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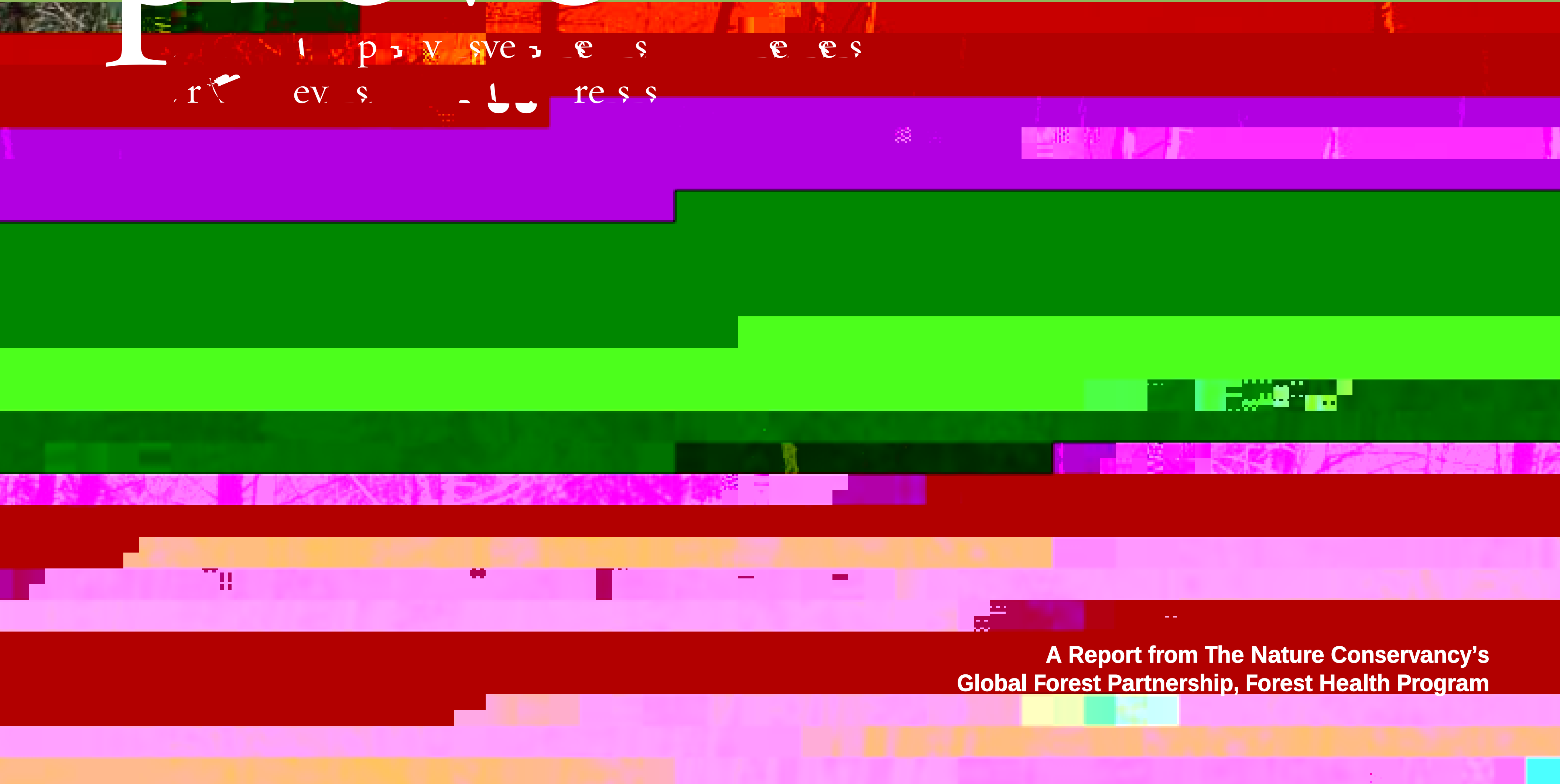

A Report from The Nature Conservancy's
Global Forest Partnership, Forest Health Program

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Urban and rural forests cover one-quarter of North America, sustaining biological diversity and providing clean air and water to hundreds of millions of people. Forest products and related industries employ more than 1.6 million people and contribute $231.5 billion to our nation's economy.[43] Forests also provide enjoyment to millions of hikers, campers, hunters, anglers, birders and other recreational users, whose activities and buying habits contribute tens of billions of dollars to local economies. Perhaps most important, our forests—urban, suburban, rural and wild—are part of our national heritage, providing beauty and shade to our homes and comfort to our spirits.

