

# Regulatory, certification systems creating paralysis in use of genetically altered trees

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The boundary of a recent low-intensity stand-replacing fire showing the abruptness of the burned-unburned boundary, and the creation of habitat diversity at the stand scale. Credit: Pierre Bernier

Myriad regulations and certification requirements around the world are

making it virtually impossible to use genetically engineered trees to combat catastrophic forest threats, according to a new policy analysis published this week in the journal *Science*.

In the United States, the time is ripe to consider regulatory changes, the authors say, because the federal government recently initiated an update of the overarching Coordinated Framework for the Regulation of Biotechnology, which governs use of [genetic engineering](#).

North American forests are suffering from an onslaught of threats including local and imported pests, as well as the impacts of a shifting climate. These threats pose "a real and present danger" to the future of many of our forest trees, notes Steven Strauss, a distinguished professor of forest biotechnology at Oregon State University and lead author on the analysis.

"The forest health crisis we're facing makes it clear that regulations must change to consider catastrophic losses that could be mitigated by using advanced forest biotechnologies, including genetic engineering," Strauss said. "With the precision enabled by new advances in genetic engineering - and their ability to make changes more rapidly and with less disruption to natural tree genetics than hybrid breeding methods - they can provide an important new tool."

In their analysis, Strauss and coauthors Adam Costanza, of the Institute of Forest Biosciences in Cary, North Carolina, and Armand Séguin of Natural Resources Canada in Quebec, argue that new regulatory approaches should be implemented in the United States and globally that focus on the product, not the process - and consider need, urgency and genetic similarity of modifications to those used in breeding.

The researchers note the striking discrepancy between the speed at which pests and changing climates are affecting trees and modifying

both natural and planted forests, and the onerous and slow pace of regulatory review of [genetically engineered](#) trees that could be used to help fight these threats.

"If we have a technology that can help stop a forest health crisis, we should also have a regulatory system that can respond in a time frame that can make a difference," said Costanza, who is president of the Institute of Forest Biosciences.

The authors stress that they are not advocating for separate regulations for genetically engineered trees. Rather, they call for an approach that would give agencies the option to fast-track field research for products intended to address forest health problems or that use methods that modify natural genes and thus are comparable in scope to those of conventional breeding.

"Obviously, these changes will take time and require wide-ranging input," said Strauss, a professor in OSU's College of Forestry, "but we need to start now. We depend on forests for so many ecological, social and economic values - and all of these are being threatened.

"Why should we tie up a major tool like genetic engineering in excessive red tape?"

The authors point out that sustainable forest certification systems also are in need of a policy update. All major systems ban genetically engineered trees and will not certify any land as sustainable if genetically engineered trees are grown at all - even if the trees are being used solely for research or are designed to help stop a [forest](#) threat.

**More information:** "Genetically engineered trees: Paralysis from good intentions," by S. Strauss, [www.sciencemag.org/lookup/doi/ ... 1126/science.aab0493](http://www.sciencemag.org/lookup/doi/10.1126/science.aab0493)

Provided by Oregon State University

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