Managing for Forest Resilience in a Changing Climate
A Factsheet for Forest Landowners in the Northern Allegheny Plateau Region

N. Allegheny Plateau

Your Forest and Climate Change

Climate change is impacting our forests. The Bureau of Forestry recommends taking steps to establish forests resilient to a changing climate.

Current and Projected Climate Shifts

Pennsylvania's climate has already warmed by 1.8ºF since the early 1900s. Scientists know the rate of warming is accelerating and expect as much as a 5.9ºF increase by 2050.

Average winter temperatures are increasing more than any other season, by 1.3ºF per decade since 1970.

Our climate has also become wetter. Average yearly rainfall has increased 10% over the last century, and heavy downpours have increased by 71% in the northeastern US.

The following information identifies potential forest vulnerabilities to climate change and management strategies to encourage forest resilience.

Forest Vulnerabilities

➤ New forest pests and greater impact of existing forest pests

➤ More invasive plants

➤ More fungal oubreaks

➤ more windthrow

➤ More soil erosion

➤ Stream bank destabilization

➤ Changing forest community

➤ Unpredictable seasonal temperatures and extremes

Management Strategies

➤ Increase vigilance for forest pests, invasive species, and pathogens (with aggressive follow-up)

➤ Protect existing forests

➤ Reforest deforested lands

➤ Ensure biodiversity through a mix of age classes

➤ Plant a diversity of native trees, including known climate resilient trees in your region

➤ Work with your county service and consulting forester to create a forest management plan

Resilient Trees

Oak: scrub, white, black, swamp white, scarlet, pin, N. red, chestnut

Hickory: mockernut, pignut, shagbark, bitternut

Other: basswood, black walnut, sycamore, slippery elm, black gum, E. redbud, black locust, E. red cedar, hackberry, hophornbeam, green ash, hornbeam, sassafras, pitch pine, black locust, yellow poplar, flowering dogwood, boxelder, E. redbud, sycamore

Trees at Risk

Maples: mountain, striped, sugar

Evergreens: hemlock, red pine, balsam fir, jack pine, red spruce, white spruce, black spruce, N. white cedar

Other: paper birch, river birch, Am. mountain ash, fire cherry, quaking aspen, balsam poplar, American beech, pin cherry, black ash, tamarack

*Resilient and At Risk lists are based on modeling by the USDA Forest Service. With all models, there is some uncertainty. Some species may fare better (or worse) in different settings depending on prevailing ecological factors at the site. Landowners should enhance diversity to improve climate resilience and not necessarily limit their management decisions based solely on these models.

More Information

DCNR Bureau of Forestry
PaForester@pa.gov
717-787-2703

DCNR's Climate Change Page
https://www.dcnr.pa.gov/Conservation/ClimateChange/Pages/default.aspx

Service Forester Directory
https://maps.dcnr.pa.gov/landownerassist/

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DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
www.dcnr.pa.gov