



## Carbon Sequestration Policy in Virginia

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# Topics

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1. **Choices:** considerations of private forest landowners in Virginia
2. **Markets:** the role of Virginia's forest products industry in carbon sequestration
3. **Options:** prospective policy options to support, improve carbon sequestration

# Choices: Virginia's Landowners

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- **Critical Mass:** more than 4/5ths of Virginia's *finite forest resource* is privately-owned
- **Different Strokes:** Individuals and families own for land for different reasons. According to the Family Forest Research Center, top reasons include:
  - Aesthetics or nature
  - Privacy, home or farm
  - Family legacy
  - Hunting or outdoor recreation
  - Land investment
  - Timber production
- **FFRC:** Only 3% have active forest management plans

# Choices: Income Sources

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Unlike other land use types, significant monetization of forest land is generational and/or multi-generational. More consistent income sources are available, but less significant.



**Forest Products**



**Agroforestry**



**Recreational Access**



**Ecosystem Markets**

# Choices: Cost of Ownership

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With little income, Virginia landowners take on considerable annual expense to own and actively manage forestland

## Passive Ownership

- Mortgage Payments
- Real Estate Taxes
- Liability Insurance
- Legal & Accounting Fees

## Maintenance

- Forest Management
- Clean-Up & Recovery
- Nuisance Control
- Consultants

## Improvements

- Land Acquisition
- Tree Planting
- Functionality: Bridges, Roads, Culverts, Firebreaks, etc.



# Choices: Internal Risk Factors

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Whatever the reason(s) for owning forestland, landowners assume considerable risk. **Internal risks** cannot be eliminated, but effects can be minimized, and the duration of impacts shortened through preparation and sound management.



**Overpayment /  
Under Valuation**



**Liquidity /  
Merchantability**



**Unexpected  
Costs**



**No Risk  
Premium**

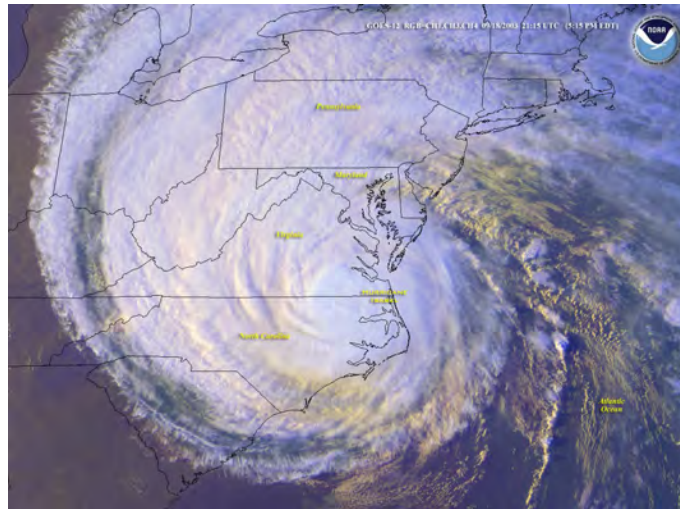
# Choices: External Risk Factors

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**External risks** arise from variables that are beyond the control of the landowner. Unlike internal risks, it is extremely difficult and sometimes impossible to lessen the effects of external risk through sound management decisions.



Market  
Disruptions



Natural  
Disasters



Pest &  
Disease



Political  
Risks



# Influencing Important Choices

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The vast majority of ecosystem benefits derived by the Commonwealth from forests are provided by individuals and families that manage great complexity and risk.

Public policy to support private forestland ownership, to keep Virginia's forests as forests, should be incentive-based. Such policies should:

- **Improve Return on Investment**
- **Reduce Cost of Landownership**
- **Mitigate Internal/External Risk**



