Catoctin News
Newsletter of the Catoctin Group serving Carroll and Frederick Counties
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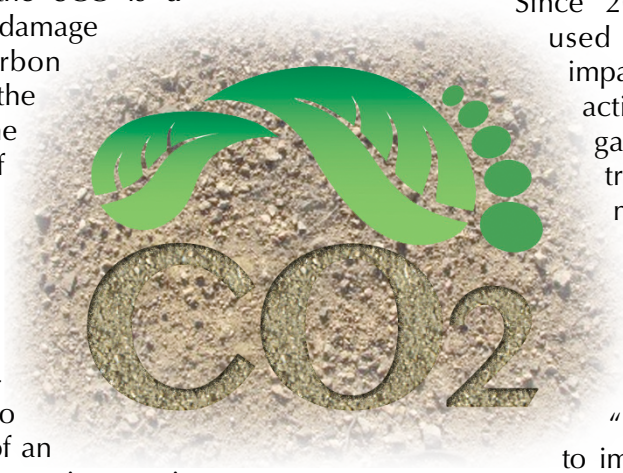
THE SOCIAL COST OF CARBON & CLIMATE BENEFITS of FREDERICK COUNTY FORESTS

By Paul Walker

"Scientists predict climate change will have severe consequences for society, like the spread of disease, decreased food security and coastal destruction. These damages from emitting greenhouse gases are not reflected in the price of fossil fuels, creating what economists call "externalities." **The social cost of carbon (SCC) is a metric designed to quantify and monetize climate damages, representing the net economic cost of carbon dioxide emissions.** Simply, the SCC is a monetary estimate of the damage done by each ton of carbon dioxide that is released into the air." (1) Or, a measure of the benefit of avoiding release of or sequestering a ton of CO2.



"Monetization provides much-needed context for otherwise abstract consequences of climate change. It allows decision-makers and the public to weigh all costs and benefits of an action—and to compare alternatives—using the common metric of money. Monetizing climate costs, therefore, better informs the public and "brings those effects to bear on [an agency's] decisions." (2)

The SCC is used to evaluate policies and guide decisions that affect greenhouse gas emissions. At the federal level, the SCC has been used by numerous agencies for regulatory impact analysis and in environmental impact statements. The SCC can also be used across a range of other areas, including electricity ratemaking, resource management policy and royalty setting, setting emissions caps, and establishing a carbon price. Federal and state agencies should use the SCC in any applicable context to aid in making rational and transparent policy decisions. Many states already use the SCC in decision making." (1)

The Biden administration recently directed use of the inflation adjusted, Obama administration value of $51 per ton as the SCC. An Executive Order signed Inauguration Day directs the Interagency Working Group to update the SCC by January, 2022. A review of literature indicates it will likely end up higher than $51/ton.

"Since 2010, federal agencies have used the SCC to analyze the impacts of roughly 100 federal actions that impact greenhouse gas pollution, from car and truck emissions standards, to mercury and other toxic pollutants from power plants to efficiency standards for household appliances." (3)

Eleven states, including Maryland, also use the SCC "in a variety of ways, including to improve decision-making about investments in their energy systems by properly accounting for the value of low carbon fuels and technologies." (3)

Using a $51/MT SCC, the **ANNUAL** value of Carbon benefits provided by Frederick County's 180,000 acre forest canopy (at 3MT/acre) is **$27.5M**. (4)

Recommendations to increase our canopy by ten percent by 2050, with active management of existing forest, could increase carbon sequestered to as much as 722,000/MT every year, increasing **ANNUAL** Carbon benefit to **$36.8M**, or 20% of County (2018) emissions of 3.61M/MT

These objective criteria should be incorporated in policy and capital decision making at all levels of government.

