

# Forest Resiliency *for an* Uncertain Future

Change in forests is natural and healthy, yet it is likely that we are at a time when the number of stressors facing our forests is greater than it has ever been. In addition, the pace with which the stressors are arising is increasing. These pressures threaten the personal benefits that forests provide to their owners as well as the many benefits they provide to the public.

## Assessing and Increasing Forest Resiliency

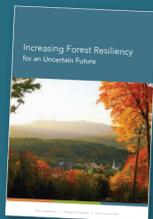
All forests and the landscapes they lie within have some characteristics that make them resilient (see "Characteristics of Resilient Forests") and others that make them vulnerable to stressors. We can increase the resiliency of our forests and landscapes by evaluating these characteristics and implementing actions to address the vulnerabilities, using the following steps:

**Step 1:** Assess your forest's resiliency.

**Step 2:** Implement the corresponding action for each of the statements from Step 1 that apply to your forest.

**Step 3:** Monitor your forest for changes, and evaluate if the actions you took to increase resiliency were effective.

This poster is based on the publication *Increasing Forest Resiliency for an Uncertain Future*. For a PDF, visit [MassWoods.net](http://MassWoods.net).



Catanzaro, P., A. D'Amato, E. Silver Huff 2016. *Increasing Forest Resiliency for an Uncertain Future*. UMass Extension Landowner Outreach Pamphlet. 28 pages.

## Characteristics of Resilient Forests

**Formal plans** for the future of the property



**Minimal forest stress** from invasive plants, insects, and diseases, and deer

### High Forest Complexity



- ✓ Diversity of tree species
- ✓ Ample tree regeneration of future-adapted species
- ✓ Vigorous trees of various sizes and ages
- ✓ Variety of tree arrangements
- ✓ Appropriate amount of deadwood



**Healthy soil and water**

**Protected** threatened, endangered, and at-risk species



## Step 1

### Assess Forest Resiliency

(Check all that apply)

#### GOAL 1 Keep Forest Forested and Connected

- 1.1: Formal plans have NOT been made to keep the forest as forest
- 1.2: The property is either part of a resilient forest or connected to large areas of forest

#### GOAL 2 Reduce Stressors

- 2.1: Invasive plants are found on or near the property
- 2.2: Invasive insects or tree diseases are found on or near the property
- 2.3: There are significant effects from deer on the vegetation
- 2.4: There is significant soil compaction or erosion

#### GOAL 3 Reduce Vulnerability

- 3.1: The forest does NOT have many different types of tree species of various sizes, ages, and spatial arrangements
- 3.2: The forest does NOT have young trees predicted to be well adapted to future conditions
- 3.3: The forest has a high abundance of preferred host species for invasive insects or diseases
- 3.4: The forest has areas with dense, crowded tree stems
- 3.5: There are NOT 5 or more large snags (>16" diameter) per acre
- 3.6: There are NOT 5 or more large logs (>16" diameter) per acre
- 3.7: Water resources do NOT have forested buffers

#### GOAL 4 Provide Refuge

- 4.1: The property includes threatened, endangered, or at-risk species
- 4.2: The property can harbor species that we may lose from the landscape

## Step 2

### Increase Forest Resiliency

(Implement the corresponding action for each statement chosen)

#### GOAL 1 Keep Forest Forested and Connected

##### ACTIONS

- 1.1: Engage in conservation-based estate planning
- 1.2: Conserve resilient forests and the connections between them

#### GOAL 2 Reduce Stressors

##### ACTIONS

- 2.1: Identify and remove invasive plants, and prevent their introduction
- 2.2: Monitor for invasive insects and diseases, and implement measures to control or slow their spread
- 2.3: Manage deer to ensure ample regeneration
- 2.4: Maintain or restore soil and water health by avoiding soil compaction, stabilizing accelerated erosion, and establishing forested buffers around water resources

#### GOAL 3 Reduce Vulnerability

##### ACTIONS

- 3.1: Maintain and/or promote diverse species, sizes, ages, and spatial arrangements
- 3.2: Promote the establishment of tree species predicted to be well adapted to future moisture and temperature conditions
- 3.3: Increase the representation of nonhost tree species
- 3.4: Reduce stem crowding by thinning to concentrate limited resources on remaining trees in order to increase forest vigor
- 3.5: Increase the amount of large snags
- 3.6: Increase the amount of large logs
- 3.7: Establish forested buffers around all water resources

#### GOAL 4 Provide Refuge

##### ACTIONS

- 4.1: Protect threatened, endangered, and at-risk species
- 4.2: Identify areas of your land that may support species predicted to not do well, and establish small reserves around these and other areas of high ecological value

## Step 3

### Monitor and Evaluate



**Evaluate** past conservation actions to ensure that the goals have been reached



**Monitor your woods** for stressors and vulnerabilities

**Revisit Steps 1 and 2** if past actions haven't achieved goals or new stressors or vulnerabilities arise

Step 1  
Assess Forest Resiliency

Step 2  
Increase Forest Resiliency



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