# Markets: Forest Products & Carbon

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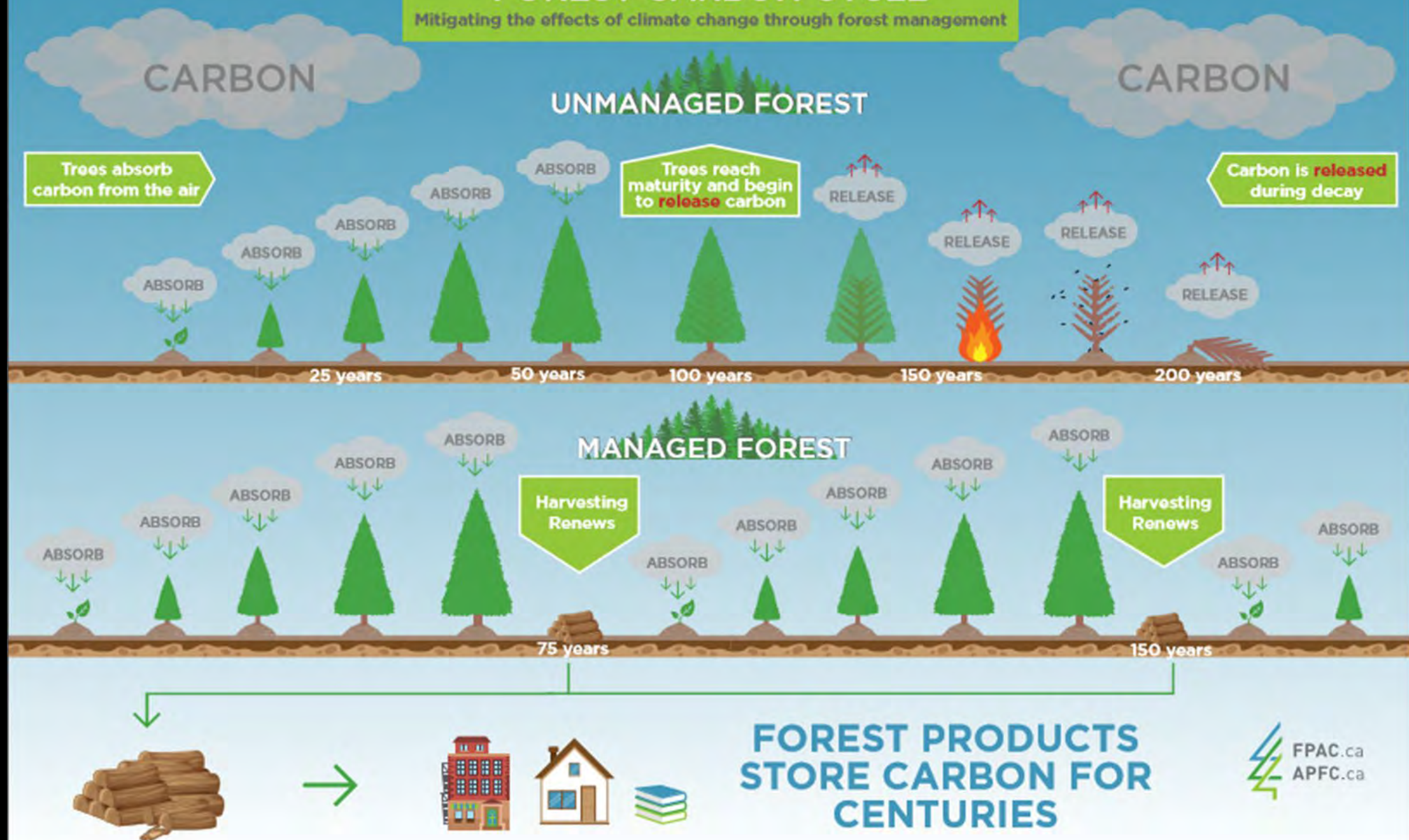
Forests are, perhaps, the clearest illustration of how economic, environmental, and social benefits are not exclusive of one another. Consider the **Triple Bottom Line**:

- Expanded markets for carbon-storing forest products *increases* industry's financial returns, benefits landowner ROI
- Additional income *increases* landowner incentive to own & more actively manage forestland
- Improved forest management yields *increasing* forest performance & environmental benefits
- Awareness of social and environmental benefits of carbon-storing (and avoiding) products *increases* consumer demand



# FOREST CARBON CYCLE

Mitigating the effects of climate change through forest management





## The closed loop of FOREST CARBON in the ATMOSPHERE

# Carbon Cycle

Fossil fuel use is an **OPEN SYSTEM** where  $\text{CO}_2$  remains in the atmosphere.