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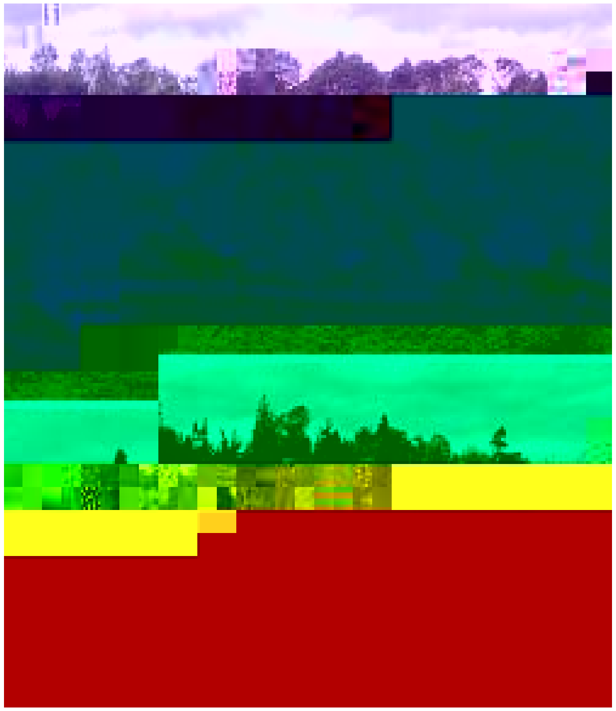

IN 2002, FEDERAL AND STATE AGENCIES cut and chipped some 1,000 trees in a neighborhood outside Seattle (before and after, above) to eradicate a voracious invasive insect: the citrus longhorned beetle, which was discovered on imported maple trees at a local nursery. State agencies, municipalities and private landowners often bear significant financial burdens—through no fault of their own—when imported nursery plants carry insects and diseases into the country.
© Washington State Department of Agriculture

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The United States can participate in international trade in nursery plants and protect its forests, but only if it develops a comprehensive pest detection and containment system that includes at least the following components:

1. Phase in regulations, both in U.S. policy and through international trade organizations, that ensure that only pest-free plants are shipped in international trade.
2. Improve the identification of potential pests. For example, ask botanical gardens overseas to monitor their plantings of North American species for pests and diseases.
3. Develop contingency plans for eradicating any outbreaks of the pests so identified.
4. Provide incentives to producers to implement clean stock programs and to shift to plant types that are unlikely to transport pests, such as tissue culture plantlets.
5. Inspect plants at their places of origin, before they are shipped to the United States.
6. Strengthen quarantines of imported plants to prevent the escape of any pests.
7. Create an insurance program under which nurseries that participate in clean stock and early detection programs can be reimbursed for losses suffered when pests damage inventory despite the nurseries' best efforts.
8. Improve measures to prevent the movement of infected nursery stock within the country.
9. Charge a modest user fee for the full range of plant imports to help fund the overall pest prevention and eradication programs.

Developing a comprehensive approach that meets the requirements of international trade agreements will be time consuming. In the short term, APHIS should institute the temporary NAP-PRA category to free up time and resources for the development of a long-term, effective system.

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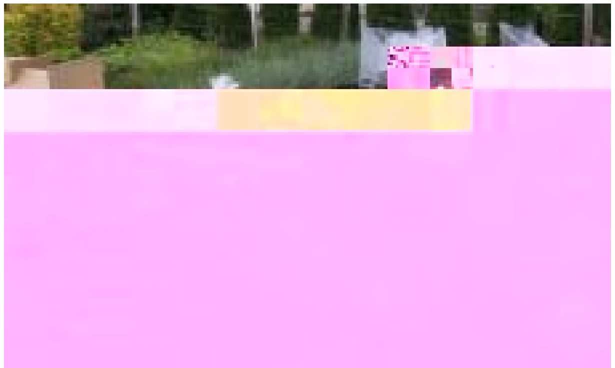

APHIS's TENTATIVE PROPOSALS don't address the problem of imported pathogens that evolve into more harmful forms once they arrive. Scientists have found as many as five species of the pathogenic genus *Phytophthora* (see sidebar, p. 15) on a single nursery plant—an indication that the pathogen mutates and hybridizes on the nursery plants themselves. © Canadian Food Inspection Agency; thanks to California Oak Mortality Task Force

