

Beech booming as climate changes, and that's bad for forests

February 26 2018, by Patrick Whittle

Beech trees are dominating the woodlands of the northeastern United States as the climate changes, and that could be bad news for the forests and people who work in them, according to a group of scientists.

The scientists say the move toward beech-heavy forests is associated with higher temperatures and precipitation. They say their 30-year study, published in the peer-reviewed *Journal of Applied Ecology*, is one of the first to look at such broad changes over a long time period in the northeastern U.S. and southeastern Canada.

The changes could have major negative ramifications for forest ecosystems and industries that rely on them, said Dr. Aaron Weiskittel, a University of Maine associate professor of forest biometrics and modeling and one of the authors.

Beech, often used for firewood, is of much less commercial value than some species of birch and maple trees that can be used to make furniture and flooring.

"There's no easy answer to this one. It has a lot of people scratching their heads," Weiskittel said. "Future conditions seem to be favoring the beech, and managers are going to have to find a good solution to fix it."

The authors of the study, who are from the University of Maine and Purdue University, used U.S. Forest Service data from 1983 to 2014 from the states of Maine, New Hampshire, New York and Vermont to

track trends in forest composition. They found that abundance of American beech increased substantially, while species including sugar maple, red maple and birch all decreased.

That's a problem not only because of beech's lower value, but because of the spread of beech bark disease, which causes the trees to die young and be replaced by newer trees that succumb to the same disease.

The authors found that the rise of beech and the decline of other species is associated with "higher temperature and precipitation" in the forests. The dominance of beech was also especially notable in some key tourist areas—the White Mountains of New Hampshire, the Adirondack Mountains of New York and the Green Mountains of Vermont.

And beech has the possibility to grow even more because it's not a favorite food of deer, which will eat more seedlings of other trees, Weiskittel said.

The paper echoes other work that shows environmental changes are squeezing out important tree species, said Dr. Martin Dovciak, an associate professor in the Department of Environmental and Forest Biology at the State University of New York College of Environmental Science and Forestry who was not involved with the study.

"It's important to realize that the species composition that we are used to, in terms of forest management, might be different in the future," he said.

The changing forests will also pose challenges for loggers and timberland owners in the Northeast. More beech [trees](#) could mean less access to quality lumber for the timber industry, said Jasen Stock, executive director of the New Hampshire Timberland Owners Association.

"We're really dealing with the fallout from climate change, and how do we manage to accommodate for that," he said.

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