Forest Carbon Subgroup Recommendations
Final Draft 4.2.24

Introduction

The Forest Carbon Task Force, established by Executive Order in 2021, identified multiple recommendations aimed at increasing forest carbon sequestration and storage in Maine forests. Three key principles formed the starting point for these previous recommendations and the new set of recommendations below because they are foundational to Maine forests successfully sequestering and storing more carbon. These principles were:

- Maintaining existing forestland ("keeping forests as forests") is fundamentally important if forests are to make a growing contribution toward achieving the State's climate goals;
- Improving forest condition through widespread adoption of climate-friendly forest management practices is equally important to increase forest carbon; and
- Increasing economically viable markets for low-grade wood is necessary to facilitate adoption of carbon-enhancing forest practices.

The Forest Carbon Subgroup re-affirms these principles. Forests in Maine are the primary contributor to carbon sequestration and storage, and maintaining as much forest land as possible is essential to meeting Maine's climate goals. The management of Maine forestland is closely linked to its capacity to provide climate-related and other important ecosystem services, including contributing to human health with clean air and water, and supporting local and regional wood markets. Yet forest carbon management, inventorying, and accounting are parts of a highly dynamic field, and new programs and methodologies are constantly emerging.

Informed by these realities, the following three new recommendations aim to increase carbon sequestration and storage in Maine forests while also ensuring these forests continue to support other critical economic, environmental, and cultural values. Specifically, they help forest landowners of all sizes, foresters, and loggers apply climate-friendly practices. To accomplish this goal, Maine must: 1) continually improve data to support sound decision-making for policy and program development; 2) expand technical assistance, training, and education to landowners, foresters, and loggers to increase their ability to apply climate-friendly forest management practices; and 3) provide financial incentives to increase the application of these practices.

1. **Improve forest carbon data, monitoring, and verification to support forest policy-making and outreach program development.**
    a. With further funding, the Maine Forest Service's (MFS) Forest Resource Assessment program should work with the Maine Department of Environmental Protection and the University of Maine to develop a climate-focused forest data and monitoring program that continuously produces the best available information on Maine's forest composition, management and harvest activity, and forest carbon sequestration and storage, and identifies climate-driven forest health and resilience metrics, to better inform climate-friendly forest management practices and public policy decision-making.

2. **Increase the availability of technical assistance, training and education for forest landowners, foresters, and loggers to increase the application of climate-friendly forest practices.**
    a. MFS, in collaboration with others, should develop and maintain up-to-date materials and provide training on extreme weather BMPs, forest carbon offset programs, other revenue-generating forest carbon programs, current use taxation programs, and other strategies, targeting outreach to specific audiences - such as landowners of over 40 acres, new woodland owners, farmers, foresters, and loggers - to expand the implementation of climate-friendly forest management practices, resulting in increased forest carbon sequestration and storage.
    b. MFS should work with partner entities to increase and diversify forest sector-related natural resource professional capacity to apply climate-friendly forest management practices.

3. **Provide incentives to forest landowners, foresters, and loggers to increase the implementation of climate-friendly practices**
    a. The Maine Forest Service and other entities should identify additional technical and financial resources to increase the implementation of climate/carbon-friendly forest management and timber harvesting practices; provide cost-share assistance to loggers to purchase low-impact harvesting equipment and implement carbon-enhancing forest management practices; and support the voluntary use of professionals and service providers who follow protocols to validate the implementation of climate-smart practices.
    b. Given the rapidly evolving availability, content, and geographic focus of carbon-offset and practice-based forest carbon programs for forest landowners, Maine should explore potential opportunities to increase the suitability and availability of incentive programs for Maine's forest landowners that increase forest carbon sequestration and storage while maintaining a robust forest economy.
    c. With further funding, MFS should expand the WoodsWISE incentives program and include climate-friendly management strategies in forest management plans.
    d. The Department of Agriculture, Conservation and Forestry's Bureau of Parks and Lands should explore the potential benefits of engaging in forest carbon pilot projects that increase carbon sequestration and/or storage, maintain forest sector jobs, provide new revenue streams for the management of the self-funded Public Reserve Lands System, and contribute practical knowledge on climate-friendly forest management practices.
    e. Coordinate with existing forest sector development initiatives to help improve markets for low-grade wood that help make implementation of climate-smart forest management practices financially viable.
    f. Maine's open space current use taxation program should be reviewed to identify how best to incorporate incentives for forest owners to adopt climate-friendly land management practices.*

