Northern Institute of Applied Climate Science

Partnership Statement and Charter

PARTNERS

USDA Forest Service: Northern Research Station (NRS) and Eastern Region (R9)
American Forests (AF)
Great Lakes Indian Fish and Wildlife Commission (GLIFWC)
Michigan State University (MSU)
Michigan Technological University (MTU)
National Council for Air and Stream Improvement, Inc. (NCASI)
University of Minnesota (UMN)
University of Vermont (UVM)

A Multi-Institutional Partnership

The Northern Institute of Applied Climate Science (NIACS) is a collaborative, multi-institutional partnership that helps land and natural resource managers address the impacts of climate change and related stressors. NIACS is led by the USDA Forest Service and composed of Federal (USDA Forest Service NRS and R9), forest sector (NCASI), conservation (AF), higher education (MSU, MTU, UMN, UVM), and tribal organizations (GLIFWC). Additional members from diverse sectors are welcomed and solicited.

Our Mission

The NIACS mission is "to develop and provide applied ecological, economic, social, and cultural information that can be used in ecosystem climate adaptation and carbon management."

Rationale: Our Changing Climate

Forested landscapes are integral to the character, culture, and economy of the Northeast and Midwest United States, with 176 million acres of forests supporting the wellbeing and livelihoods of the 130 million people living in the 20-state region.[1] A variety of climatic and environmental conditions across this large region result in diverse forest communities and a wide array of associated ecosystem services. Forest ownership and tenure reflect a patchwork of federal, state, tribal, and private lands, with most forests held by private woodland owners with relatively small parcels.[2] Forests in rural and urban settings, along with associated ecosystems in the landscape, provide crucial benefits to the region and its inhabitants, including clean air and clean drinking water, carbon storage and sequestration, cultural and spiritual connections, economic value from wood products, and recreational opportunities. About half of the regional water supply originates on forest lands, providing clean water to metropolitan areas like New York City and Boston and to rural municipalities. For Tribal communities, ecosystems of this region provide for their spiritual, ceremonial, medicinal, subsistence, and economic needs through connections to ancestors, first foods, habitat for non-human relatives, and places to exercise treaty rights and practice cultural lifeways.[3,4] A changing climate is affecting ecosystems and the human communities that rely on forests for food, clean air and water, habitat, economy, and culture; actions to adapt to climate change are necessary to sustain ecosystems and their associated services and benefits.

Climate change effects and vulnerabilities are strongly influenced by regional climate impacts, ecosystem adaptive capacity, and past or present land uses. Not all ecosystems are vulnerable to climate change in the same way; yet changes in temperature, precipitation patterns, disturbance regimes, soil moisture, pest and disease outbreaks,

nonnative invasive species, and compounding interactions among many stressors are expected to increase the vulnerability of many places within the region.[5] Climate impacts and associated stressors like invasive plant and pest species, are of increasing concern to regional land managers and stewards looking to sustain the health of regional forests and ecosystems.

Our Shared Interest

Climate change affects areas much larger than any single property or ownership, requiring multi-institutional knowledge sharing and adaptation partnerships. NIACS partners work together to synthesize the state of knowledge and practice, and to share innovative ways to address climate change as part of land management, conservation, and stewardship activities.

Since its inception in 2003, NIACS has led collaborative, cross-boundary partnerships to respond to climate change. Successful co-production among scientists, managers, and landowners has resulted in a diverse suite of tools, resources, and outreach that have been widely applied and successfully used to advance climate change education and adaptation regionally and nationally.

NIACS works across the 20-state region of the Northeast and Midwest US, providing direct technical support and assistance to public land management agencies, sovereign tribal nations, forest owners, and conservation organizations.

Our Core Activities

NIACS partners work together on the following activities in support of the NIACS mission and the USDA Northern Forests Climate Hub:

1. Conduct climate change assessment and science synthesis to improve understanding of climate change impacts on ecosystems and associated environmental services.
2. Create a diverse array of decision-support frameworks, tools, and resources to support natural resource professionals in addressing climate change, recognizing the need to allow individuals and organizations to reflect their unique values and management context.
3. Provide technical assistance to meet the needs of specific public, Tribal, and private land management organizations in addressing climate change, including demonstration of a range of adaptation actions representing diverse management goals and land conditions.
4. Increase climate literacy among natural resource professionals, emphasizing active exploration and hands-on training.