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Sources:

1. "The cost of Carbon pollution" FAQ EXECUTIVE SUMMARY, Institute for Policy Integrity, New York University School of Law **https://costofcarbon.org/faq/executive-summary**
2. "The cost of Carbon pollution" FAQ HOW AND WHY STATES SHOULD USE THE SCC?, Why should my state use the SCC? , See Baltimore G. & E. Co. v. NRDC, 462 U.S. 87 (U.S. 1983), at 96. ↩ Institute for Policy Integrity, New York University School of Law **https://costofcarbon.org/faq/how-and-why-states-should-use-the-scc**
3. "The true cost of carbon pollution - How the social cost of carbon improves policies to address climate change, how it's put into practice", Environmental Defense Fund **https://www.edf.org/true-cost-carbon-pollution** Copyright © 2021 Environmental Defense Fund. All Rights Reserved. Privacy policy
4. Carbon Estimator, US Chapter of 1 Trillion Tree Platform, **https://us.1t.org/** World Economic Forum and American Forests

Tree Solutions Now Act

Summary & Analysis (and SCCG Forest Campaign)

By Paul Walker

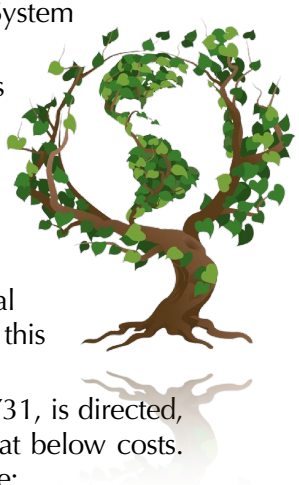
'Trees and forests are a critical nature-based solution to climate change', annually capturing '15% of current US carbon emissions from burning fossil fuels'.

Maryland's HB991, the Tree Solutions Now Act, became effective June 1, 2021. It funds, among other things, planting 5M native trees between FY '23 and FY'31.

This write up is based on the bill's Fiscal & Policy summary (1), and is intended to explain parts of the bill supporting a long-awaited study on forests, how planting funds will be allocated, and where responsibility lies for planning and reporting on progress.

The part of the bill reestablishing the definition of Forest Mitigation Banks and other parts are not included here.

I. Bill funds $300k for a Hughes Center study ending 12/23/2023. $150k of this is for mapping and surveying potential reforestation locations with Geographic Information System (GIS) data.



II. It establishes a Commission for Innovation and Advancement of Carbon Markets with 5 stated goals, most relevant, to develop plans to meet state Carbon mitigation goals by planting 5M trees, and creating a plan to insure maintenance, by 10/31/2022. Development of Carbon markets will provide incentive for landowners to keep and plant forests.

III. Separate funding of $1.25M for each of the nine years is provided for a MD Department of Environment 5M trees coordinator and 13 Department of Natural Resources Forest Service contractors. Score keeping and auditing is key, also for this group to do.

IV. Three buckets of funding totaling $15M over 9 years ($135M), from FY23 —> FY31, is directed, above existing tree-planting programs. 95% of funds provided is used to arrive at below costs. Here's how that breaks down and the big picture of where plantings will take place:

1. **Urban Trees Program: $10M annual, total 500,000 trees.**
   a. .95 x $10M= $9.5 M annual cost
   b. 500,000/9= 55,556 trees planted yearly
   c. 9.5M/55,556=$171/tree
   d. Calculating planting density in these areas is tricky, due to built infrastructure. Assumption is 100 per acre.
   e. 55,556/100=557 Urban acres annually
   f. Underserved, urban locations and planting criteria for same are defined in the bill's Article - Natural Resources 8-1911. (1), p. 14 - 16.

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2. **2010 Trust Fund Planting Public/Private Land: $2.5M annual, total 2,250,000 trees**
    a. .95 x $2.5= $2.375 M. annual cost
    b. 2,250,000/9= 250,000 trees planted yearly
    c. 2,375,000/250,000=$9.50/tree
    d. Typical planting density of 12′ x 12′ = 303 trees/acre.
    e. 250,000/303= 825 Public/private acres annually
3. **MDA/CREP planting on Ag Land: $2.5M annual, total 2,250,000 trees**
    a. .95 x $2.5= $2.375 M annual cost
    b. 2,250,000/9= 250,000 trees planted yearly
    c. 2,375,000/250,000=$9.50/tree
    d. Typical planting density of 12 x 12 = 303 trees/acre.
    e. 250,000/303= 825 acres of Ag land annually

Awesome News, Right?

