

Forest Ecosystem Monitoring Cooperative

2023 Work Plan

Updated September 27, 2022

The Forest Ecosystem Monitoring Cooperative 2023 Work Plan provides a guide for program goals to be achieved by the FEMC staff in support of the Cooperative for the calendar year of 2023. This document summarizes key activities FEMC staff will undertake to complete projects and develop outputs that align with the 2021-2026 Strategic Plan and the identified needs of the Cooperative. The work plan was developed with consultation from the Steering Committee and State Partnership Committees, as well as input from the State Coordinators and FEMC staff.

The activities in this work plan are funded by the USDA Forest Service through an appropriation in the federal fiscal year 2021 budget. The University of Vermont, Vermont Department of Forests, Parks and Recreation, Connecticut Agricultural Experiment Station, Maine Forest Service, Massachusetts Department of Conservation and Recreation, New Hampshire Division of Forests and Lands, and Rhode Island Division of Forest Environment and cooperating partners provide matching funds.

Contents

- States Included in the Cooperative..... 2.....
- Summary of the FEMC Work Plan Structure..... 2.....
- Regional Projects..... 2.....
 - Regional Development Project: Monitoring the Impacts of Recreation on Forest Ecosystems.. 2
 - Regional Exploration Project: Exploring Trends in Tree Mortality as a Response to Disturbance Drivers
- Monitoring..... 7.....
 - Ecosystem Monitoring Fund..... 7.....
 - Forest Health Monitoring..... 7.....
 - Forest Phenology Monitoring..... 7.....
 - Forest Inventory and Monitoring..... 7.....
 - Other Forest Health Monitoring and Information Sharing..... 8.....
 - Montane Meteorological and Air Quality Monitoring..... 8.....
 - Avian and Amphibian Monitoring..... 8.....
- State Sprint Projects..... 9.....
- Core Activities..... 10.....
 - Maintenance Project: Maintaining and Enhancing Existing FEMC Regional Resources..... 10
 - Network Development: Stakeholder Engagement and Collaborative Outreach..... 10
 - FPR Program Administration and Monitoring Support..... 11.....
 - Core Program Operations..... 11.....
 - State Coordinators and Activities in Partnering States..... 12.....

States Included in the Cooperative

The seven-state region of New England and New York are included in the regional synthesis efforts and

During the 2022 Exploration Project, a literature review was completed to gather information about types of recreation activities and ecological impacts. Additionally, views of regional experts in recreation were conducted to capture their perspective on the impacts of recreation and needs of the community. A comprehensive data census was not conducted during this phase; however, availability of data appears to be limited to specific locations and short-term projects. Monitoring of recreational impacts in the northeast is more commonly focused on exploring the social and economic benefits of recreation, rather than directly monitoring changes in forest health. Western states more commonly have monitoring methods and data available for different types of recreation. An opportunity exists to review monitoring methods used in other regions and develop recommendations for implementation here in the Northeast. Data that is available, such as trail counter data, will also be documented and when possible, gathered for use in analysis.

Trail network data may be available for across the northeast but is not currently easily accessible for the purposes of understanding recreation impacts on forest health. To create a resource for forest managers, trail network data will be aggregated from various sources to develop a comprehensive GIS

This project plan is detailed in the below logic model.

Problem Statement: Forest-based recreation activities are increasing. People are taking part in both motorized and non-motorized activities. Different types of activity place varying levels of pressure on forests. **Level** is also an important factor to consider in how forests are being impacted. Types of impact include soil erosion, invasive plant transport and establishment, and disruptions to wildlife. Forest managers and landowners are interested in evaluating the impacts of recreation on forests. Monitoring data is limited, with most information focused on the societal and economic impacts of recreation. The FEMC will gather resources to provide information to Cooperative members to conduct these evaluations and analyses, to lead to decision-making recommendations.

Inputs:

- Completed [literature review](#)

Regional Exploration Project Exploring Trends in Tree Mortality and Response to Disturbance Drivers

The FEMC community has expressed interest in exploring patterns of tree mortality and how regional coordination of monitoring for both acute events and delayed responses following disturbances can lead to a better understanding of regional impacts. The information currently available from FIA data does not provide the level of detail needed by the community. Operators have expressed interest in development of a working group to develop a rapid response plan following acute events. The working group would be tasked with identifying a regionally targeted rapid response group of nearby responders during and following disturbances and mortality events. The working group would also identify best practices for responding to events, including implementation of monitoring plans for long-term tracking of potential mortality events.

Additional opportunities exist to review and compare tree mortality data. Fully available 2010-2013 data (0030) 93248922 (1) 8 (4) 17

This project plan is detailed in the following logic model:

<p>Problem Statement: The FEMC community has expressed interest in exploring the topic of tree mortality and how to evaluate long-term impacts, for both acute events and delayed responses following disturbance or defoliation. The information currently available from FIA data does not provide the level of detail needed by the community. Following an acute event, funding is often available, but long-term tracking does not typically occur</p>		
<p>Inputs:</p> <ul style="list-style-type: none"> • Forest Health Atlas mortality filter; • FIA mortality data (when available); • NEFIN CFI regional mortality data • Availability as a facilitator/hub for community management; • ForWarn tool • Project planning and staff time 	<p>Activities:</p> <ul style="list-style-type: none"> • Review of FIA, ADS data available for evaluating mortality events; • Formation of working group; Development of monitoring response plans following varying acute events or ongoing disturbance to track short- and long-term changes; • Create stakeholder list and gain agreements from organizations to serve as tree mortality first responders to implement monitoring plans; 	<p>Outputs:</p> <ul style="list-style-type: none"> • Analysis of mortality events from FIA, NEFIN CFI and ADS data; • Monitoring plans for different mortality event types; • stakeholder list • Workshop to train and plan for response to potential mortality episodes region wide
<p>Assumptions: Stakeholder and partner groups will agree to serve as first responders;</p>		

Outcomes:

- Forest manag 510.12 18.2e f 225.51 Tf -0.004 Tc 032 M58 0 Td5 (S22 M58 0 Td5 (S22 (e))1.4 (t)-6.3 (ma)-6 ET EM.

