



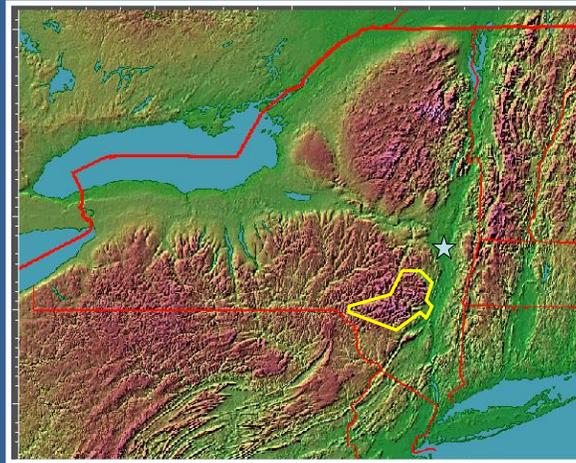
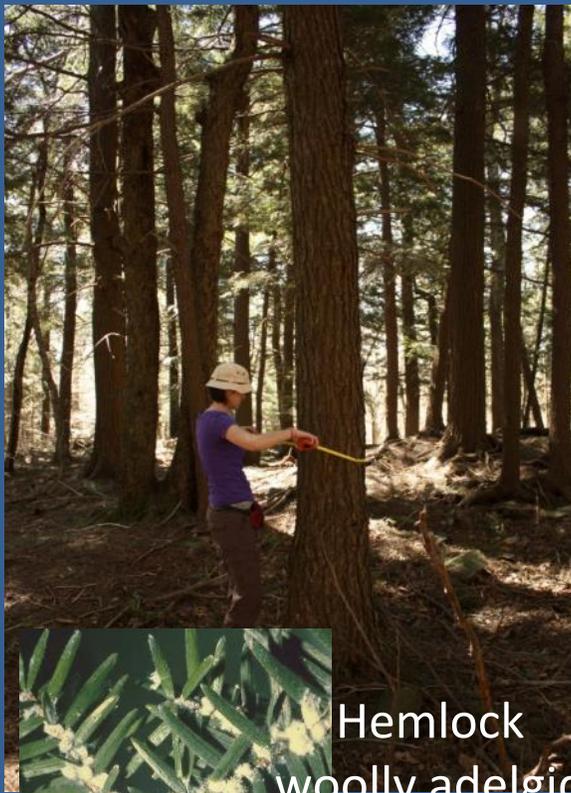
Preventing New Forest Pest Invasions with Tree-Smart Trade