The bill funds at least 2200 acres and planting 555,556 native trees for each of 9 years. Immense progress!

USDA's "Forests of Maryland 2019" (2) informs us Maryland loses 8,800 acres of forest annually. The bill offsets ONLY 25% of annual Forest loss. The size of the "hole" in state Forests, netting the annual benefits of HB991, works out to about 2m trees annually

Why so important? Besides impacts to clean water and biodiversity, "Trees and forests are a critical nature-based solution to climate change", annually capturing "15% of current US carbon emissions from burning fossil fuels". In Frederick County, the 180,000 acre forest canopy sequesters an estimated 540K/MT of CO2E emissions annually (15% of reported emissions).

The main mission of SCCG's Forest Conservation Campaign - an alliance of local environmental group members, land trusts, foresters, members of the forestry supply chain and concerned citizens - is increasing the county canopy by ten percent between 2023 and 2050: reforestation, afforestation, or rewilding of 640 acres annually. Doing this while implementing best forest management practices can increase CO2 emissions offset by county forests to 722k/MT annually.

Sources:

1. **https://trackbill.com/bill/maryland-house-bill-991-tree-solutions-now-act-of-2021/2018306/**
2. USDA Forest Service. 2020. Forests of Maryland, 2019. Resource Update FS-246. Madison, WI: U.S. Department of Agriculture, Forest Service. 2p. **https://doi.org/10.2737/FS-RU-246**
3. US EPA (2020) Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2017. EPA 430-R-20-002. Washington, DC: United States Environmental Protection Agency.

CEMWG FINAL REPORT

By Barb Trader

The Final Climate Emergency Mobilization Workgroup (CEMWG) Report will be Publicly Available August 17th. See articles on this subject in the Winter 2020 and Spring 2021 of the "Catoctin News" **Catoctin Group Newsletters | Sierra Club**.

CEMWG, authorized by the Climate Emergency Resolution adopted by the Frederick County Council and Frederick City Aldermen in 2020, is finalizing its recommendations now. See articles on this subject in the Winter 2020 and Spring 2021 of the "Catoctin News" Catoctin Group Newsletters | Sierra Club.

The CEMWG final report will be posted on August 17th, and presented to the County Council during a workshop at 5:00 PM on August 24th. Sierra Club members are encouraged to review the final report and submit comments to the County Council by August 24th, by email or oral comments at the end of the workshop. The City Aldermen will host a workshop in September (tentatively Sept. 29th) and comments from City residents are also encouraged.

The report will be posted on August 17th here (**https://www.frederickcountymd.gov/6511/Agendas-and-Minutes**), linked from the agenda set for 8-24. Directions for observing and offering comments during the workshop are also posted here. The

MOBILIZE FREDERICK
CLIMATE EMERGENCY MOBILIZATION WORKGROUP

Our Precious Water: from the Mountains to the Bay and Beyond

By Christine Maccabee

Human beings are a part of nature, not apart from it. Ecological understanding of how everything is interconnected should be included in everyone's education. Sadly, I personally never learned it in school , though innately I felt the connection through my love of nature; plus my parents were involved in the Better Air Coalition in Baltimore, so through them I had an even greater awakening in my early twenties.

Not only are we all connected to the natural environment, in many intricate ways, our consumerism profoundly affects the quality of air, land and water and ultimately life on the entire planet. In Maryland, Pennsylvania, West Virginia and Virginia, our habits and lifestyle choices, our cars and livestock, modern technologies, such as plastics, and extensive development, all affect the health of people, crabs, oysters, turtles, you name it, downstream to the Chesapeake Bay and the Ocean.