Monitoring

Ecosystem Monitoring Fund

FEMC will administer a competitive request for proposals where Cooperators can apply to access monitoring funds. These funds have been made available for the past two years funding a total of 11 projects and providing support for the collection, aggregation, analysis, and utilization of forest ecosystem monitoring information to better understand the current threats, historical trends, and future directions of the forested landscape in the Northeast. We will seek proposals that meet the strategic objectives of the FEMC which may include novel assessments or analyses of already collected monitoring data, expansion of existing monitoring efforts, piloting a new monitoring program, upgrading a monitoring program to increase comparability with others in the region, covering a short-term gap in funding, funding for monitoring programs that occur less than annually, or upgrading data logging equipment. FEMC staff will:

1. Work with the Steering Committee to establish fund priorities and mechanics, and advertise the request for proposals;
2. Coordinate with state FEMC staff and Committee members to review, rank, and recommend projects for funding;
- 3.

(ANR) lands to answer relevant and timely questions on a variety of topics including regeneration and climate change to help public land managers make informed land management decisions.

State Sprint Projects

Each year, several state-directed sprint projects are identified by state partners at the State Partnership Committee meetings. These projects typically focus on state-specific gaps in information, tools, or analysis that FEMC resources are needed to fill. Recent sprint projects have included the development of Forest Indicators Dashboards for New Hampshire and New York; a data rescue project to collect and digitize historic spongey moth data from Rhode Island, and a preliminary recreation review program in Connecticut.

FEMC will continue to provide sprint project support to states in 2023 with participating governance structures and state-based staff to assist in execution, either through the advice of FEMC State Partnership Committees or an existing state committee or board serving in this capacity. FEMC will provide equal support through staff time to regional state partners according to their needs and priorities. This typically equates to about \$13,000 FEMC staff FTE per state per year. Vermont does not participate in these sprint projects because fundi

FEMC will organize and host an annual conference with forest ecosystem study results, workshops, and material relevant to scientists, natural resource managers, and educators. In addition, FEMC will develop, execute and monitor the success of a communications and engagement strategy and maintain a number of communication channels to facilitate outreach, including the development of stories for various newsletters and outlets, as well as maintaining a Facebook page, Instagram feed, Twitter account, and email newsletter. Additional outreach materials will be developed for FEMC projects, as needed. Materials may include fact sheets, video tutorials, webinars, and case studies to convey information to target audiences.

FPR Program Administration and Monitoring Support

FPR provides administrative and field work support in coordination with FEMC staff, including program coordination with partners by participating in Committee meetings, implementation of the FEMC Annual Conference, and expansion of FEMC through planning and participation on conference calls, surveys and meetings with FEMC partners in Vermont and in adjacent states. In addition, FPR staff provide training and methods standardization for State and UVM field crews involved in forest health monitoring field work and collect forest health and spring and fall phenology measurements. FPR staff also contribute to data processing, analysis and reporting for FEMC long term monitoring updates.

In addition, FEMC will offer training and internship opportunities for students and new professionals.

State Coordinators and Activities in Partnering States

Funding will be made available to each state to support staff participation in the Cooperative.

Participating states will provide the following support as part of the Cooperative:

- Work with FEMC staff and other Cooperative partners to deliver the outputs of the regional work plan as identified above.
- Work with the FEMC Director to populate, convene and support the work of a State Partnership Committee. This will include identifying and inviting members as needed to build and maintain the Committee, helping to develop agendas for meetings, convening the Committee at least once per year to advise on and review work of the FEMC, working with Committee members to define and execute state 'sprint' projects, and responding to Committee needs and requests.
- Work with FEMC staff and partners to execute state sprint projects defined by the State Partnership Committee through gathering needed data, convening stakeholder meetings, performing data analysis and/or promoting the outputs of the sprint projects to interested parties.
- Participate in the collection of forest health monitoring data as part of the regional FEMC forest health monitoring network described above. Staff will attend a training and calibration session, coordinate with FEMC crews to complete plot measurements, assist with quality control efforts, review summary reporting, and promote the network and its findings to the broader community.
- Promote the tools and outputs of the FEMC through trainings, workshops and presentations to stakeholders. FEMC staff will work with state staff to develop appropriate and tailored materials for promoting the work of the FEMC, and provide additional support as needed in conducting this outreach. State staff will identify appropriate venues and methods of delivery to get FEMC products and tools to the manager, decision makers and planners that need them.
- Participate in a review of applications to the Ecosystem Monitoring Fund for alignment with FEMC strategic goals and objectives, relevance, and impact using criteria developed by the Steering Committee, and make recommendations for funding.
- Participate in regular FEMC staff/team meetings related to the development and execution of