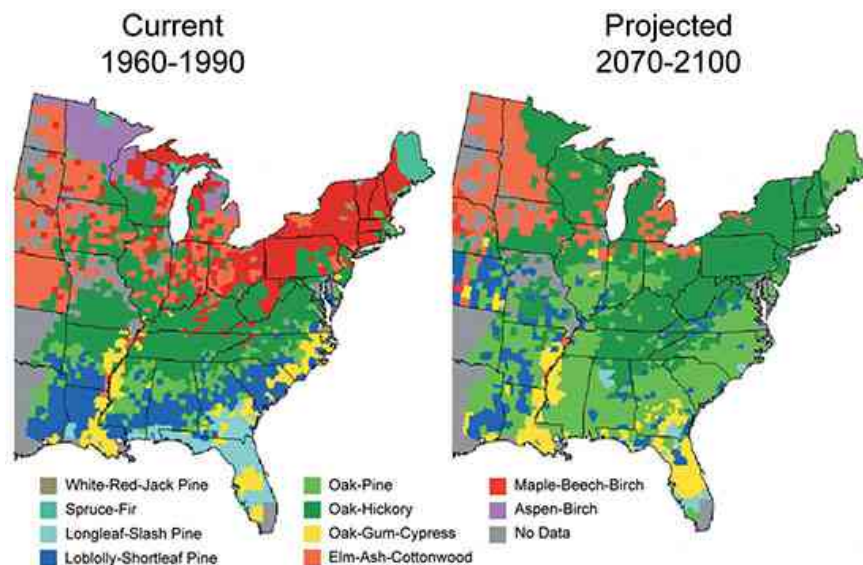


## Effects of Climate Change on Woods & Forests

Warmer temperatures and changing precipitation patterns are driving forests northward, to higher elevation, or to less optimal soil. Many tree species may lose their advantage over species found farther south.

### Shifting Ranges

With warming temperatures, forests are moving northward, to higher latitudes, or to areas more suitable for success. The quintessential New England northern hardwood forests that give us a kaleidoscope of color in the fall are slowly losing their advantage over species like oaks and hickories that currently thrive in conditions farther south. Spruce-fir forests, which rely on cool, high-elevation climates near the tops of mountains have nowhere to migrate as other forest types colonize their habitat from below.



The maps above show the current and projected predominant forest types for the Eastern United States. Northern hardwood forests may lose their advantage over forest types that favor conditions currently found farther south.

### Forests are an Ecological Backbone

Changing forest health and range has implications far beyond what types of trees will succeed. Trees are a major backbone of ecosystems that birds and other wildlife rely on. If there is such an abrupt change in the natural landscape, the wildlife, the human systems, and the economies that rely on those systems will be challenged to keep pace with the rate of change.

## **How Fast Can a Forest Move?**

Some forest types will be unable to migrate fast enough to keep up with warming temperatures. A rule of thumb is that most tree species can colonize habitat beyond their existing range at a rate of 100 km in a 100 years (about 62 miles per 100 years). Some species will be able to move that fast, but warming temperatures will likely require forests to shift by 400 to 600 km (about 250 to 370 miles) by 2100, a rate faster than most species can tolerate.

## **Amplification of Existing Stressors**

Climate change is amplifying the natural and human-caused stresses New England forests are already facing. A greater risk of drought increases the risk of fire and insect outbreaks. Trees already stressed from lack of water may not be able to re-leaf if struck by pests like gypsy moths. Stronger storms can lead to erosion, weaken a tree's connection to the soil. Warmer temperatures may allow pests once confined south by the cold to spread northward. There are many potential side effects of a changing climate on forests, but healthy stands are more likely to remain resilient.

## **Effects on Maple Sugaring**

The sugar maple is the iconic New England tree species. Its sap gives us maple syrup, and every fall, its leaves turn brilliant shades of orange in an annual blazing finale.

Sugar maples have been a part of our heritage and traditional forests for as long as we can remember, but climate change will pose many challenges for these beloved trees in the future.

## **WHAT WE CAN DO TO PROTECT FORESTS**

### **Adopt a Tree**

Urban forests provide a number of services to the communities in which they live. They decrease heating and cooling demands for neighboring buildings, soak up water during heavy storms, filter pollution from the air, improve recreational opportunities, and support overall public well-being.

Making sure young trees survive droughts and are protected from deer browsing, is something we can all do in our own neighborhoods. During a drought, water young trees nearby even as you reduce water usage in general.

### **Protect Land & Provide a Path**

Providing forests interconnected landscapes free of development to facilitate migration is one of the most important steps we can take to keep future forests healthy. Getting our communities to [adopt the Community Preservation Act](#) is one way to help improve forest connectivity.

To view the full article, click [here](#) or go to:

<https://www.massaudubon.org/our-conservation-work/climate-change/effects-of-climate-change/on-natural-habitats/forests>