



# Forest Regeneration is Secure in Acadia National Park

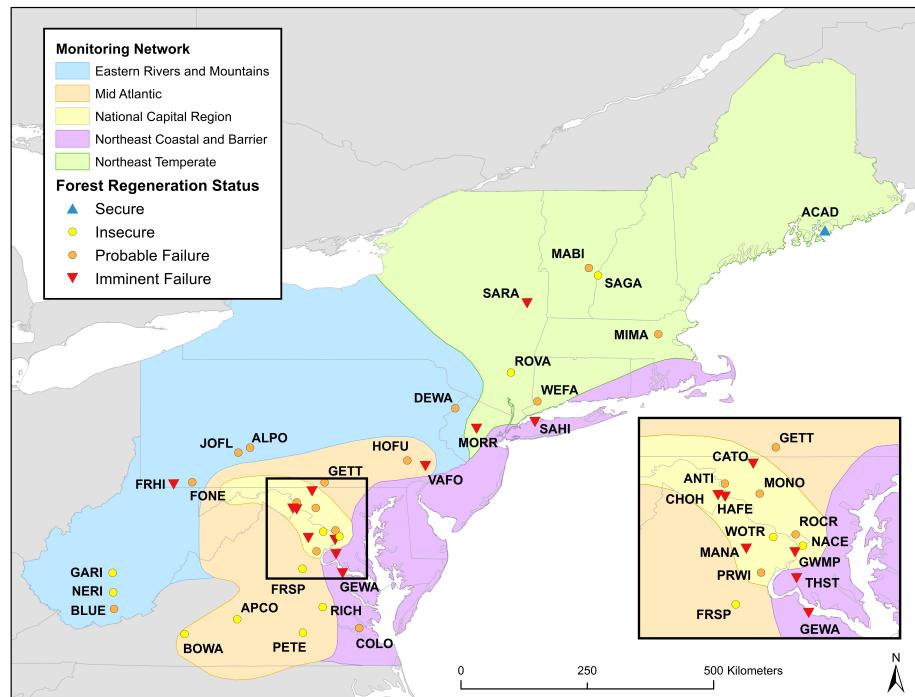
## Introduction

Forests are a key part of the landscape and visitor experience in eastern parks. These ecosystems are facing many stressors, including non-native plants, invasive tree pests, overabundant deer, and an altered fire regime. These stressors diminish forest resilience, which is the ability of an ecosystem to experience disturbance and rebound to similar functions, structure, and composition. A lack of tree regeneration - seedlings and saplings of canopy-forming trees - is an early indicator of reduced resilience and potential for future forest loss.

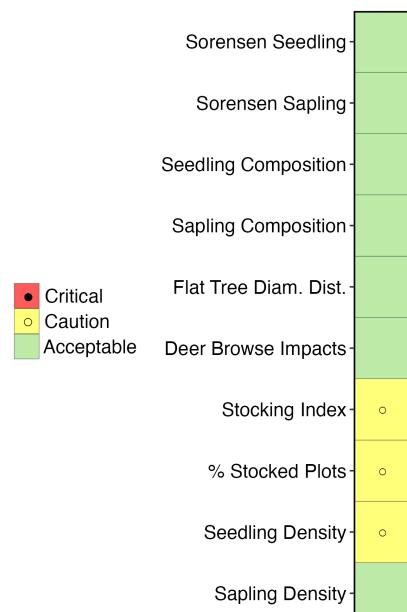
The NPS Eastern Forest Working Group assessed 10 regeneration metrics in 39 parks containing about 1,500 permanent forest health monitoring plots sampled every four years (2008-2019). Here, we share results for Acadia National Park (ACAD). For more detailed information on the full study, see the source publication in the **Resources** section below.

## Main Findings

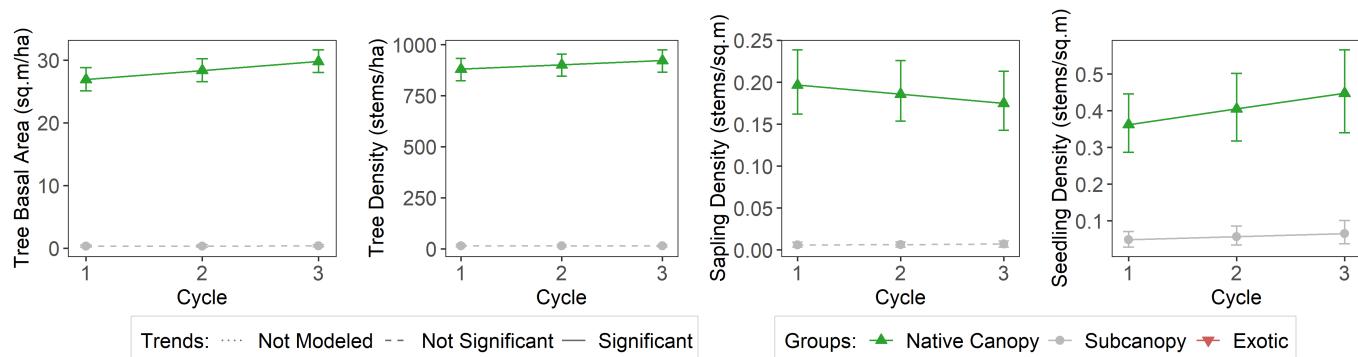
On a four-category scale (Secure, Insecure, Probable Failure, and Imminent Failure), ACAD has a forest regeneration status of **Secure**. This means that the park currently has abundant seedling and sapling numbers, and shows few concerning trends in regeneration metrics (Figure 2). The trends over time in tree, sapling, and seedling abundance by native canopy, subcanopy, and exotics are shown in Figure 3.



**Figure 1.** Map of parks included in regional regeneration project and forest regeneration status. Acadia National Park is located in the Northeast Temperate (NETN) Inventory and Monitoring Network.



**Figure 2.** Regeneration status for each of the 10 metrics in Acadia National Park.



**Figure 3.** Trends in tree, sapling, and seedling abundance by species group. Trends are based on change over time across three complete survey cycles: Cycle 1 (2008 – 2011), Cycle 2 (2012 – 2015), and Cycle 3 (2016 – 2019).

## Management Recommendations

Eastern national parks need a sustained commitment to reducing deer browse impacts, managing invasive plants, and enhancing forest structural complexity and diversity to secure sufficient regeneration and avoid future forest loss. We suggest that managers of ACAD:

- continue to reduce invasive plants through early detection and rapid response, release of approved biological controls, and strategic invasive plant management in high priority habitats.

We also recommend that managers assess the following strategies for future action:

- protect forest regeneration from browse impacts through sustained deer culling and fencing.
- assess forest stands at risk or already impacted by pests / pathogens and prioritize invasive plant management in stands where canopy gaps have increased / will increase light to the forest floor.
- use of prescribed burning in dry, fire-adapted forests to promote canopy tree regeneration.
- increasing light to the forest floor by thinning less desirable subcanopy trees in areas with minimal impacts from deer and invasive plants.

These management efforts are important for ACAD to facilitate future forest cover. Conditions are changing rapidly across parks, therefore continued monitoring and reassessment of management actions is necessary to avoid future forest loss in the park. Please refer to the source publication for more information on management strategies and reach out to the contact below for further assistance.

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## Resources

**Source Publication:** Miller K., Perles S., Schmit J.P., Matthews E., Weed A., Comiskey J., Marshall M., Nelson P., Fisichelli N. 202X. Forests in eastern national parks face widespread regeneration debt. Ecological Applications.

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**Links:** [Managing Resilient Forests Initiative for Eastern National Parks](#)