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TABLE 3

Serious Forest Pests Unknown to Science at the Time of Their Introduction

• *Cryphonectria parasitica*	chestnut blight
• *Discula destructive*	dogwood anthracnose
• *Phytophthora lateralis*	Port-Orford-cedar root disease
• *Phytophthora ramorum*	sudden oak death
• *Sirococcus clavigignenti-juglandacearum*	butternut canker

OREGON OFFICIALS AND THE U.S. FOREST SERVICE are trying to eradicate sudden oak death by cutting and burning all host trees near the site of the infestations. APHIS has the authority to temporarily halt plant imports until it can assess how much risk certain species and places of origin pose to U.S. forests, which would help avoid expensive and damaging control efforts like those shown above. © Oregon Department of Forestry

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A concept paper developed by the Plants for Planting Panel of the North American Plant Protection Organization (an organization that coordinates efforts among Canada, the United States and Mexico to protect each country's plant resources from regulated plant pests, while facilitating international and intraregional trade)[51] notes that risk assessments based on lists of known quarantine pests do not address adequately numerous uncertainties, including the following:

- Many potential pests are obscure or unknown and most pathogens are poorly understood.
- The impact of insects and pathogens in their native environment is an unreliable indicator of their behavior in a new ecosystem.
- There is great potential for genetic change or variability in pests and hosts.

In addition, countries' reliance on visual inspection at the ports is undercut by the failure of resources to keep pace with the rapidly increasing volume of imports.

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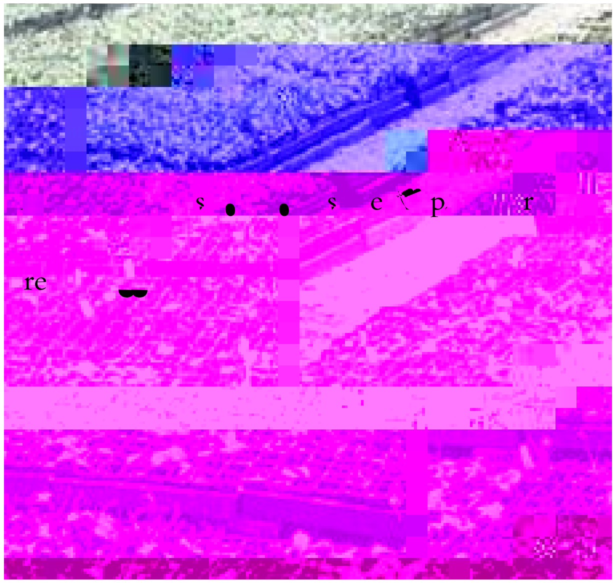

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The genus *Phytophthora* includes many of the world’s most destructive plant diseases, including the species that caused the Irish potato blight†in the mid 1800s as well as the cause of today’s sudden oak death. In an invaded plant, the *Phytophthora* organism penetrates the spaces between plant cells and even the cells themselves, eventually infesting much of the plantís tissue. *Phytophthora* species have shown the ability to shift hosts, sometimes infesting species previously thought to be resistant. The genus is not closely related to fungi, but shares a lineage with brown algae (better known as diatoms).[50]

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[35] Borys Tkacz, USDA Forest Service, pers. comm. Nov. 2006

[36] USDA Forest Service. Pest Risk Assessment on the Importation of Larch from Siberia and the Soviet Far East. Miscellaneous Publication No. 1495. September 1991.

[37] Ibid.

[38] Ibid.

[39] Ibid.

[40] Ibid.

[41] United States Department of Agriculture, Animal Plant Health Inspection Service. 2002. Citrus longhorned beetle program. King County, Washington. Environmental Assessment. April, 2002. USDA, APHIS, 12 pp.

[42] Nowak, D.J., J.E. Pasek, R.A. Sequeira, D.E. Crane, V.C. Mastro. 2001. Potential Effect of Anoplophora *glabripennis* (Coleoptera: Cermabycidae) on Urban Trees in the United States. Forest Entomology. February 2001.

[43] United States Department of Agriculture Forest Service New Forest Partnerships, Northeastern Area Association of State Foresters, (NAASF) (no date). People and Trees: Partners in Time

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