M annual investment over 8 years could yield up to 4 million trees and add 2,500 acres to the Sate's CREP total a year, and 20,000 acres over the eight-year life of the program.

Additional funding for the State's existing Department of Natural Resources tree planting programs will help reach public, institutional and private landowners interested in establishing woodlands
SB 414 provides additional funding for the Department of Natural Resources for tree plantings accomplished through the Chesapeake and Atlantic Coastal Bays 2010 Trust Fund, the Mel Noland Woodland Incentives Fund, and other forestry initiatives. The aim is to enhance current programs funding tree plantings on public and private lands, both through additional funding for the programs themselves, and up to 13 additional staff for the Forest Service.

Three are several existing tree planting programs run through the Department of Natural Resources Forest Service. The Chesapeake and Atlantic Coastal Bays Trust Fund provides direct grants to local governments, institutions and non-profit organizations for tree plantings. The Woodland Incentive Program provides 65 percent funding for forestry practices on private, non-industrial forestland ownerships 5 - 1,000 acres in size. The Backyard Buffers program provides a free "buffer in a bag" to help get homeowners started in buffering their streamside. The bag includes 20-30 native tree and shrub bare-root seedlings, approximately 1 to 2 feet in height. A mix of various species, the seedlings are well to suited streamside conditions. Through TREE-Mendous MD, residents can use a coupon for discounts on trees on residential properties.

**500,000 trees in urban areas will deliver a range of co-benefits to underserved areas of Maryland**
The Climate Solutions Now Act directs that at least 500,000 of the 5 million trees named in the statewide goal should be planted in underserved areas of the State. These trees will be planted through the Chesapeake Bay Trust's partnerships with local neighborhood and community groups who apply for tree plantings. Maintenance costs are eligible expenditures under the program and grant from the Trust must include provisions for verification that plantings are being maintained as planned.

The definition of underserved is an urban area as defined by the US Census AND one of the following:

- Public housing, to be added through amendment
- Neighborhoods that were red-lined;
- Census tracts with high unemployment above state average; or
- Census tracts with median incomes representing 75% of the state average.

The most popular species for urban tree plantings currently include Oak (Quercus spp.), Red Maple (Acer rubrum), and American Sycamore (Platanus occidentalis). Trees like these lessen dangerous urban heat-island effects, increase property values, filter harmful airborne particulates that are common in urban environments, and reduce polluted runoff. The state has helped a number of cities and towns make plans to increase urban tree canopy so that neighborhoods have access to these benefits. SB 414 would provide a funding source to help implement these plans.

**The 5 million tree goal will be supported by State coordination and technical assistance**
The State will ensure progress and organization of state and private efforts toward planting 5 million trees through a 5 million tree program coordinator in the Department of the Environment. The Coordinator will promote, facilitate, and align the State's efforts to achieve the five million tree planting

goal. The Coordinator will report annually to the General Assembly's environmental committees with an update on progress. The Coordinator will be supported by the Chesapeake and Atlantic Coastal Bay Trust Fund.

The Chesapeake and Atlantic Coastal Bays Trust Fund will also support the addition of 13 contractors for the Department of Natural Resources Forest Service. These positions will help connect willing landowners to planting programs and help plan tree plantings. Amendments in the Senate also provide that these staff may carry out forest and buffer management, including invasives removal. The estimated cost of the thirteen positions is based on last year's estimate of needs by the Department, at $1.1M.

A Commission with membership from relevant State agencies and relevant stakeholders including the Maryland Association of Counties and Maryland Municipal league, the Commission on Environmental Justice and Sustainable Communities, statewide environmental advocates, the Farm Bureau, the University of Maryland, and the Maryland Forestry Foundation will help guide the work of the Coordinator and the State. The Commission for the Innovation and Advancement of Carbon Markets and Sustainable Tree Plantings will report by October 31, 2022 with a plan for tree planting, including guidelines for plantings to maximize carbon sequestration, mitigate urban heat islands, and improve water and air quality. The Commission will also investigate methods for seeking private capital for tree plantings and consider using Water Quality Revolving Loan Funds (WQRLF) to back Environmental Impact Bonds for tree plantings.

**Funding dedicated from existing sources, including the Bay Restoration Fund and the Atlantic and Coastal Bays 2010 Trust Fund will support the program and then revert after eight years**
SB 414 makes use of existing environmental funds to support the tree plantings goal. As the State is completing upgrades to it major wastewater treatment plants, there is funding available in the Bay Restoration Fund to support other needed water quality practices. This legislation would dedicate $15 million per year for eight years to tree plantings, including $2.5 million to the Maryland Department of Agriculture, $2.5 million to the Department of Natural Resources and $10 million to the Chesapeake Bay Trust for an Urban Trees Program. Funding for tree planting coordination within the Maryland Department of Environment and additional technical assistance support provided to farmers and landowners through the Maryland Forest Service would be funded by the Chesapeake and Atlantic Coastal Bays 2010 Trust Fund at $1.25 million annually for eight years.

**The trees will be native species, sustainable, and properly maintained**
SB 414 states that the 5 million trees will be native, sustainable species and will be maintained. The Commission for the Innovation and Advancement of Carbon Markets and Sustainable Tree Plantings will determine a list of native species for plantings and a plan for their planting and maintenance by October 31, 2022.

Past practice is an indication of the likely types of species that will be planted. When planting forested buffers for farmland, or afforesting rural lands, the Maryland Department of Agriculture, the Maryland Department of Natural Resources, and partners aim to plant at least ten species for each acre of planting for diversity. Various species of oak, sycamore and maple are common. Sycamores and maples are

facultative, thriving in both wet and dry conditions. Various species of oaks are used to match the conditions. Fast growing sycamores have additional qualities, they thrive in stream areas and deer do not like to eat them. Researchers with the Department of Natural Resources have found that more than 80% of planted forest buffers thrive despite concerns over wildlife and weeds.[1]

In developing urban planting projects, the Chesapeake Bay Trust works closely with neighborhood groups to determine the types of trees planted. The community applying for the planting project will discuss the possibilities, including the height of the tree at maturity, whether the tree will bloom or drop seeds or fruit, the amount of shade, and what options make the most sense considering the locations where the plantings are desired. The most popular species for urban tree plantings include oak, Red Maple, and American Sycamore.

The Chesapeake Bay Trust must include provisions for verification that tree-plantings in underserved urban areas are being implemented and maintained as planned in the grant agreement with the community group receiving the trees. Funding for the Department of Natural Resources tree plantings programs may only be used for tree plantings on private land if the landowner enters into a binding legal agreement to maintain the planted areas in the tree cover for at least 15 years.

Plantings through the Department of Agriculture must be for a term of 10 years or more under the Conservation Reserve Enhancement Program. All maintenance, such as mowing to control woody growth, is the responsibility of the participant and shall be performed according to guidelines that are prepared by Natural Resource Conservation Service and agreed upon in the conservation plan. Participants are responsible for controlling noxious and invasive weeds. All maintenance shall be conducted outside the primary nesting season (April 15 – August 15), except when necessary for spot treatment of weed problems. Approval of the FSA County Committee is required prior to conducting any maintenance during the primary nesting season. Maintenance payments are incorporated into annual rental payments.

**CBF urges the Committee's FAVORABLE report on SB 414.** For more information, contact Robin Jessica Clark at rclark@cbf.org and 443.995.8753.

[1] Koehn, Steven W., Maryland Department of Natural Resources Forest Service, *Riparian Forest Buffer Survival and Success in Maryland*, April 2001.