

Genetically Engineered Trees: Growing Threats to Eastern Forests & Appalachian Communities

From Global Justice Ecology Project and the Campaign to STOP GE Trees

Climate change, deforestation and invasive pests and pathogens increasingly threaten the health of forest ecosystems throughout the Eastern US. Opportunistic forestry and biotechnology corporations, entrepreneurs and corporate-funded researchers are finding new and dangerous ways to use these crises to promote their agenda of replacing wild forests with genetically engineered (GE) [also called genetically modified (GM) or transgenic] facsimiles tailored to “solve” these problems and create new profits.



Forests across the east, and particularly Appalachian forests, are ground zero for these new and unproven GE tree experiments.

A GE American chestnut tree known as Darling 58 has been developed as a supposed tool for “forest conservation” that resists the fungal blight that killed billions of American chestnuts in the Eastern US. Additional schemes involve hybrid poplars genetically engineered for various “climate-friendly” traits including faster growth, fungus/rot resistance and “more efficient” carbon sequestration.

In both cases, university researchers have teamed up with corporations to advance the research and development of their GE trees. In the case of the GE American chestnut, William Powell of SUNY College of Environmental Science and Forestry (ESF) teamed up with GE tree company ArborGen, Monsanto and Duke Energy to bring his Franken-chestnuts to life.

GE poplars are being developed by a Bay Area tech startup called Living Carbon in conjunction with Oregon State University researcher Steve Strauss, a long-time campaigner for GE tree deregulation. They are using land devastated by mountaintop removal strip coal mining in Appalachia for real life experiments with their GE poplars. They report already having planted thousands on this land despite no assessments on the ecological risks or impacts, nor requirements for monitoring. The USDA, which oversees GMOs, gave Living Carbon a regulatory free pass regarding these GE poplars. The lack of reporting requirements makes it extremely difficult to find out how the trees have been engineered and what the possible impacts could be on forest ecosystems when they contaminate native, wild poplars.

We know that these trees were engineered to be fast-growing and fungus/rot-resistant, which means there could be serious impacts on water, and on the health of forest soils, which depend on decomposing wood. But Living Carbon hopes to sell their GE poplars by the millions to timber and energy corporations for huge monoculture plantations developed expressly for carbon offsets, later to be cut for timber. They hope these rot-resistant plantations will reap profits by selling the carbon they store as “offsets” to polluters to enable them to avoid emissions cuts. Living Carbon would get a cut of the profits from these pollution-enabling offsets.

William Powel meanwhile is awaiting the outcomes of the USDA's Environmental Impact Statement regarding the distribution of his blight-resistant D58 GE American chestnuts. Powell wants unmonitored and unregulated planting of his GE chestnuts throughout Eastern wild forests, with the express purpose of cross-contaminating mature wild American chestnuts that still remain in the forests to create GE hybrids, a process that scientists have warned could wipe out wild American chestnuts permanently, leaving only GE varieties. While Powell claims to have proven his D58 chestnuts are "safe," scientists have denounced his risk assessment studies as grossly inadequate. Pollinator feeding studies, for example, did not use GE chestnut pollen. Tadpole and other feeding studies used leaves from GE chestnuts containing far lower concentrations of the GE enzyme.

There are no long-term assessments of the inevitable risks posed by these or other GE trees to forest ecosystems, water, or nearby human communities. Rather than provide a solution, GE trees have the potential to unleash devastating, unpredictable and irreversible impacts on forests, escalating climate change, depleting water, and worsening forest degradation, environmental destruction, and economic inequality.

The science is clear. Halting destruction of forests, including eliminating their conversion to industrial timber plantations, is one of the most effective and available means to avoid the worst impacts of the climate crisis.

Yet GE trees and plantations threaten forests, communities and health, as well as diverting resources from proven, effective and equitable solutions. GE trees will not solve climate change but exacerbate it by interfering with efforts to protect and regenerate forests. Without a fundamental systemic transformation, no progress towards a livable future will be made.

To read more on the dangers of GE trees, please visit: StopGETrees.org

There you will find:

- Our fully referenced white paper, "**Biotechnology for Forest Health? The Test Case of the Genetically Engineered American Chestnut**"
- A referenced briefing paper "**Genetically Engineered Trees: No Solution to Climate Change**" exploring the ways in which the use of GE trees will worsen the climate crisis.
- A feature article in *Truthout* discussing in depth the issues and concerns around the GE American chestnut tree at stopgetrees.org/?s=truthout
- A primer on the basic problems with genetic engineering, "**What Are GMOs?**"
- A link to a petition to say no to GE trees at stopgetrees.org/take-action/#Petition
- A place to sign your organization on to become a partner in the Campaign to STOP GE Trees at stopgetrees.org/group-sign-on/
- Plus many more resources.

Contact us to get involved:

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Listen to Breaking Green on the American chestnut!



Scan the code to listen to Dr. Donald Davis discuss his book *The American Chestnut: An Environmental History*. In the interview, he calls the story of the American chestnut a cautionary tale of unintended consequences, and criticizes plans to release GE American chestnuts into the wild.