* Placeholder if LD 1648 doesn't pass, to encourage reintroduction of bill in the 132nd legislature.

Forest Carbon Subgroup Template Question Responses
4.2.24

RECOMMENDATION 1 (Data/Monitoring/Verification)

1. Impacts

Mitigation - Will improve the accuracy of data to validate climate-smart initiatives, confirming whether Maine is meeting its climate commitments. It is necessary to accurately quantify the CO2e sequestered and the amount reduced over time. It will confirm whether the intended outcomes of lower atmospheric GHG and reduced co-pollutant impacts on human and ecosystem health are being achieved.

Adaptation and Resilience - Reduces the likelihood and risk of climate hazards by improving the efficacy of GHG reductions. Improved forest carbon data will inform management decisions that lead to increased ecosystem services such as water quality protection, erosion control, and wildlife habitat and connectivity. Improved data access could improve community engagement in climate-smart programming and educational activities.

Workforce/Economic Opportunity - Would create job/economic benefits through the University of Maine to assist the MFS in the development and maintenance of a climate-focused forest data and monitoring program.

Achieving Equity - One barrier could be access to technology (internet, smart-phone, computer) to adequately access and use the data. An improved carbon measurement and verification system assures that priority populations are included in the data used for decision-making. The recommendation is currently silent on specific details that encompass culture, historical access, and low-income and communities of color and is also silent on tribal communities, including the potential impact of issues of trust and sovereignty in the management of data necessary for improved carbon accounting. However, the data could be useful for assessing and mitigating the impacts to these communities.

Additional Costs - Any useful set of data/tools would likely cost several $100K in staffing and other expenses to develop and then an annual budget of $100K to maintain. At a minimum, funding would be needed to develop a prototype and solicit public feedback on how this information could best be distributed and used. USFS and EPA are possible funding sources.

Proven Strategy/Feasibility - Current technology can be used at the outset but data collection techniques must keep pace with emerging technology. Financial and workforce capacity are current barriers to implementation. Generally, other states are spending more than Maine on monitoring and data management of carbon budgets.

2. **Cross-over**

Community Resilience WG. Coastal and Marine WG for blue carbon data and monitoring. Buildings, Infrastructure, and Housing WG and Energy WG with likely recommendations that

rely on forest products to meet their goals (biomass, mass timber, etc.). More generally, intersection with other WGs is through Maine's biennial GHG reporting and carbon budget development that encompasses GHG sources and sinks across all sectors.

3. Priority Populations

Populations - The majority of Maine forestland is located in the state's rural and low-income communities. Forest management, timber harvesting, and wood processing are all vital components of the state's forestry sector, one of Maine's major natural resource industries. The sector is comprised largely of small businesses.

Impacts - The Equity Subcommittee recommended (Ch. E, Goal 2) consulting with priority populations including tribal communities on climate change-related data collection. This forestry recommendation would increase access to forest carbon data by these communities.

Sources of Information - The Forest Carbon Subgroup included representatives of woodland owners and small businesses from Maine's rural communities.

Result of Engagement - Bookmark for Mitchell Center feedback.

Implementation - The MFS, DEP and the University of Maine will need to consult and partner with priority populations to develop data collection and monitoring protocols.

