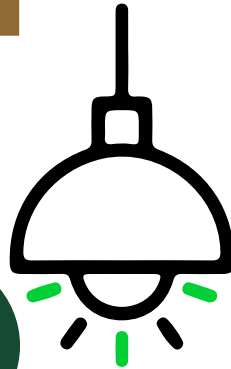




CRSF Updates



crsf.umaine.edu

The **CRSF website** has been revamped for easier navigation to forest research, tools, and resources.

THE UNIVERSITY OF MAINE Admissions Campus Life Academics Research About Us Search... Quicklinks

Center for Research on Sustainable Forests

Home Research Programs Multi-Institutional Research Forest Climate Change Initiative Data Tools Resources

The **Center for Research on Sustainable Forests (CRSF)** was founded in 2006 to build on a rich history of leading forest research and to enhance our understanding of Maine's forest resources in an increasingly complex world. Forest research and its application are rapidly evolving due to unprecedented availability of data provided by emerging technologies such as high-resolution digital imagery and GPS. As the CRSF looks to the future, we hope to lead the development, integration, and application of these emerging technologies to address current and future issues in natural resources.

Our mission is **to conduct and promote leading interdisciplinary research on issues affecting the management and sustainability of northern forest ecosystems and Maine's forest-based economy.**

Our Team **Partners** **Forest Research Programs** **Multi-Institutional Research**

Forest Research News



CAFS is set to become one of the first graduated NSF Industry university Research centers at the end of 2025. A primary objective of CAFS was to unify regional cooperatives under a consistent structure and function to leverage existing resources and create national synergies, particularly in the era of emerging technologies like AI and advanced remote sensing. This combination of expertise and assets is critical to leveraging capacity given the increasing nature of innovations across the sector despite declining US Federal R&D expenditures. CRSF leadership is working to continue this important work into the future.

crsf.umaine.edu/cafs



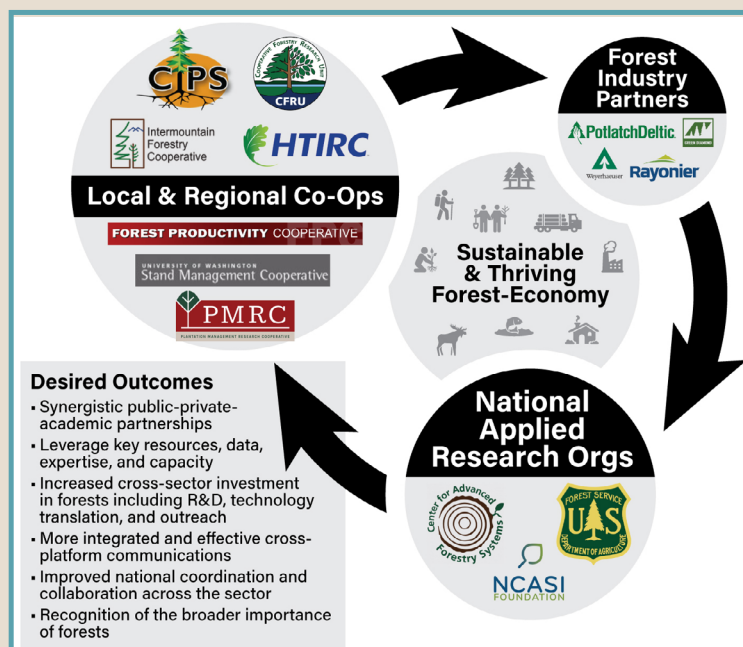
CFRU had a highly productive summer field season on the Maine Adaptive Silviculture Network (**MASN**), a large-scale silvicultural project that spans the state of Maine. Measurements are taken on the overstory, saplings, regeneration, stumps from the harvest, and coarse woody debris.

The *Spruce Budworm Lab* crsf.umaine.edu/cfru

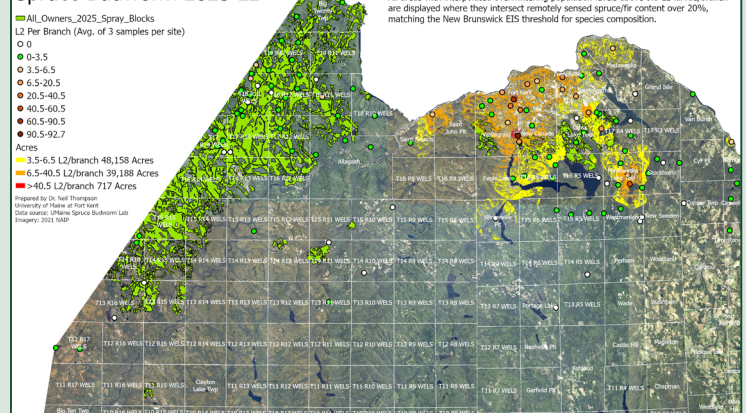
is running at full tilt processing L2 counts on cuttings from Maine's large forest landowners. Early results indicate larvae numbers are down in areas that were sprayed and up in zones that have not been part of the early intertention spray proram. To find the most up-to-date info and maps of the current outbreak, visit www.sprucebudwormmaine.org.