**Wood products** can store carbon and can **substitute** for emission-intensive products such as concrete & steel.



**Bioenergy** from forest biomass can **substitute** for fossil fuel energy.

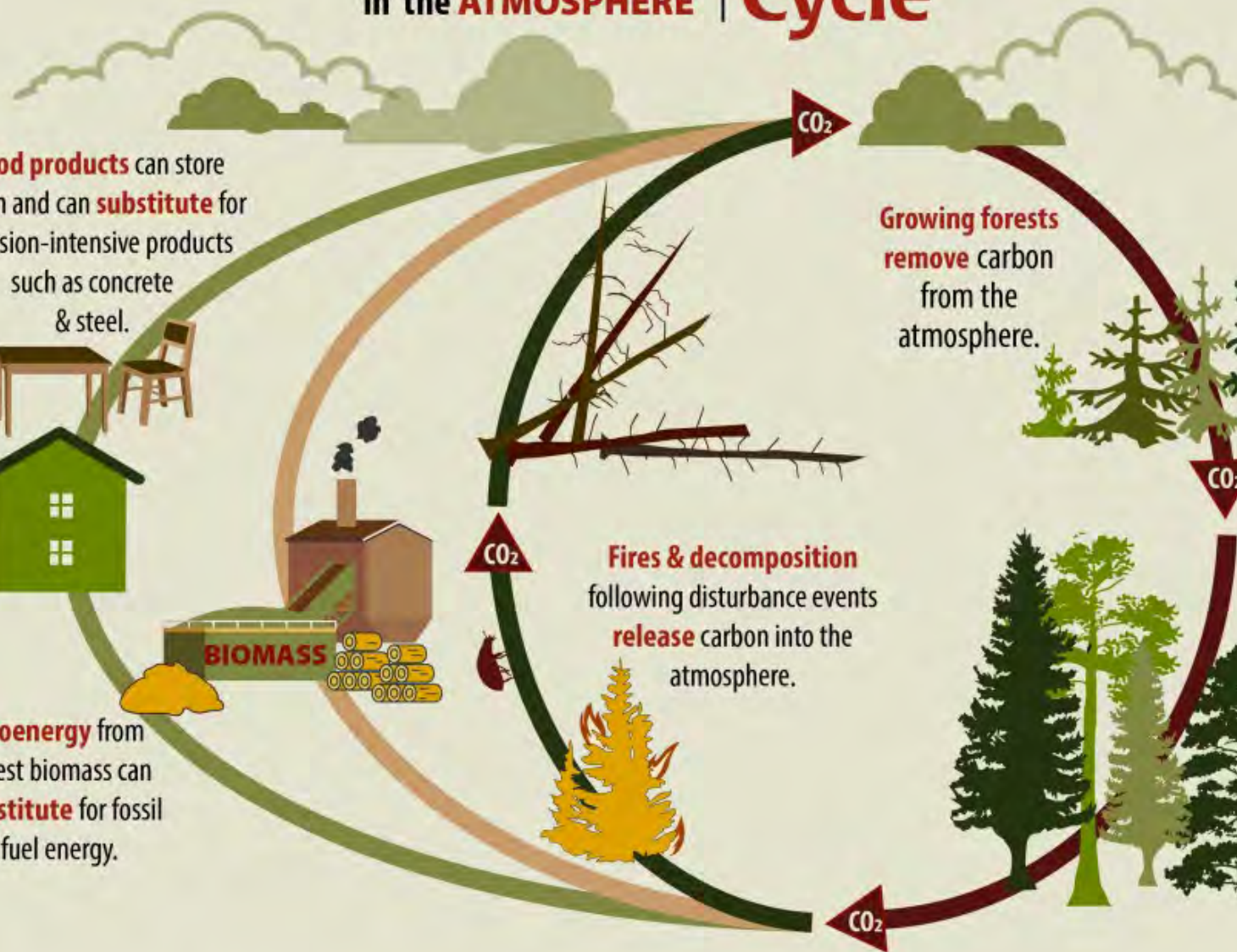


**BIOMASS**

**Fires & decomposition** following disturbance events **release** carbon into the atmosphere.



**Growing forests** **remove** carbon from the atmosphere.

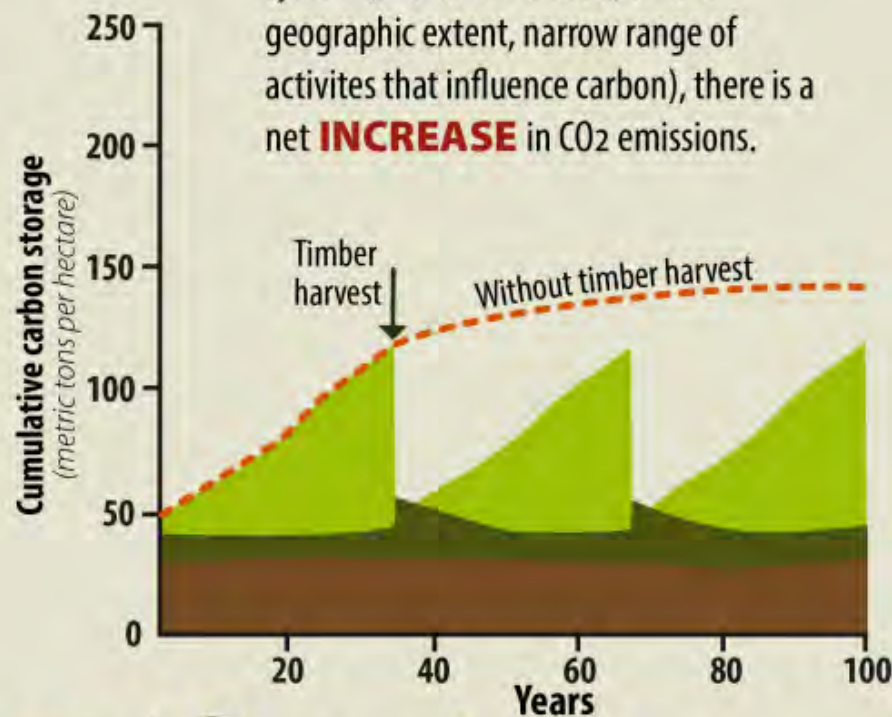




