



# PennState

Department of Ecosystem Science and Management  
Pennsylvania State University

## Goddard Forum: Visioning Climate-Smart Forestry in the Mid-Atlantic Region

Wednesday, October 16, 2024 – see below for program and participants

### *Summary of discussions*

#### **Plenary**

- Climate-smart forestry entails a process of multi-objective management, prioritizing but not limited to the **mitigation objective** of management of carbon in biomass, soil, and wood products
- An operational **definition of climate-smart forestry** (DeLyser et al. 2022; Papa et al. 2023)\* is as follows:
  - *Maintain and increase forest extent through reducing deforestation, afforestation, and silvopasture.*
  - *Protect the ability of forests to naturally regenerate and foster forest diversity by controlling deer browse and restocking understocked stands where it is ecologically appropriate to add more trees.*
  - *Encourage sustainable practices on private lands, e.g., by reducing high grading, an ecologically damaging practice which encourages landowners to harvest the largest and most valuable trees from their forests and leave only smaller or stunted trees behind.*
  - *Increase forest carbon stocks while sustaining timber supply by extending rotations to optimize tree growth.*
  - *Prepare for potential negative impacts of climate change, especially from increasing forest pests and diseases.*
- Climate-smart forestry does not equal no harvest
- Protecting carbon for the long term relies on adaptatively managing long-term risk
- Hardwood markets are not successful without demand; we don't need to constantly reinvent the wheel to reach our public, we can tap into existing networks; don't reinvent the wheel, wood is good
- There is consensus among different perspectives, but variation exists among states, ecosystem types; no one size fits all.
- It's best to keep forests as forests

---

\* DeLyser, K., Papa, C., Clay, K., Gadoth-Goodman, D., Cooper, L., & Ontl, T. (2022). Impact of Forest Management and Wood Utilization on Carbon Sequestration and Storage in Pennsylvania and Maryland. American Forests, NIACS, USDA Forest Service, Michigan State University.

Papa, C. C., DeLyser, K., Clay, K., Gadoth-Goodman, D., Cooper, L., Kurz, W. A., ... & Ontl, T. (2023). Modeling climate-smart forest management and wood use for climate mitigation potential in Maryland and Pennsylvania. *Frontiers in Forests and Global Change*, 6, 1259010.

### ***Take-home messages***

- Pennsylvania and climate-smart forestry – leading by example:
  - It's a big timber state
  - We do climate-smart forestry
  - We have consulting foresters and extension that can help
  - We don't ignore our forest under climate change, we take care of our forests and the people that depend on them
  - Climate-smart forestry and carbon don't mean you don't cut wood

### ***Plenary discussion*** notes – Patricia Leopold

- Advancing the co-benefits of climate-smart forestry through research and extension in PA Forests. We need to understand the co-benefits of carbon and focus on smaller landowners in order to make a difference on the landscape.
- The room reflected a diversity of perspectives from industry, state, federal, and climate service providers.
- We seem to have common goals, even if we're operating under different governing frameworks or disciplines: empirical data, social science, policy, economics.
- There is evidence of increasing public will, but without the means to act on that willingness.
- The challenges and opportunities are grounded in people and teams
- Folks are opting out of carbon markets due to extreme administrative burden of proving additionality, but also because it doesn't seem to credit the people who have been the right thing all along.
- Intentionality is important. No answer is the universally "right" answer, but showing your work will justify what's important, what's at risk, and the actions that are needed to minimize risk or take advantage of incentives or opportunities.
- Need to be explicit when we're talking about managing for timber that we're talking about specific places, while other places (e.g., protected or special places) is NOT what we're talking about.
- The biggest barriers to private landowners in participating in carbon markets is managing interfering plants and deer browse.
- Climate-Smart Forestry (CSF) as a term is not being defined and thus contributing to confusing messaging. Sustainable Forest Management (SFM) seems to be the prevailing gold standard, and CSF can be the specific ways that you implement carbon and climate change principles in SFM. But if CSF is not well-defined and the conversation well-rounded, it tends to be dominated by discussion around economic benefits rather than a variety of ecosystem services. This is problematic because of the scale and time of carbon cycling and the importance of climate adaptation in minimizing future carbon emissions due to natural disturbance, especially wildfire.

