



Managing Resilient Forests Initiative

Project Objective: *Promote and support management actions in eastern national parks that foster resilient forest ecosystems by protecting key park resources and characteristics.*

Initiative Approach



Describe Forest Condition - From 12 years of regional monitoring data, describe current status and trends of park forest resources. Produce regional comparisons to place individual park conditions in a regional context.



Connect Park Managers - Identify parks facing similar threats to facilitate collaboration among parks and management efficiencies.



Recommend Tools - Provide recommendations on management actions that will promote resilient forest ecosystems within parks, including case studies and lessons learned from recent management efforts in Region 1 parks.



Support Adaptive Management - Collaborate with parks to integrate Inventory and Monitoring (I&M) data into management decision-making. On-going monitoring not only keeps track of management progress but creates a framework for adapting that management over time as needed.

Initiative Products



Park-specific resource briefs for the thirty-nine Region 1 I&M parks summarizing forest health condition and trends.



Array of management strategies for parks faced with:

- forest loss
- forest regeneration failure
- changing forest composition
- individual tree species decline
- maintaining forest integrity.

Management recommendations will focus on tools available to park managers such as:

- invasive species control
- prescribed fire
- deer management
- silvicultural treatments
- tree planting
- fencing, etc.



In-person training for Region 1 natural resource managers, focused on the recommended management strategies for promoting resilient forests, to be held in **November 1-3, 2022 at the National Conservation Training Center**. This training will enable information exchange among parks, provide guidance on forest management from experts throughout the northeastern US, and build capacity within the region for implementing forest management.

This.



Not this.



Forests in Region 1 parks are in peril.



Forests cover tens of thousands of acres in eastern national parks and these critical resources face a range of interacting stressors: novel pests and pathogens, invasive plant dominance, over-abundant white-tailed deer populations, development of

surrounding lands, altered disturbance regimes, increasingly frequent extreme weather events, and changing climate conditions.

At worst, these stressors cause the parks' native forests to be replaced by thickets of exotic invasive shrubs that impede cultural viewsheds and increase visitors' exposure to disease-carrying ticks. Collectively, these impacts can result in increased operational costs for parks to ensure visitor safety and preserve park infrastructure and have the potential to change the character of a park's specific resource that visitors have come to enjoy.

Forest health monitoring data from five Inventory & Monitoring (I&M) Networks within NPS Region 1 have identified concerning long-term, region-wide trends in tree regeneration that indicate significant threats to future sustainability of park forests.



Emerald Ash Borer

Many parks lack the minimum level of seedling and sapling (small tree) density needed to replace canopy trees as they die, whether from age, natural disturbance, or the effects of non-native pests and pathogens. Even in parks where I&M has documented "healthy" regeneration (i.e., seedling and sapling density at levels sufficient to sustain a future tree canopy), the regeneration is composed of primarily non-canopy tree species or species whose future is known to be threatened (e.g., ash trees, which are being decimated by the invasive exotic Emerald Ash Borer).

In most parks, non-native plant abundance is increasing which further suppresses regeneration.

Urgent Management Needs

Based on these troubling trends, I&M scientists are concerned that parks in the Eastern U.S. need active management approaches to restore or sustain their forests over the long term.

Managing for resilient park forests is imperative to ensure long-term ecosystem health, maintain biodiversity, and meet the NPS mission of preserving park resources unimpaired for future generations.

For More information

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The **Managing Resilient Forests Initiative** builds on the best available science to identify best management practices that parks can undertake to preserve their forest resources, and facilitates the implementation of needed forest management in Region 1 parks.



The I&M Networks of NPS Region 1: Eastern Rivers and Mountains Network, Mid-Atlantic Network, National Capital Region Network, Northeast Coastal and Barrier Network, and Northeast Temperate Network.