## Carbon BENEFITS in the Broad View

# How Carbon Stacks Up

In the **NARROW VIEW** of the forest system (shorter time scale, smaller geographic extent, narrow range of activities that influence carbon), there is a net **INCREASE** in CO<sub>2</sub> emissions.



Soil



Litter



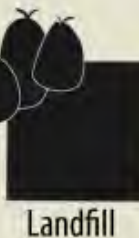
Trees



Long-lived  
forest products



Short-lived  
forest products



Landfill

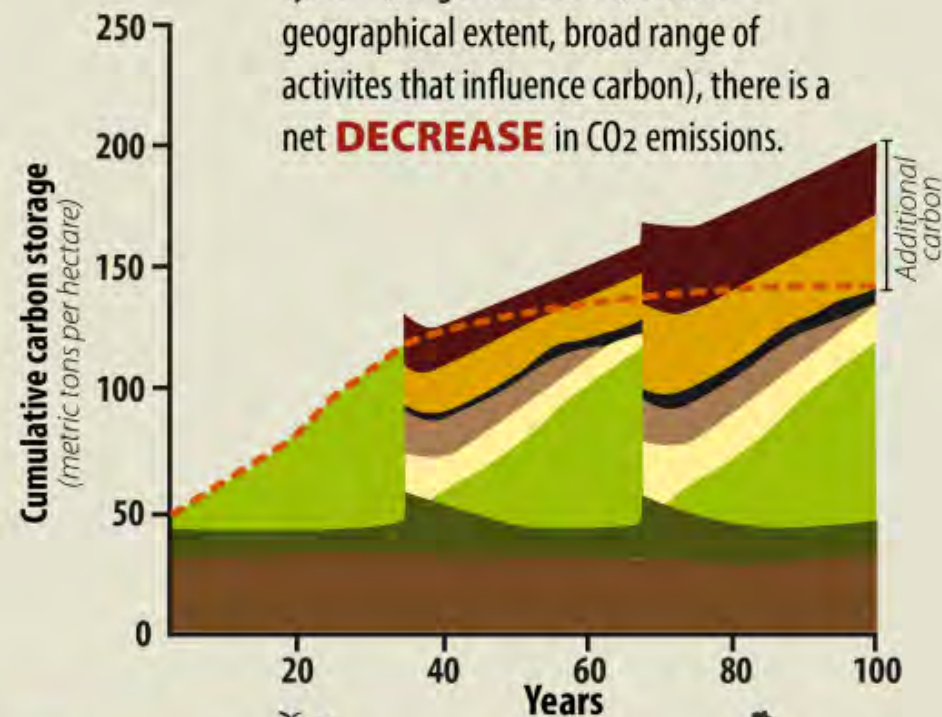


Product  
substitution  
(building materials)