Gary Lovett
Forest Ecologist



Cary Institute
of Ecosystem Studies

Catskill Mountains



Hemlock
woolly adelgid



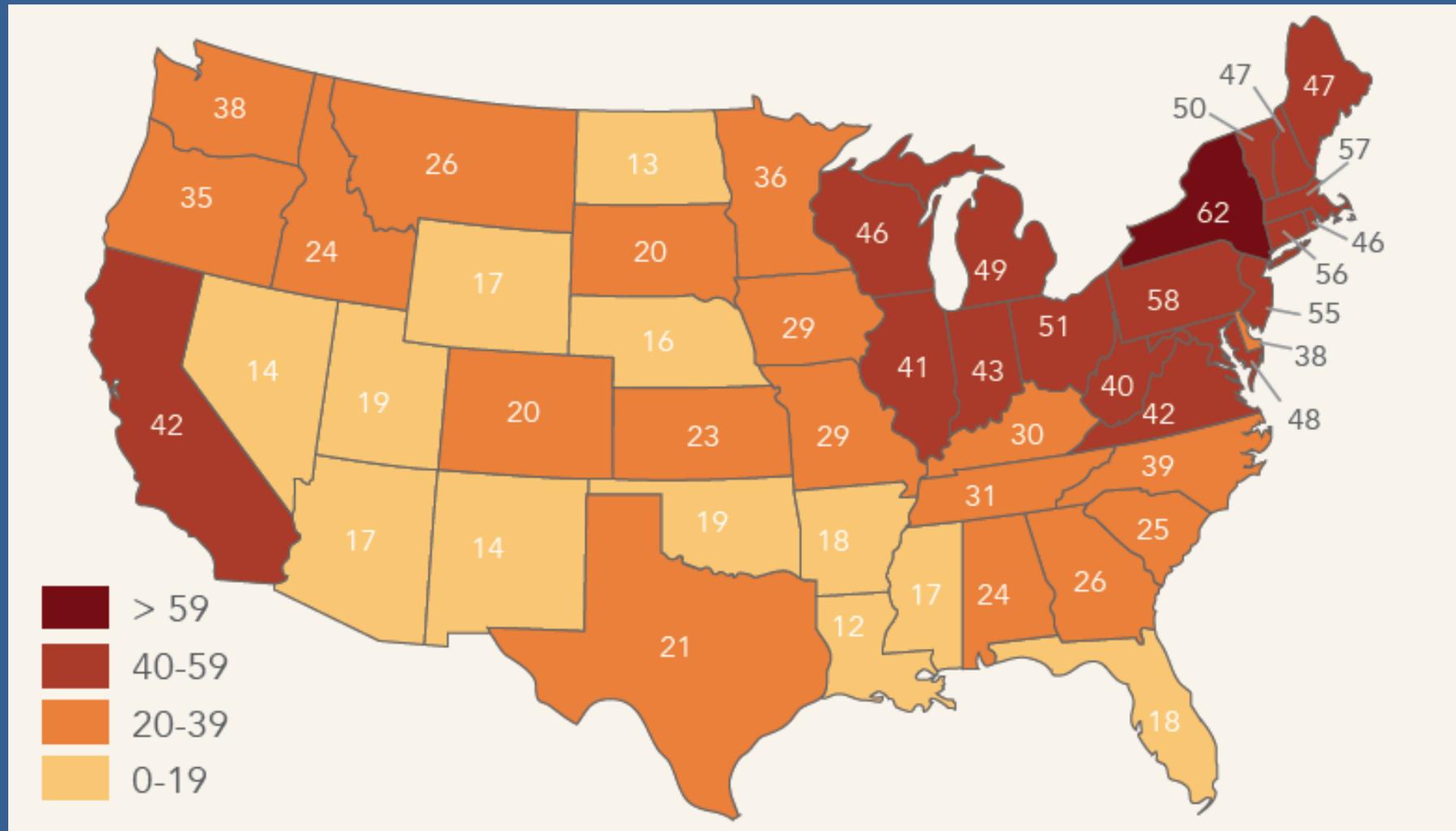
Gypsy
moth



Beech bark
disease



Imported forest pests are a serious problem in all 50 states



Data from US Forest Service



White pine blister rust



Emerald ash borer



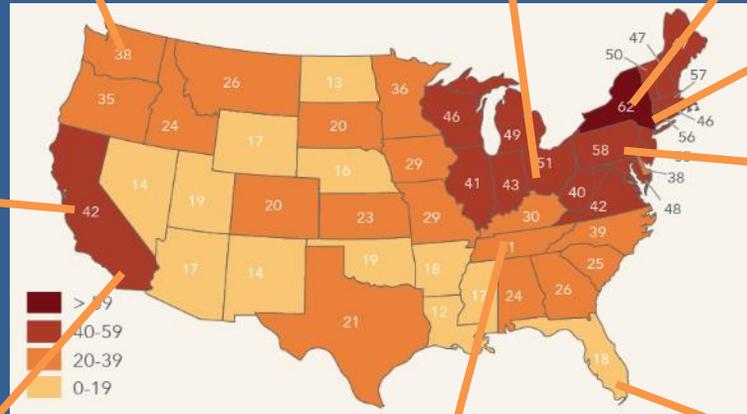
Beech bark disease



Hemlock woolly adelgid



Sudden Oak Death



Spotted lanternfly



Polyphagous shot hole borer



Thousand cankers disease



Laurel wilt

Comprehensive Synthesis of Forest Pest Issue: Links Science and Policy

Ecological Applications, DOI 10.1890/15-1176.1
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Nonnative forest insects and pathogens in the United States: Impacts and policy options

