

Managing for Forest Resilience in a Changing Climate

A Factsheet for Forest Landowners in the Northern Allegheny Plateau Region



RR/MDGPDD

Climate Change is real and impacting our forests. As the state's lead conservation agency and advising authority on managing commonwealth forests, the Bureau of Forestry recommends taking steps to adapt forests to Climate Change and mitigate its impacts.

Current and Projected Climate Shifts

Pennsylvania's climate has already warmed by 1.8°F since the early 1900s. Scientists know the rate of warming is accelerating and expect as much as a 5.4°F increase by 2050. Average winter temperatures are increasing more than any other season, by 1.3°F per decade since 1970. In addition to more warmth, our climate has become wetter. Average yearly rainfall has increased 10% over the last century, and heavy downpours have increased by 71% in the northeastern US.

Forest Vulnerabilities

- Invasive plants
- New forest pests
- ↑ impact: existing forest pests
- ↑ fungal outbreaks
- ↑ windthrow
- ↑ soil erosion



- Riparian considerations
- Changing forest community

Mitigation/Adaptation Strategies

- Protection of existing forests
- Reforestation of lands
- Favor old-growth forests and leave downed woody debris
- Ensure biodiversity, uneven age stands
- Increased vigilance for forest pests, invasive species, and pathogens (with aggressive follow-up)
- Selection of non-resilient trees for harvesting
- Replanting with resilient species

Resilient Trees

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

Hickory: mockernut, pignut, shagbark

Other: basswood, bl. walnut, sycamore, slippery elm, black/sweet gum, e. redbud, bl. locust, e. red cedar, hackberry, hophornbeam, gr. ash, hornbeam, sassafras, pitch pine, river birch, black/honey locust, yellow poplar, fl. dogwood, sourwood*, shortleaf pine*

*new range

Trees at Risk

Maples: mountain, striped, sugar

Evergreens: hemlock, red pine, balsam fir, jack pine, red/white/black spruce, n. white cedar, tamarack

Other: paper/river birch, American mountain ash, fire cherry, quaking aspen, balsam poplar, American beech, chokecherry, pin cherry, black ash

More Information

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DCNR's Climate Change Page

<https://www.dcnr.pa.gov/Conservation/ClimateChange/Pages/default.aspx>