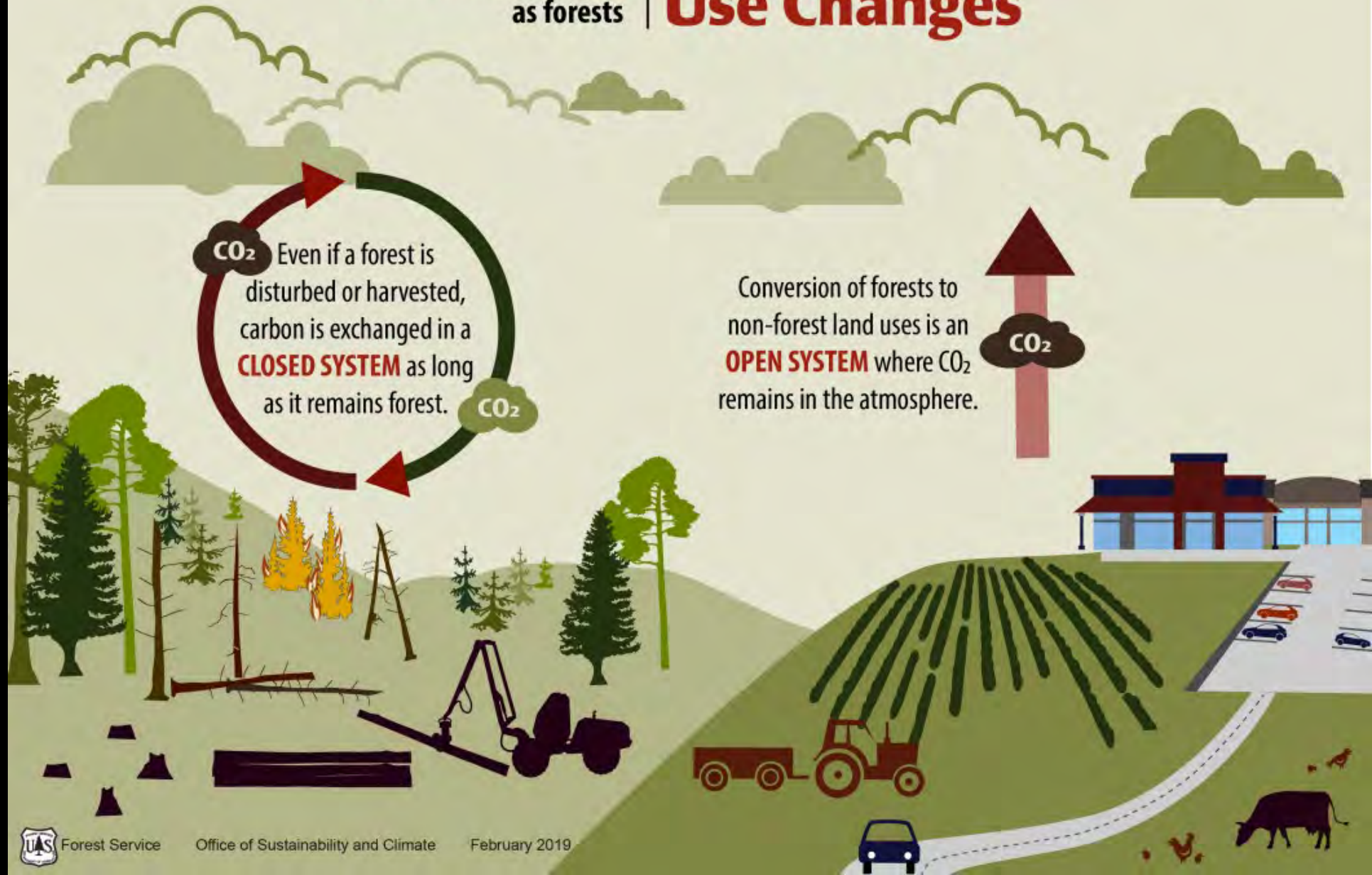
Energy  
substitution  
(bioenergy)

In the **BROAD VIEW** of the forest system (longer time scale, broader geographical extent, broad range of activities that influence carbon), there is a net **DECREASE** in CO<sub>2</sub> emissions.



The importance of  
**KEEPING FORESTS**  
as forests

# Carbon & Land Use Changes







✓ AVOIDANCE

✗ SEQUESTRATION

Virginia Energy (9/2021): 58% of acres converted by active solar facilities are on previously forested land.