- Raju et al. takeaway: forest management and wood utilization can provide substantial mitigation benefits without disrupting timber supply; extending rotations can create challenges if logs are too big for sawmills.
- Social vulnerabilities can also contribute to declining cover if new development is needed for housing.

### ***Breakout groups***

#### Carbon management challenges on private forest lands

Kenny Kane, Allyson Muth, Kripa Neupane, Raju Pokharel, Matt Keefer

Challenges Discussed:

- Size of parcel (many, many small property owners),
- Lack of Knowledge about the complexity of the system they own and manage,
- Many private forests are already degraded,
- Trust barriers,
- Conservation versus preservation mindset,
- Absence of forest management plans – not engaging professionals to guide the management process,
- Professional availability and capacity – compared to the number of woodland owners, there are very few professionals to assist them. Pennsylvania’s number of NRCS TSPs has declined in recent years.

Strategies Discussed:

- a. Focus on building professional capacity and availability of resources.
- b. Develop education and awareness opportunities to increase knowledge and move people towards science-based decision making (but starting around the why and how of forest management first).
- c. Investigate other forest management strategies to support carbon payments to landowners who are restoring healthy forests.

Expanding the group’s strategies based in recent research, other strategies include:

- a. Providing smaller landholders access to resources and technical support tailored to their needs
- b. Implement workshops, webinars and online courses focused on carbon management, upfront management costs, sustainable forestry and financial incentives available to landowners
- c. Work on building trust relationships with carbon program developers and private forest landowners- with high standards of accountability and transparency, and clear application process.

#### Hardwoods tracking for long-term carbon sequestration

Amy Shields, Melissa Kreye, Chad Papa, Kenny Kane, Raju Pokharel

- Tracking tech: QR codes and blockchain can enhance transparency for organizations without needing certified forests. SFI certifications can aid tracking, though barriers exist for FFO.
- Quality Levels: There are various quality tiers and mixed credit brands in the market. Consultants benefit from promoting Climate Smart Hardwood Products (CS HWP), leading to alternative financial strategies beyond high grading.
- NRCS Support: The NRCS offers content for management plans that enhance Sustainable Community (SC) practices and encourages consultants to qualify as technical service providers. NRCS prioritizes CSF activities for their co-benefits.
- Carbon Accounting: Improved carbon accounting and efficiencies are recognized in the HWP value chain, with incentives promoting reshoring of hardwood manufacturing to reduce carbon footprints.
- Transparency Tools: Landowners utilize tools for accountability in climate smart practices. Low-grade wood offers an additional revenue stream linked to sustainability benefits.
- Tax Incentives: Programs like “clean and green” encourage landowner enrollment in climate smart HWP certifications. Markets for low-grade wood and residues, such as sawdust, provide substitution benefits.
- End-of-Life Scenarios: Broader discussions include tertiary markets for wood products.
- Awareness of Benefits: Consumers recognize the climate benefits of HWP and their connection to forest health. Behavior influences ownership of forest health.
- Incentives for HWP: There is growing consumer interest in HWP, comparable to low-energy appliances, bolstered by media campaigns.
- Design Influence: Interior designers and architects promote HWP as high-status materials. Co-branding aligns with national campaigns to enhance the message that HWP is eco-friendly.
- Regulatory Support: Building codes favor CS HWP, and zoning laws facilitate smoother harvests and transportation.
- Community Engagement: Local initiatives, like producing biochar from residues, connect industries and communities.
- Carbon Programs: There’s pride in the wood utilization outcomes promoted by various carbon programs, highlighting a sustainable approach to resource use.