In an article written by Whitney Pipkin for the Chesapeake Bay Journal, "swimming in streams and stormwater runoff can be hazardous to your health" and that of aquatic animals. A frequent concern is E. coli bacteria, which is present in high numbers after a rainfall which can flush animal waste and raw sewage into the water. Several years ago, Upper Potomac River Keeper Brent Walls made a documentary about this problem, citing the run-off from cattle allowed to roam right up to, and into, the water. Legislation is underway to restrict livestock within a certain footage of river and stream banks, but it's not an easy battle.

In that same documentary, I was shocked to learn of how coal mining holding ponds are overflowing and polluting resident's wells. Home owners have to buy bottled water, have developed related health problems, and some have been forced to move away from their homes. Chemicals are a huge problem in our ecosystem, whether used as intended or accidentally spilled. Those used in fracking, for example, can be very harmful to the water table. In a local example of surface water contamination, waste from a paper mill was being discharged into the Potomac killing aquatic life for a stretch of one mile. Fortunately, the paper mill has closed. It certainly would not have been safe to wade, swim or play in waters downstream from that! And then there is the issue of water runoff. From suburban areas with small lawns to larger acreages of crops, where some people use pesticides, herbicides and chemical fertilizers, the run-off after heavy rain runs quickly to the sewers, streams and rivers, and ultimately poisoning the Chesapeake Bay and Atlantic Ocean.

These are some of the starker examples of mankind's interrelationships with the environment and how they affect water quality and availability. Consider the myriad mundane aspects of life such as impacts of toilet flushes, watering lawns, detergent choices and littering at a favorite fishing hole. Humans have very bad habits that reach far beyond their daily decision making.

During the Trump administration, federal water pollution regulations were loosened. That must change and hopefully environmental concerns will be better regulated under the present administration and the work of environmentalists. As the population grows, and the need (and desire) for paper, gas, oil, food and innumerable consumer products increases, I and others fear for the on-going quality of human, aquatic and plant life, both here and downstream. We must understand that everything we do has potentially negative effects on the water. Everything humans do is inextricably interconnected.

These lines from my favorite patriotic song encapsulate my sentiment exactly:

From the mountains, to the prairies,
to the oceans white with foam.
God Bless America, my home, sweet home.

Four Questions to Ask About Going Solar

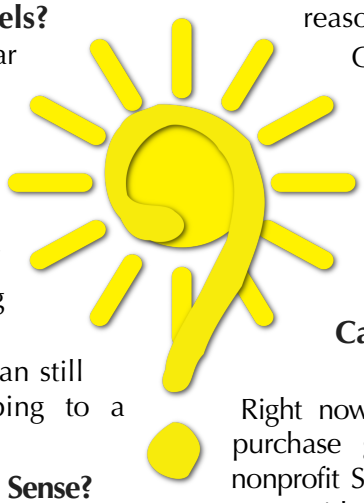
By Kimberly Armstrong

While the sweltering summer heat has us looking forward to fall, the sun has one undeniable benefit: it can pay your electric bills year-round!

Solar electricity is abundant, accessible, and can save homeowners money while supporting clean energy. More than a million U.S. homes have solar panels. If you're wondering if you should be next, ask yourself these four important questions.

Is Your Roof a Good Fit for Solar Panels?

The portions of your roof where solar would be installed should be free of shade for most of the day. A south facing roof is ideal, since it results in the largest amount of sunlight for your panels to collect. If your roof faces east or west, you can expect them to produce about 75% of the energy of an array on a south facing roof.



If your roof isn't great for panels, you can still benefit from solar energy by subscribing to a community solar project.

Does Going Solar Now Make Financial Sense?

At the average price of under $3 per watt, a medium sized system of 5 kilowatts will cost about $15,000. With this year's solar Investment Tax Credit (ITC) extension and Maryland's state incentives, now is a great time to consider solar energy.