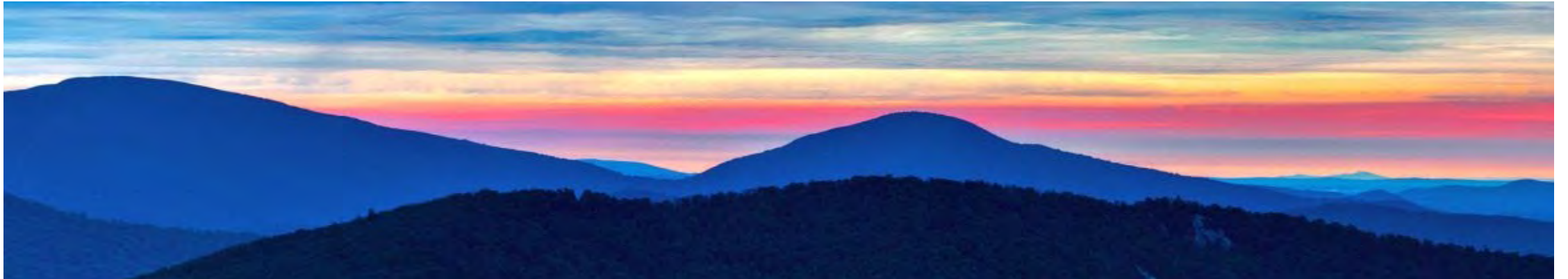
# Options: Review of Current Policies

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Questions: Are Virginia's policies aligned to support carbon sequestration?

**Answer: Not entirely, but not completely bereft of carbon benefits.**

The last few sessions of the Virginia General Assembly has resulted in public policy that impacts the sequestration capacity of our forest resource, both positively and negatively.



# Options: Beneficial Current Policies

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Recently-adopted policies that are beneficial to carbon sequestration include:

## **Forest Sustainability Fund (2022)**

Incentivizes localities to adopt/retain forest land use taxation, reducing landowner cost

## **Beneficial Hardwood Management Tax Credit (2022)**

Provides non-refundable tax credit for implementing hardwood practices w/in forest management plan

## **Solar Mitigation: Permit-by-Rule (2022)**

Requires developers to mitigate for adverse impacts to forest land, consider ecosystem benefit loss

## **Hardwood Forest Habitat Initiative (2021)**

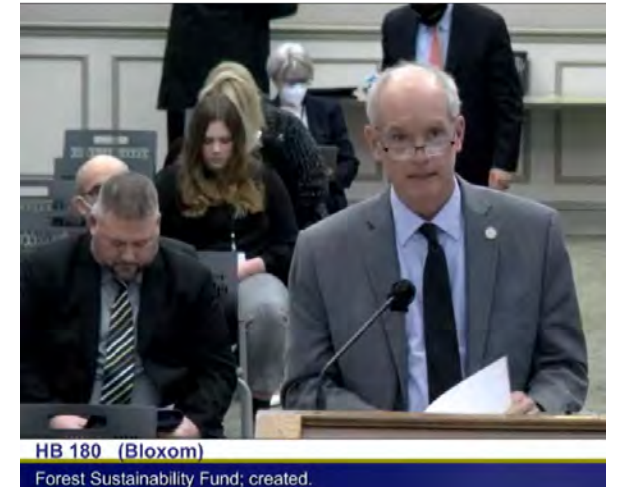
Provides landowner cost-share assistance to improve hardwood management for multiple benefits

## **Healthy Watershed Pilot Project – Orange, Essex Counties (2018-19)**

Allows for localities to aggregate fragmented forest land holdings for participation in ecosystem service markets

## **Natural Resources Budget (Ongoing)**

Increased funding for conservation, watershed health, other indirect impacts that improve forest health



# Options: Adverse Current Policies

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Recently-adopted policies that are adverse to carbon sequestration include:

## Virginia Clean Economy Act (2020)

1. Eventual phase-out of biomass from renewable portfolio standard removes critical market for unmerchantable trees, forest slash, and mill residuals
2. Unique reliance on two primary renewable technologies (solar, wind), in contrast to other PJM states relying on multiple carbon-neutral technologies, has led to rapid solar development and deforestation

