BETTER FOREST HEALTH THROUGH TREE RESISTANCE—COLLABORATIVE APPROACHES

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Exotic pests and pathogens are causing wide-spread decline and possible extirpation of several of our foundational forest tree species. The decline of such species has large-scale effects on their associated ecosystems and services they provide. A steady barrage of new threats to important forest species is anticipated to continue as a by-product of increasing global trade. The Forest Health Initiative (FHI) was conceived in recognition of these issues and the challenges they present to biodiversity and ecosystem sustainability. The FHI concept is a new paradigm that engages social, regulatory, and biological science experts and various stakeholders in developing and evaluating options for solving our most critical forest health problems. Blight resistance in American chestnut was selected as a test case for FHI, and although not completely solved, significant progress is being made and the promise of effective resistance and chestnut restoration has been advanced. Clearly additional work remains for American chestnut as well as the many other severely threatened forest tree species. To address these additional species, we are building on the FHI experience and developing two complementary initiatives designed to improve the ability of the research community to identify, produce, and deploy effective tree resistance. A project-oriented initiative, Forest.Health, will prioritize the most seriously threatened species, bring researchers and stakeholders together to reach consensus on a science-based solution, and seek collaborators and funding to carry out the work. At the same time, a network-based participatory tree breeding consortium is proposed to ensure long-term development of publically available, genetically improved forest trees.

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