#### Non-timber carbon storage

Ryan Lee, Margarita Fernández, Sarah Hall,

- Conversion of ag lands, dairy lands and abandoned mine fields to reforested areas are crucial for carbon sequestration

#### Stakeholder participation including non-forest owners

Susan Stout, Patricia Leopold, Andrea Pfaff, Abriti Moktan

- Identification of “Stakeholders” is a crucial first step towards the goal of their engagement and participation in forest management practices.
- Clear and consistent key messages, definitions and benefits associated with Climate-Smart forestry are needed before reaching out to the stakeholders. Also, the values of climate-smart forestry should include more than just carbon; they must incorporate all the additional elements, such as resilience, as well.
- Social media can be used for more personalized and targeted communication with the stakeholders.
- AI has great potential and can be used in various ways—such as 3D visual forester and modeling based on inventory data—to strengthen communication about Climate-Smart Forestry. However, there is distrust toward AI, which therefore calls for trust-building and clear messaging education for the stakeholders.
- Messages targeted at urban audiences are increasingly important.
- There is an overarching reality of a generational shift in land ownership, with the younger generation increasingly getting dissociated from being landowners and lacking emotional ties with their land. Therefore, it is increasingly becoming imperative to incentivize them —through carbon markets, tax benefits, or fostering environmental stewardship.

#### State and federal policy for forest carbon

Tom Gilbert, Chris Peters, Kendall DeLyser, Matt Gabler, Chris Scott

- Both industry and government need ways to overcome bottlenecks
  - Industry – mills supply chain, loggers, equipment
  - Government
    - processing applications for landowners, complexity of federal grants (applicants need legal/admin service providers, e.g., via PSU ‘legal clinics’)
    - States that are members of U.S. Climate Alliance (<https://usclimatealliance.org/members/>) need greater attention to the land sector including forest and ag. Note, Governors’ mandates in this area are often unfunded
    - Public input to (DCNR) state climate action plan
- Workforce issues – government policy changes needed, e.g.
  - workers comp, compliance challenges and costs
  - lift restrictions on cost-share/ subsidy for ‘mobile equipment’
- Terminology important for public and political palatability
  - “carbon stewardship” more neutral than “climate action”; “resilience” is a catch-all (though often with multiple, potentially contrasting definitions)
  - Climate as “threat multiplier”

**Goddard Forum: Visioning Climate-Smart Forestry in the Mid-Atlantic Region**  
**Wednesday, October 16, 2024. The Penn Stater, Room 109, State College, Pennsylvania**

<b>Time</b>	<b>Topic</b>	<b>Speaker/ Moderator</b>
8:30	Registration and coffee	
9:00	Welcome and introductions	Christopher Scott
9:10	Climate and forests	Margarita Fernández
9:30	Climate-smart forestry: Overview of opportunities and challenges	Melissa Kreye
9:50	Pennsylvania vision for climate-smart forestry	Matt Keefer
10:10	Discussion	Christopher Scott
10:20	Break	
10:40	Adaptation strategies for forest carbon management	Patricia Leopold
11:00	USDA Forest Service carbon stewardship: adaptation and mitigation approaches	Todd Ontl
11:20	Hardwood products industry carbon management & efforts to promote climate benefits	Matt Gabler
11:40	Assessment of carbon management alternatives on production of hardwood products	Chad Papa
12:00	Economic tradeoffs of managing forest for carbon and harvested wood products	Raju Pokharel
12:20	Discussion	Melissa Kreye
12:30	Lunch	
1:30	Public education on climate and forests	Andrea Pfaff
1:50	American Forests initiatives to support forests under climate change	Kendall DeLyser
2:10	Family Forest Carbon Program updates and activities	Sarah Hall
2:30	Discussion	Allyson Muth
2:40	Break	
3:00	Breakout groups by topics:	Margarita Fernández
	<b><i>Breakout topics</i></b>	<b><i>Lead, Rapporteur</i></b>
	<i>Carbon management challenges on private forest lands</i>	<i>Kenny Kane, Allyson Muth</i>
	<i>Hardwoods tracking for long-term carbon sequestration</i>	<i>Amy Shields, Melissa Kreye</i>
	<i>Non-timber carbon storage</i>	<i>Ryan Lee, Margarita Fernández</i>
	<i>Stakeholder participation including non-forest owners</i>	<i>Susan Stout, Abriti Moktan</i>
	<i>State and federal policy for forest carbon</i>	<i>Tom Gilbert, Chris Peters</i>
3:40	Breakout report back	Breakout leads, Christopher Scott
4:30	Plenary discussion, synthesis, next steps	Christopher Scott, org. committee
5:00	Adjourn	