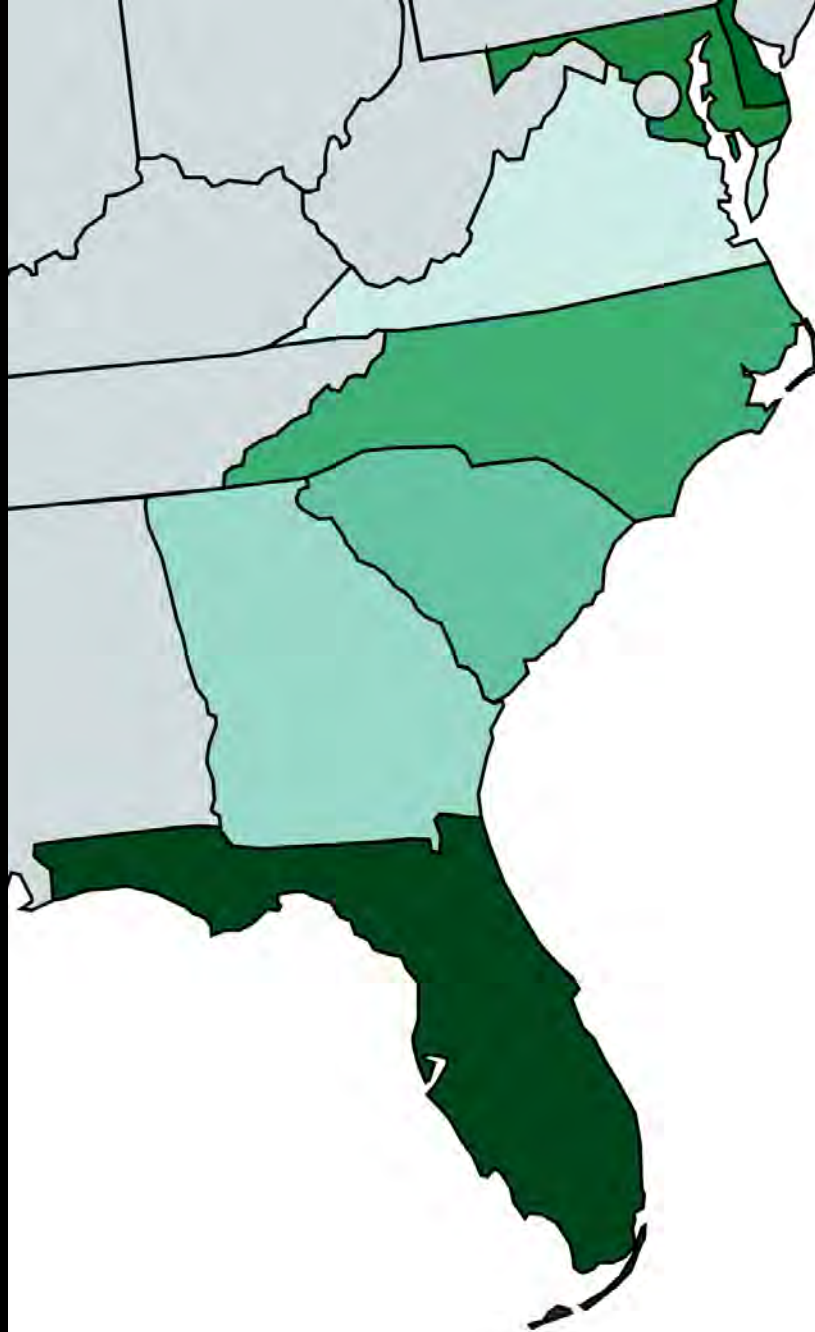
## ConserveVirginia (2021)

Though well-principled, CV's incorporation of the forestry data layer undervalues working forests, overemphasizes water quality and habitat benefits, and does not specifically capture carbon sequestration value of Virginia's forest resource

## Virginia Department of Forestry Funding (Ongoing)

2022 investments notwithstanding, funding for the Virginia Department of Forestry is comparatively meager





### State Forestry Budget/Acre

|    |                |
|----|----------------|
| FL | - \$6.21/acre  |
| DE | - \$4.59/acre  |
| MD | - \$3.88/acre  |
| NC | - \$3.51/acre  |
| SC | - \$3.10/acre  |
| GA | - \$2.52/acre* |
| VA | - \$2.31/acre  |

# Policy Options: Potential Changes

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Question: What changes are needed to streamline our efforts?

Answer: Incentive-based policies for forest landowners, forest products operations will generate positive carbon sequestration benefits.



Improve ROI



Reduce Cost



Manage Risk

# Policy Options: Improving ROI



## Improving Fiber Markets

### Example: Forest Opportunity Roadmap / Maine (FOR/Maine)

FOR/Maine is unique cross-sector collaboration between industry, communities, government, education, and non-profits, that aims to assist the state adapt and capitalize on changing markets. The collaborative's five goals include:

1. Sustain and grow Maine's existing and emerging forest products economy
2. Manage the wood resource using sustainable and responsible forest management
3. Prepare workforce for the future of the forest products economy
4. Increase prosperity in forest economy communities, especially those in rural Maine
5. Organize the forest industry with committed public sector partners to implement

**Analysis:** *Virginia's previous efforts aimed at wood utilization & economic development have been disjointed. A well-funded collaborative effort between DOF, VEDP, VT, and industry would allow for a more collaborative approach to these goals and increase CO2 capacity of forests & products.*

# Policy Options: Improving ROI

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## Improving Fiber Markets

### Restoring, Expanding Use of Carbon-Neutral Wood Biomass

Recent changes to the Commonwealth's energy policy have caused the treatment of biomass energy to fall out of alignment with sound climate science. These changes have also expedited the conversion of forested lands to solar, removing carbon sequestering capacity, and created misalignment with the multifaceted renewable portfolios of other RGGI states/states operating in the PJM Interconnection Region.