Upcoming Dates

- ⇒ Fall Advisory Committee meeting; October 29, 2025
- ⇒ CFRU Fall Field tour: October 30 2025. Co-hosted with BBC Lands, his will be a day of applied research discussions at the MASN site on Grand Falls TWP. CFRU cooperators and their staff are welcome.



October 3, 2025: Subject to Update Spruce Budworm 2025 L2





Silviculture for Acadian Spruce-Fir Forests summarizes the voluminous

literature and research findings that have accumulated over the last five decades under seven major themes (plus supplementary materials) relevant to the silvicultural treatment of Acadian spruce-fir forests. The series covers site quality, managing for high timber yields, natural regeneration, multi-aged silviculture systems, and ecological silviculture.

crsf.umaine.edu/spruce-fir-silviculture-series/

Silviculture and Management of Maine Forests is a repository for Dr. Robert S. Seymour's writings and analyses on this subject from the publication "Maine Woodlands" (the monthly magazine of the Maine Woodland Owners organization) and other sources not published in the refereed literature

Dr. Seymour is the Curtis Hutchins Professor Emeritus of Silviculture on the School of Forest Resources faculty. He served 39 years on the University of Maine forestry faculty and maintains a YouTube channel on applied silviculture (<https://www.youtube.com/@tmimotf>).



Now in its second year of NSF support, CRSF leads ***Maine-Forest (Forest-based Opportunities for Resilient Economy, Sustainability, and Technology)***, a multi-institutional project that provides strategic planning and integration of research, education, and outreach across the University of Maine System (UMS) to facilitate partnerships and the sustainable growth of Maine's forest-based economy.

umaine.edu/forest/maine-forest

The project research seeks to:

- ⇒ Strengthen R&D infrastructure that directly supports Maine industries
- ⇒ Utilize data science and AI to understand forest conditions and forecast future changes using deep learning algorithms
- ⇒ Expand the framework for new product development and the role of diverse stakeholder values and perspectives
- ⇒ Provide opportunities for STEM engagement and workforce development
- ⇒ Encourage collaborative knowledge networks who will sustain growth and innovation for the project
- ⇒ Increase awareness, interest, and capacity for green collar opportunities



NSF announced in mid-September that the collaborative proposal by UMaine (led by CRSF Director Weiskittel) and the Northern Forest Center team, ***Northern New England Precision Forest Management and Advanced Forest Bioproducts Engine (NNE-PROMISE)***, has advanced to the final stage of competition under NSF's Engines initiative, which aims to build and scale new innovation clusters to accelerate the development of critical technologies and grow regional economies nationwide. The proposed work is to bring new technologies to market that landowners and foresters can use to maintain and improve the resilience,

productivity, and economic outputs of the 25 million acres of forest that span the three states. Ancillary emphasis is on innovating new products derived from wood that create business opportunities and manufacturing jobs in rural communities. Additional partners include the Universities of New Hampshire and Vermont, Dartmouth College, Maine Development Foundation, Vermont Sustainable Jobs Fund, and the U.S. Endowment for Forestry & Communities.

The **Northern States Research Cooperative** supports new and ongoing forest research in the Northeast. In September, three projects were awarded funding under the NSRC Indigenous Forest Knowledge Fund, including UMaine's Dr. John Daigle's to sustain healthy ash trees against the emerald ash borer invasion. Last spring, 11 grants totalling nearly \$2.2 million of federal funding and close to \$1 million of matching funding were awarded. Projects led by UMaine SFR faculty will (1) evaluate species distribution changes, biomass shifts, and carbon stock dynamics to develop a spatial decision framework to optimize spruce budworm management; (2) use forest inventories, CO₂ flux data, biomass estimates, and carbon projection models to provide a comprehensive assessment of the carbon consequences of partial harvests; (3) develop an advanced wood products carbon flow and storage estimator tool.



Goals for Year 3 of the **PERSEUS (Promoting Economic Resilience and Sustainability of the Eastern U.S. Forest)** is to build a strong foundation for redefining national forest inventory in the U.S., while developing the ability to project future forest conditions to make economical and data-driven decisions that affect the sustainability and resilience of forest resources. Efforts to achieve the goals of this multi-institutional effort (cross-disciplinary teams from UMaine, Purdue, and University of Georgia) include refining learning communities to maximize

training and exposure to digital forestry technologies, curriculum development, and professional development and online certification.