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entomologists,
economists and
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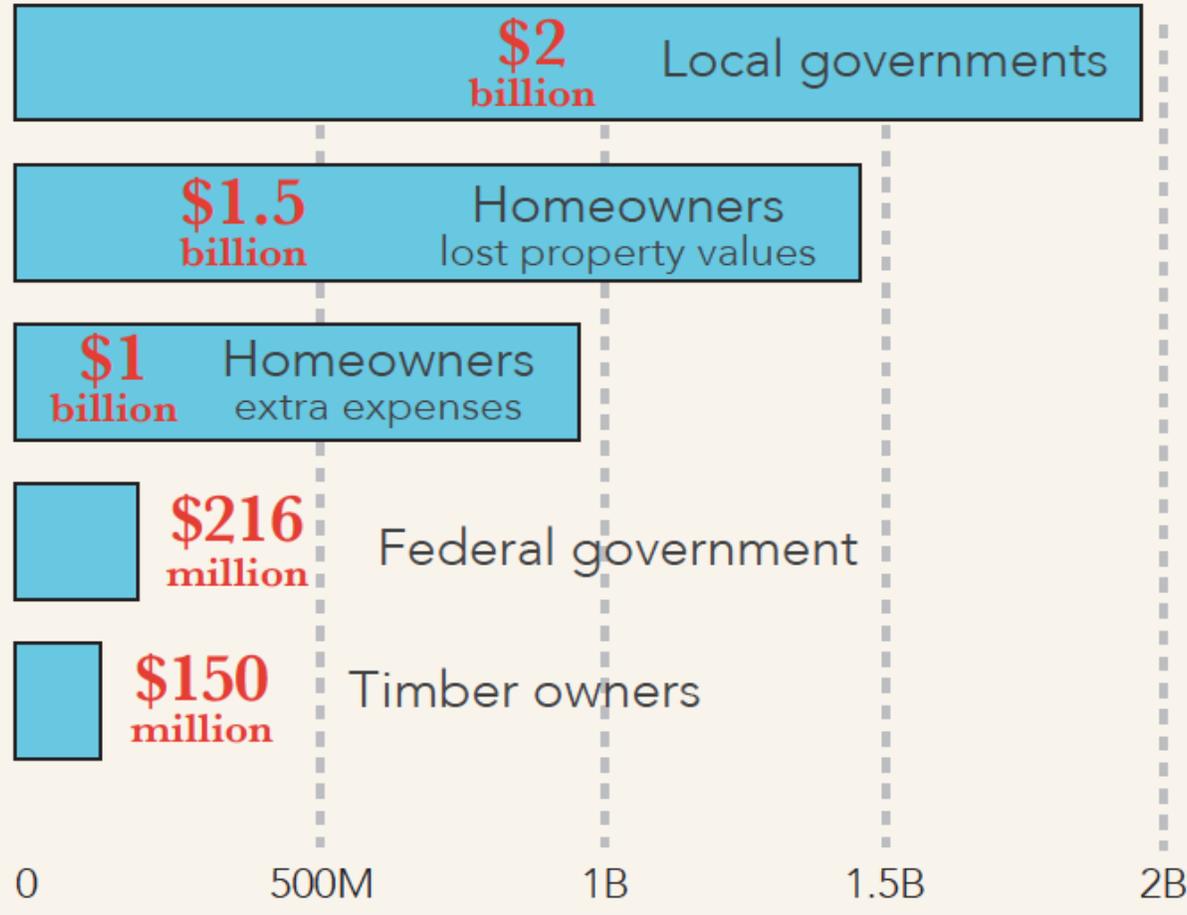
F. M. Kirby Foundation



Who pays and how much?



Annual cost of imported insect pests



Data from J. Aukema et al. 2011, PLOS One 6(9): e24587

...and this is an underestimate of true costs of imported pests.

Ecological Impacts

Introduced pests are the only threat that can reduce major canopy species to ecological insignificance in a matter of decades



American chestnut



Chestnut grove in North Carolina, ca. 1910

Impacts of forest pests reverberate through the ecosystem



Hemlock Woolly
Adelgid



Decline of old-growth forests,
release of invasive plants



Warming of streams may
impact fish



Decline of some bird
species



Changes in carbon storage
and nutrient retention



...and may last for centuries

This problem can be solved

Focus on:

- 1) **prevention** of importation and establishment
- 2) major **pathways** of introduction

Live woody plants for landscaping



~70% of forest pests
historically

Solid wood packaging material



> 90% of recent wood-boring insects

Current Policies are Inadequate

Live plant imports:

Must have certificate from exporting country and pass through inspection in U.S.



28% efficient

(Liebhold et al. Frontiers in Ecology and Environment 2012)

Current Policies are Inadequate

Wood Packaging Material:

Must be heat treated or fumigated and then stamped (ISPM-15)



➤ 36-52% effective

- Infestation rates about 0.1%
- Allows ~13,000 potential introductions of new wood-boring pests each year

(Haack et al. 2014)

- Potential 3x increase in wood-boring insects by 2050

(Leung et al. 2014)



Photo: Oregon Dept. of Agriculture

Inspection is necessary, but not sufficient.

- >25 million shipping containers come into the U.S. every year
- Only 1-2% are inspected
- Wood-boring insects are hard to find
- However, inspection is an effective deterrent and provides crucial data