This has led to great uncertainty and concern within the forestry and forest products community.

**Analysis:** *Biomass energy is frequently generated using mill residuals that would otherwise be landfilled or slash that would otherwise be left on the forest floor to decompose. Because the use of wood biomass in closed forest systems provide significant emission avoidance and result in improved forest management, wood biomass is widely considered to be carbon-neutral or carbon-beneficial.*





# Policy Options: Improving ROI

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## Improving Access to Ecosystem Markets

**Example:** Georgia Carbon Sequestration Registry

The Georgia Carbon Sequestration Registry is a non-profit program established in 2004. The purpose is to provide landowners, municipalities, and public and private entities with an official mechanism for the development, documentation, and reporting of carbon sequestration projects undertaken in Georgia. Participation is completely voluntary. Last year, the Georgia General Assembly expanded the registry to Georgia's to include building products that sequester carbon.

The Registry aims to: enable the voluntary reporting of carbon sequestration projects undertaken in a transparent and uniform format, facilitate the emerging market for carbon offsets, promote all environmental markets that recognize the important ecological, social, and economic values of forests, generate new economic incentives for Georgia's forest owners.

Importantly, the Registry is not a market platform. It is designed for reporting carbon sequestration activities, but does not purchase "carbon credits" or administer financial transactions.

**Analysis:** Such a registry in Virginia could provide technical assistance, verification to better enable forestry community to participate in voluntary markets. Utilizing state lands to serve as a risk buffer for private landowner participation in markets is also recommended.

# Policy Options: Reducing Cost

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## Improving Affordability of Private Forest Landownership

Existing policy and recently-passed legislation aims to reduce the costs associated with owning, maintaining, and improving privately-owned forestland. Robust and consistent funding upon which stakeholders can rely is imperative to the success of these programs...and ultimately to the carbon sequestering capacity of Virginia's forest resource:

- **Forest Sustainability Fund**
- **Beneficial Tax Credit for Hardwood Management**
- **Reforestation of Timberlands Program (Pine)**
- **Hardwood Habitat Initiative (Hardwood)**
- **Water Quality Improvement Program**



# Policy Options: Mitigating Risk

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## Recovering from External Risks

### Example: Invasive Plant Control Program

The Invasive Plant Control Program (IPCP) is a forestry program administered by Georgia Forestry Commission and funded by the U.S. Forest Service. Forestry practices covered include the use of herbicides (or a combination of mechanical and herbicide treatments) to eradicate nonnative, invasive plants.

Private, non-industrial landowners who own at least 10 acres of forested land and can provide a practice area of at least 3 acres are eligible to participate in Georgia's IPCP Program. Participants receive a rate of \$60 per acre for areas treated.

**Analysis:** *There are a combination of factors that have resulted in the deteriorating health of Virginia's forest resource, but few as impactful as the proliferation of invasive species. Improved forest health directly increases the carbon capacity of forests. Unfortunately, the eradication of invasives is costly and time-consuming for private forest landowners.*

# Policy Options: Mitigating Risk

## Recovering from External Risks

### Example: A Framework for Forest Disaster Relief

In 2018, Hurricane Michael struck Georgia as a Category 4 storm. The Georgia Forestry Commission's damage assessment showed that 2.3 million acres of forestland were impacted with 20 million tons of pine and 17 million tons of hardwood damaged at an estimated value of \$762 million.

In response, the Georgia General Assembly created the **Forest Debris Management Program (FDMP)** to assist forest landowners with their recovery and salvage efforts. This included: emergency disaster relief assistance for cleanup efforts for timberland owners, emergency funding for state agencies and local governments in heavily impacted areas, and a tax credit for timber growers who incurred significant damages and expenses due to the storm. The cost of debris management was shared at a rate of 80 percent FDMP and 20 percent landowner with maximum payment limitations possible.

**Analysis:** *Like certain ag commodities, forest landowners would benefit from the establishment of a disaster relief framework that can be activated by the Governor outside of regular session. Prompt debris clean-up, timber salvage (6 wks.), and forest restoration are vital to restoring carbon capacity.*





# Virginia Forests Matter

**STATEWIDE**  
ECONOMIC IMPACT

**\$21 BILLION**

**16 MILLION ACRES**



**107,900 JOBS**



**\$16 BILLION**  
**ECOSYSTEM SERVICES**

**405,000 Private Owners**