The ITC is an incentive offered by the federal government. This credit is awarded when you file your taxes for the year your solar panels were installed. The ITC was set to end in 2021, but it was extended until 2023.

At the state level, the Maryland Energy Administration offers grants for families going solar. Grants of $1,000 per project are awarded on a first come first served basis for primary residences not located in a historic district. Maryland also allows solar owners to receive Solar Renewable Energy Credits (SRECs). Solar owners can sell their SRECs to utility companies to help them meet Maryland's sustainability requirements.

Is Using Solar Energy in Line With Your Goals?

Installing solar panels on your home empowers you to reduce air pollution and greenhouse gases. And protecting the environment is just one of many good reasons for considering going solar.

Other reasons you might want to go solar include:

- Saving money on electricity costs
- Gaining energy independence
- Helping create good local jobs
- Advancing energy democracy and equity

Can You Get Help Through the Buying Process?

Right now in Maryland, there are two active solar purchase groups, called solar co-ops. Hosted by nonprofit Solar United Neighbors (SUN), the solar co-ops provide guidance to those looking into solar energy.

These solar co-ops also offer access to a discounted group price for solar installations. Joining the solar co-op is free and doesn't obligate members to purchase solar. Instead, members will have the option to individually purchase panels—and electric vehicle chargers—from the selected installer.

Learn more about solar energy and the co-ops at:

https://coops.solarunitedneighbors.org/coops/montgomery-county-and-prince-georges-county-solar-and-ev-charger-co-op/

https://coops.solarunitedneighbors.org/coops/md-northern-md-2021-solar-and-ev-co-op/

https://www.solarunitedneighbors.org/maryland/

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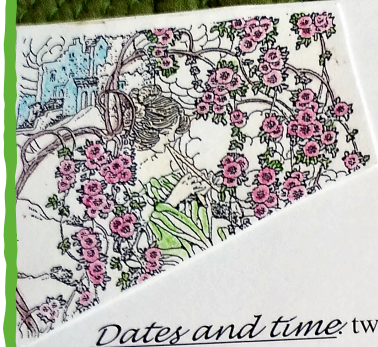
SIERRA CLUB

Further Information

http://www.sierraclub.org/maryland/catoctin-group

Celebrate the Magic of Mystic Meadows



You are invited to come to a
Celebration of Diversity among
the fields, flowers and
friends
of MYSTIC MEADOWS !

~ ~ ~

Dates and time: two Saturdays, June 26 or July 3rd, 3pm til 9pm
Address : 6962 Eylers Valley Flint Rd. off 550 N. towards Sabillasville
Schedule :

3-4 Quiet time in gardens so as to immerse yourself in natural sights, sounds and perfume of flowers (no talking please)
4-5 A guided tour by Christine discussing the many wild and domestic plants and to answer questions.
5-6 Time to share food out on the deck
6:00 or so - Quiet time again to hear lovely evening sounds.
7-9 Music on deck or in house for listening audience, or just wander.

~ ~ ~ ~

This schedule is set up as a way for you to have full appreciation of the beauty of this wonderful mountain valley and the gardens of Mystic Meadows. All my life I have had a deep interest in plants and insects, so when I came here 30+ years ago and saw the field with no trees I began to explore what was in the soil... the seeds of wild plants and roots of trees. Allowing the wild plants to grow I discovered amazing diversity and began identifying and preserving them as habitat for pollinators and birds. I also grow heirloom vegies, blueberries, garlic, etc. in between the wild plants (permaculture method) and plant seeds I save from year to year.

I hope you will be able come for the entire event, but please do come at anytime you are able. It is particularly important, however, not to talk if you come between 3-4. If you come after 4 feel free to join in the tour.

For the Earth, with Love,
Christine

Please RSVP at songbirdschant@gmail.com or 240-675-4935 and if not able to come either date, feel free to call for a visit any time !