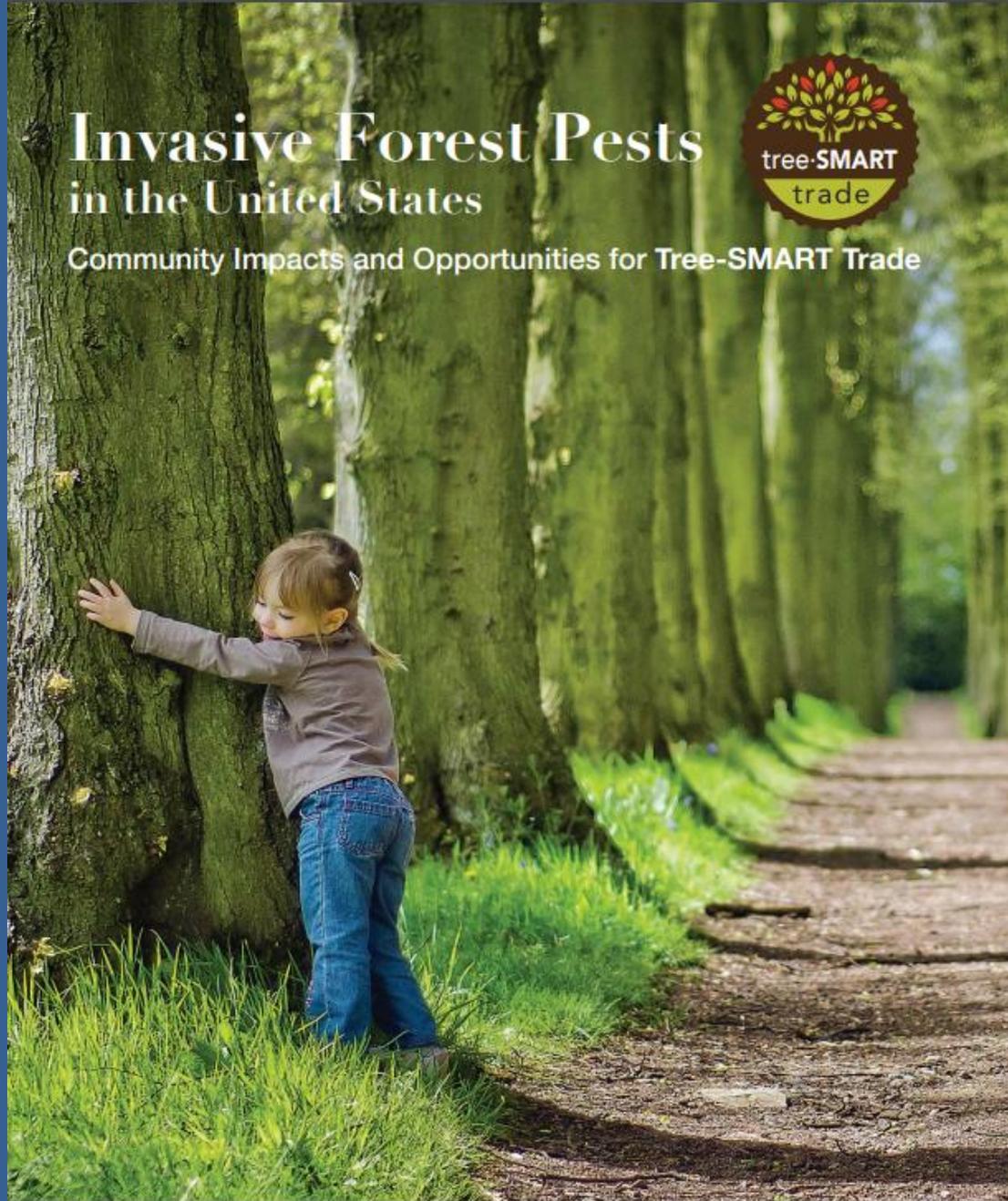


5 policy actions that will help prevent new forest pest invasions

- Switch to pest-free packaging material for international shipments
- Restrict the importation of live plants
- Expand early detection and rapid response programs
- Tighten enforcement of current regulations
- Expand international pest prevention programs with key trade partners

Invasive Forest Pests in the United States

Community Impacts and Opportunities for Tree-SMART Trade



Policy brief available at:
www.tree-smart-trade.org

We proposed phasing out solid wood from the packaging material of international shipments.

- Recommended replacing it with pest-free materials such as manufactured wood products (plywood, OSB, etc.)



- Pallets are an important market for low-grade wood products in the US and elsewhere
- Pallet shops provide decent jobs in rural communities
- Wood pallet producers have a well-financed trade association and well-connected lobbying apparatus in Washington

So:

- We are focusing for now on tightening enforcement and increasing penalties for non-compliance

Policy and Communication Activities

- Three Congressional briefings and many, many meetings with legislative offices, federal agencies and NGOs
- Hundreds of articles in news outlets; also Op-Eds and blog posts
- Working with private corporations to keep pests out of supply chains
- Starting new social media campaign



The Washington Post

The New York Times

The Boston Globe



Newsweek

Recent Successes



U.S. Customs and Border Protection

- ✓ New policy for more stringent enforcement of wood packaging regulations has had a large impact.



- ✓ A provision in the 2018 Farm Bill requires USDA to do a comprehensive report on the issue and possible solutions.



CLIPPER



- ✓ Working with a coalition of shipping companies to develop voluntary measures to minimize pests in wood packaging.

This problem can be solved. But we need your help. We all need to speak up for stronger federal action.



For more information:
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