New & Noteworthy

A GLOBALLY RELEVANT DATA-DRIVEN ASSESSMENT OF CARBON LEAKAGE FROM FORESTRY

ADAM DAIGNEAULT, BRENT SOHNGEN,
ETHAN BELAIR, PETER ELLIS

Adam Daigneault et al 2025 Environ. Res. Lett. in press <https://doi.org/10.1088/1748-9326/ae0ce2>

FOREST TYPE, LANDOWNER PRACTICES, AND CLIMATE SHAPE TREE SPECIES DIVERSITY IN MAINE, USA

JIANHENG ZHAO, ADAM DAIGNEAULT,
XINYUAN WEI, EVAN SALCIDO,
AARON WEISKITTEL

Jianheng Zhao et al 2025 Forest Ecology & Management, Vol. 593. <https://doi.org/10.1016/j.foreco.2025.122919>

CONNECTING GROWTH AND YIELD MODELS TO CONTINUOUS FOREST INVENTORY DATA TO BETTER ACCOUNT FOR UNCERTAINTY

MALCOLM S. ITTER, ANDREW O. FINELY,
AARON WEISKITTEL

Malcolm Itter et al 2025 Forest Ecology & Management, Vol. 589. <https://doi.org/10.1016/j.foreco.2025.122754>

This newly released video produced by landowner Northeast Wilderness Trust showcases Howland Research Forest, the site of the nation's second-longest running collection of atmospheric carbon data. Howland Research Forest in Howland, ME is a site of invaluable scientific study made possible by its wild state, and home to numerous studies by CRSF-affiliated forestry faculty. Howland Forest also hosts scientists from around the world for studies on forest health and climate change. These scientists now have one of the longest records of carbon intake and output (flux) in the world.

Howland Research Forest

Howland, Maine

CRSF news, resources, and forest research links can be found on our website, crsf.umaine.edu

Upcoming Events



Co-sponsors:
- Mitchell Center for Sustainability Solutions
- Native American Programs/Wabanaki Center
- UMaine Dept. of Communication & Journalism
- UMaine Dept. of Anthropology



Why return land to Indigenous Nations without restriction?

Discussions on Wáhsehtək® and Wabanaki-Land Trust Partnerships

Monday, October 20 at 3 p.m.

This talk will be held virtually via Zoom and in-person at 107 Norman Smith Hall, UMaine. To register: umaine.edu/mitchellcenter

Land return, remediation, and conservation work led by Indigenous peoples intersect with several of the key issues impacting the well-being and cultures of our Indigenous nations. This includes issues of environmental and climate justice, food sovereignty, health, and economic justice. As a practice, land returns are being done by land trusts without easements or restrictions, while at the same time scholars have recognized that Indigenous leadership, knowledge, and decision-making in conservation work also represent

conservation best practices—resulting in the most effective ways to conserve lands productively for climate resilience and biodiversity.

Panelists:

- Chuck Loring, Penobscot Nation
- Betsy Cook, Maine State Director, Trust for Public Land
- Darren Ranco, Native American Programs, UMaine

To request a reasonable accommodation, contact Ruth Hallsworth, 207.581.3196 or hallsworth@umaine.edu

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UMaine Showcase Days FOREST PRODUCTS

JOIN US!
NOVEMBER 19TH
UNIVERSITY OF MAINE
ORONO, ME
10:00AM - 3:00PM

Discover how your company can leverage UMaine's world-class research, facilities, and partnerships to spark innovation and growth in Maine's forest economy.

Experience guided tours of the **Process Development Center**, the **Advanced Structures and Composites Center**, and the **Technology Research Center**. Plus, take part in an **interactive panel discussion** featuring UMaine faculty, staff, and researchers sharing the latest opportunities and insights.

EXPERT PANELISTS

CONTACT US OR REGISTER

THE UNIVERSITY OF MAINE SYSTEM IS AN EQUAL OPPORTUNITY INSTITUTION COMMITTED TO NONDISCRIMINATION.

More Info



Forest-Related Tech Cohort Applications Due by Oct. 13

Forest-related technologies include innovations that use forest-derived materials, enhance forest management, or strengthen the forest products value chain. This encompasses advanced wood products, bioplastics, biofuels, and the upcycling of waste materials from lumber, pulp, and paper processes. It also includes the application of digital technologies such as AI, machine learning, and data analytics to improve areas like forest inventory, supply chain optimization, predictive maintenance, and environmental monitoring. I-Corps @ UMaine helps foster innovation and entrepreneurship by providing faculty, staff, and students with the tools and guidance needed to identify the market opportunity for their STEM-based research.



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207.581.3794

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