4. Timeframe

Increased data collection will first require funding to support staffing. Implementation and initial outcomes should then be achievable in the short/mid-term (2025-2030). The need, however, is continuous. New data could potentially the next (11th) DEP GHG reporting cycle.

5. Implementation Next Steps

Type: Legislation; Coordinate with other parties/agencies; Establishment of a new program or a fund; Conduct additional research.

Next Steps: Secure funding. MFS, UMaine, DEP to identify key individuals; solicit input to identify data acquisition and analytical needs to develop a framework that complements other relevant reporting frameworks (e.g. USEPA, IPCC, UNEP).

6. Measuring Outcomes

Metrics should measure the extent of improved access to Maine forest carbon data by priority populations. Progress will be evident by improved precision, accuracy, and completeness of Maine carbon budget calculations and improved understanding of the relationship between Maine calculations and those of other states and federal agencies (e.g., USFS FIA, USEPA).

RECOMMENDATION 2 (Technical Assistance/Training/Education)

1. Impacts

Mitigation - Would directly enhance mitigation of greenhouse gas emissions by increasing carbon sequestration and storage through better implementation of climate-friendly forest practices.

Adaptation and Resilience - Climate-friendly forest practices have the benefit of increased resilience of the forest resource, allowing for greater adaptation in the face of climate change. These practices also have co-benefits related to the creation and maintenance of wildlife habitat and improved connectivity if implemented on a wide scale. Decreased negative impacts from major storm events, wildfire, or other natural disasters would also be an outcome.

Workforce/Economic Opportunity - Engaging new forest landowners and others not currently managing their forests will lead to more active timber management and will create economic opportunities for foresters, loggers, and landowners. This strengthens one of the state's key natural heritage industries.

Achieving Equity - Targeted outreach to underserved landowner groups can ensure priority populations are engaged. Existing cost-share programs make the development of forest management plans accessible to previously underserved populations.

Additional Costs - An existing network for training already exists, although it would likely require additional resources to handle additional demand and outreach needs. Materials will need to be maintained and distributed through ongoing outreach which may require additional MFS staff.

Proven Strategy/Feasibility - Landowner outreach and direct technical assistance are proven strategies that lead to active landowner engagement with their land. Barriers include a shrinking pool of consulting foresters in Maine and ongoing difficulty filling open MFS forester positions with qualified candidates. (JDS)

2. Cross-over

Community Resilience WG (through flood mitigation); Transportation (wood haulers); Building, Infrastructure/housing (wood products)

3. Priority Populations

Populations - Rural communities (family woodland owners), natural resource industries, small businesses (logging and contractor businesses), and previously underserved populations of forest landowners who have a presumed higher-than-average potential to increase carbon sequestration and storage on their lands including those with over 40 acres, new woodland owners, and farmers. Climate-smart forestry has indirect benefits for people with health vulnerabilities.

Impacts - The Equity Subcommittee recommended (Ch. D, Goal 2) providing workforce training opportunities for natural resource industry workers to help adapt to a changing climate. This recommendation aims to increase and diversify forest sector-related natural resource professional capacity.

Sources of Information - The lack individuals entering forestry professions in Maine and nationwide is broadly understood. A myriad of industry assessments by the public and private sector confirms this.

Result of Engagement - Bookmark for Mitchell Center feedback.

Implementation (via consultation with/access by Priority Populations) - ?

4. Timeframe

Implementation and realized outcomes should be achievable in the short/mid term (2025-2030). The actions will need to be ongoing.

5. Implementation Next Steps

Type: Provide education/training; Coordinate with other parties; Internal program guidance changes; Establishment of a new program or a fund

Next Steps: New training opportunities can build upon multiple existing training programs. Certain educational resources can be developed with existing MFS staff. Increased landowner outreach will require filling vacant MFS forester positions. Increasing and diversifying professional capacity will require collaboration between MFS, the University and community college system, and the private sector.

