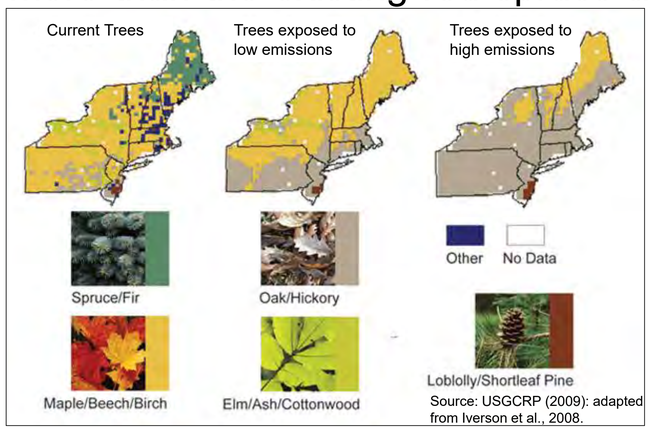
Climate Change and Forests

Current Change and Forests

While rain and snow have been getting cleaner and less acidic in New England, the area's climate has been changing. Winters have become warmer, spring is starting earlier, and fall is beginning later than a generation ago.

In addition to a warming environment, current concerns about climate change include impacts due to climate variability which happens over many seasons and years instead of day to day like weather. For example, some northeastern summers may be cooler than others, or some years may have more total precipitation than others. The Northeast is also generally getting wetter with more intense storms becoming more common.

On Mount Ascutney, warmer temperatures and longer growing seasons may increase the growth of maple, beech, and birch trees of the lower elevations more than the existing red spruce and balsam fir you see around you.



Source: USGCRP (2009): adapted from Iverson et al., 2008.

Although warmer and wetter conditions are generally favorable for plant growth, other aspects of a changing climate may cause problems for the forests of Mount Ascutney.

For more information contact: Steve McNulty: 919.515.9489, smcnulty@fs.fed.us; or David Hollinger: 603.868.7673, dhollinger@fs.fed.us, or Johnny Boggs, 919.513.2973, jboggs@fs.fed.us

Warmer winters can increase the survival rates of insects and allow more southern-adapted pests to become established. For example, the non-native hemlock woolly adelgid—an aphid-like insect—does not generally survive when winter temperatures drop below about minus 4 or minus 5 degrees Fahrenheit, but warming winters may allow it to become established in the lower elevation hemlock stands in this region. In Connecticut and Massachusetts, the hemlock woolly adelgid has killed entire stands of hemlock trees.

Current Science and Policy Challenges

Following the establishment of the Acid Rain Program in the 1980's, Congress and private industry worked together to reduce nitrogen and sulfur emissions, despite some opposition to policy changes that ultimately resulted in cleaner air and healthier forests. As with the Acid Rain Program , some opponents are resistant to regulations or caps on emissions of climate-warming greenhouse gases, such as carbon dioxide released from the burning of fossil fuels used for electricity, transportation, and industry. They believe there are too many unknowns around the scientific data, and/or that the cost to fix the problem will hurt the economy. Scientific evidence suggests that a lack of targeted and aggressive polices to reduce greenhouse gas emissions will lead to more intense rain storms, accelerated sea level rise, longer periods of drought, and hurricanes will become stronger and more intense.

Sustaining Forests in a Changing Climate

U.S. Forest Service scientists are engaged in long-term research to understand how forests are responding to climate change. This work informs policy makers who must make decisions about climate change solutions and supports land managers who must develop strategies to sustain forests through changing climatic conditions. Visit the Forest Service Climate Change Resource Center (http://www.fs.usda.gov/ccrc/) to learn what this agency is doing to help mitigate and adapt to climate change.