***Optional forest-stand field visit, Thu. Oct. 17, 8:30-12:00, Spring Mills PA <40.84514, -77.59086>***



**PennState**

Department of Ecosystem Science and Management  
 Pennsylvania State University

<b>Participant name</b>	<b>Organization</b>	<b>Email</b>
Matt Keefer	Pennsylvania Dept. of Conservation and Natural Resources (DCNR), Bureau of Forestry	makeefer@pa.gov
Ryan Lee	USDA Forest Service, Southern Region	Ryan.Lee2@usda.gov
Kenny Kane	Consultant	KJKane@generationsforestry.com
Matt Gabler	Pennsylvania Forest Products Association	matt@paforestproducts.org
Amy Shields	Allegheny Hardwood Utilization Group	ashields@ahug.com
Susan Stout	USDA Forest Service - retired	sstoutfs@gmail.com
Kendall DeLyser	American Forests	kdelyser@americanforests.org
Todd Ontl	USDA Forest Service	todd.ontl@usda.gov
Raju Pokharel	Michigan State University	raju2020@msu.edu
Chad Papa	Michigan State University	papachad@msu.edu
Chris Peters	USDA Natural Resources Conservation Service	christopher.peters@usda.gov
Sarah Hall	Family Forest Carbon Program, American Forest Foundation	shall@forestfoundation.org
Andrea Pfaff	New Jersey Forest Service	Andrea.Pfaff@dep.nj.gov
Thomas Gilbert	Pennsylvania Environmental Council	tgilbert@pecpa.org
Meredith Seltzer	PA DCNR, Bureau of Forestry	mseltzer@pa.gov
Ali Bowling	PA DCNR, Office of Planning & Policy	abowling@pa.gov
Jeff Osborne	Penn State ESM; Finley Center for Private Forests	jao5194@psu.edu
Kripa Neupane	Penn State ESM; Forest Owner Carbon & Climate Ed. (FOCCE)	kripa.neupane@psu.edu
Benjamin Gamble	PA DCNR, Bureau of Forestry	begamble@pa.gov

<b>Organizing committee</b>	<b>Organization</b>	<b>Email</b>
Christopher Scott	Penn State - Goddard Chair; Dept. of Ecosystem Science & Management (ESM)	cascott@psu.edu
Patricia Leopold	USDA Forest Service; Northern Inst. of Applied Climate	patricia.leopold@usda.gov
Melissa Kreye	Penn State ESM; Forest Owner Carbon & Climate Ed. (FOCCE)	mxk1244@psu.edu
Margarita Fernández	Penn State ESM; Envir. Policy Goddard Chair Group (EPGCG)	mmf5814@psu.edu
Calvin Norman	Penn State ESM; FOCCE	cmn5525@psu.edu
Allyson Muth	Penn State ESM; Finley Center for Private Forests	abm173@psu.edu
Abriti Moktan	Penn State ESM; EPGCG	abriti9@psu.edu
Nathan Weyandt	Penn State ESM; EPGCG	ndw5072@psu.edu

The Maurice K. Goddard Chair in Forestry and Environmental Resource Conservation supports science-policy dialogue forums on a range of environmental challenges of relevance in Pennsylvania and the Mid-Atlantic region. The objective of the Goddard Forum is to build shared vision among a range of stakeholders to better understanding opportunities for evidence-based policy engagement. Contact: Prof. Christopher Scott, Goddard Chair, [cascott@psu.edu](mailto:cascott@psu.edu); Dr. Margarita Fernández, Postdoctoral Scientist, [mmf5814@psu.edu](mailto:mmf5814@psu.edu)