An Inclusive Partnership

NIACS seeks engagement, inclusion, and active collaboration with diverse organizations and stakeholders in forestry, conservation, and natural resource management communities. Partners work together to convene practitioners and other stakeholders to share successes and best practices and to create new knowledge to advance climate adaptation. NIACS also works with other climate services organizations to expand the reach of climate change adaptation and carbon mitigation in natural resource management, conservation, and stewardship.

Roles and Responsibilities

The following roles and responsibilities outline the organizational structure and operation of the partnership. An associated Memorandum of Agreement (MOA) sets forth and defines the general terms of the organizations participating in NIACS as a collaborative partnership.

USDA Forest Service

The USDA Forest Service provides leadership and coordination of the NIACS partnership as a core initiative of the USDA Northern Forests Climate Hub and provides general support covering staffing, operating, and location costs.

The Climate Hub convenes the NIACS partnership and is responsible for coordination and oversight of partnership activities. In general, Forest Service activities will include strategic planning of NIACS partnership goals and activities, exploring potential new initiatives, identifying needs for shared work efforts among partners, facilitating implementation as needed, and ensuring ongoing coordination of NIACS projects.

Each Forest Service deputy area (NRS, R99 SPTF, R9 NFS) maintains a designated NIACS liaison (partner representative) to ensure cross-mission coordination and leadership engagement in the NIACS partnership, strategic direction, and desired outcomes. The three deputy areas may also designate additional staff to support and implement programs and projects in support of the NIACS partnership.

Non-Federal Partners

Non-Federal NIACS partners leverage core Federal funding and provide additional financial and in-kind support for science delivery projects. Non-Federal partners work together to pursue supplemental funding to support specific applied science, synthesis, science delivery, and outreach opportunities that advance shared goals.

Each non-Federal partner maintains a designated NIACS partner representative to serve as liaison. The non-Federal partner representatives act with decision authority on behalf of their organization, oversee their funding contributions, help coordinate NIACS activities and the shared program of work, and directly supervise their non-Federal NIACS-affiliated staff.

All Partners

NIACS partners are responsible for following their respective organizational policies and informing fellow representatives of potential conflicts of interest.

Partner representatives serve on a NIACS Coordinating Committee that meets regularly to:

- Ensure communication regarding the business and work of NIACS between their organization and other NIACS partners.
- Identify interests and activities occurring in their organization that are in support of the NIACS mission and goals (e.g., NIACS projects) and provide updates on project activities and outcomes.
- Explore areas of shared interest and potential collaboration within the NIACS mission and goals.
- Share and coordinate programs of work among the partner organizations to achieve increased benefit to those organizations, as well as to the broader community of land managers and stewards.
- Identify opportunities for expanding NIACS partnerships.

NIACS partners, including affiliated staff members, organization leadership, and collaborating scientists and specialists, are encouraged to gather regularly to share information and explore topics related to the goals of NIACS.

Partner organizations will compile accomplishments and contributions in an annual report.

[1] Oswalt et al. 2019. Forest resources of the United States, 2017: A technical document supporting the Forest Service 2020 RPA assessment. Gen. Tech. Rep. WO-97. Washington, DC: US Department of Agriculture, Forest Service, Washington Office. 97 p.

[2] Shifley and Moser 2016. Future forests of the northern United States. Gen. Tech. Rep. NRS-151. Newtown Square, PA: US Department of Agriculture, Forest Service, Northern Research Station. 388 p.

[3] Great Lakes Indian Fish and Wildlife Commission (GLIFWC) Climate Change Team 2018. Climate change vulnerability assessment version 1: Integrating scientific and traditional ecological knowledge. Odanah, WI: Great Lakes Indian Fish and Wildlife Commission.

[4] Great Lakes Indian Fish and Wildlife Commission (GLIFWC) Climate Change Team 2023. Aanji-bimaadiziimagak o'ow aki. Odanah, WI: Great Lakes Indian Fish and Wildlife Commission.

[5] Swanston et al 2018. Vulnerability of forests of the Midwest and Northeast United States to climate change. Climatic Change. 146(1):103-116.