6. Measuring Outcomes

Outcomes could be measured by the number of individuals trained on climate-friendly forest management practices, including the number of individuals from priority populations. Requiring that such training be incorporated into Woodland Resource Action Plans is one possible approach. Increases in the availability and diversity of forest sector-related natural resource professionals could also be tracked. Additional metrics could be established to document which practices are being implemented, and on how many acres. MFS's BMP Monitoring Annual Report could gauge the effectiveness in training to climate-smart practices. Baseline data are needed to measure progress.

RECOMMENDATION 3 (Incentives)

1. Impacts

Mitigation - Providing financial incentives to forest landowners, foresters, and loggers that enables them to implement climate/carbon-friendly forest management and timber harvesting practices will have a direct mitigation impact through increased forest carbon sequestration and storage.

Adaptation and Resilience - Providing financial support to forest landowners, foresters, and loggers will enable them to implement forest management strategies that improve resilience and adaptation in the face of a changing climate. Climate-friendly forest management can reduce wildfires and other climate hazards and safeguard neighboring communities. It also can increase ecosystem services such as wildlife habitat and connectivity and water quality protection.

Workforce/Economic Opportunity - Engaging more forest landowners in managing their forests will lead to more active timber management, and will create economic opportunities for technical service providers, loggers, and landowners. This strengthens one of the state's primary natural heritage industries.

Achieving Equity – These financial incentives will make the development of forest management plans and the implementation of climate-friendly forest management practices accessible to previously underserved populations.

Additional Costs - Providing financial incentives to forest landowners, foresters, and loggers to implement climate-friendly forest management and harvesting practices will require the identification and/or development of new public funding mechanisms or funding from the private or non-profit sector. Funding from practice-based forest carbon programs are a potential source of new funding.

Proven Strategy/Feasibility - Providing direct financial support to forest landowners to incentivize adoption of certain forest management practices is a rapidly evolving field. New voluntary and regulatory forest carbon markets and associated implementation approaches are emerging each year. Barriers include program complexity and length of commitment. (JDS)

2. Cross-over

Community Resilience WG

3. Priority Populations

Populations - Rural communities (family woodland owners), natural resource industries, small businesses (logging and contractor businesses), and previously underserved populations of forest landowners who have a presumed higher-than-average potential to increase carbon sequestration and storage on their lands including those with over 40 acres, new woodland owners, and farmers. Climate-smart forestry has indirect benefits for people with health vulnerabilities.

Impacts - Financial incentives to increase carbon sequestration and storage would provide new economic opportunities for rural landowners and loggers.

Sources of Information - Maine Forest Service surveys confirm that landowners with a forest management plan are far more likely to manage their forest in ways that improve forest condition and associated ecosystem services. Surveys also confirm that small forestland owners face barriers to engaging in forest carbon programs due to program complexity and cost of entry.

Result of Engagement - Bookmark for Mitchell Center feedback.

Implementation (via consultation/access by Priority Populations) - ?

4. Timeframe

- Implementation and realized outcomes should be achievable in the short/mid-term (2025-2030) dependent on additional funding allocations. The actions are ongoing.

5. Implementation Next Steps

Type:- Legislation; Establishment of a new program or fund; Coordinate with other parties/agencies/states.

Next Steps: Many of the actions depend on securing stable and adequate funding to implement. Partnerships must be developed to modify existing or develop new programs.

6. Measuring Outcomes

Standard metrics include the number of new forest landowners with forest management plans; the number of forest landowners who received funding and are implementing carbon-friendly forest management practices; the amount of acreage engaged; the number of acres enrolled in revised Open Space Tax Program climate-enhancing options; the use of practices by loggers; and the total forest carbon sequestration and storage in Maine's forests. Metrics should also include an ongoing assessment of the relative impact of different climate-enhancing forest management practices to identify those that result in the greatest carbon sequestration and storage over time. Baseline data are needed to measure progress. MFS's BMP monitoring program could be adapted to test and verify educational and operational ground performance.