Street Tree Challenges: Pests, Storms, and Budget Cuts — Oh My!

Eric Wiseman Mason Patterson Sarah Gugercin

Dept. of Forest Resources & Environmental Conservation

Virginia Tech

Virginia Cooperative Extension

A partnership of Virginia Tech and Virginia State University

www.ext.vt.edu





PRESENTATION OVERVIEW

Pest threats

- Climate and weather threats
- Economic threats
- Why we shouldn't despair



PRESENTATION OVERVIEW

Pest threats

- Climate and weather threats
- Economic threats

Why we shouldn't despair





July 26, 2012

VIRGINIA EXPANDS EMERALD ASH BORER QUARANTINE TO INCLUDE THE ENTIRE COMMONWEALTH

Contact: Elaine J. Lidholm, 804.786.7686

The Virginia Department of Agriculture and Consumer Services (VDACS) has expanded the Emerald Ash Borer (EAB) Quarantine to include the entire Commonwealth of Virginia. This action became necessary after the recent detection of EAB in the counties of Buchanan, Caroline, Giles, Hanover, Lee, Prince Edward, Stafford and Warren. The quarantine previously included Arlington, Charlotte, Clarke, Fairfax, Fauquier, Frederick, Halifax, Loudoun, Lunenburg, Mecklenburg, Pittsylvania and Prince William counties and the cities of Alexandria, Danville, Fairfax, Falls Church, Manassas, Manassas Park and Winchester.

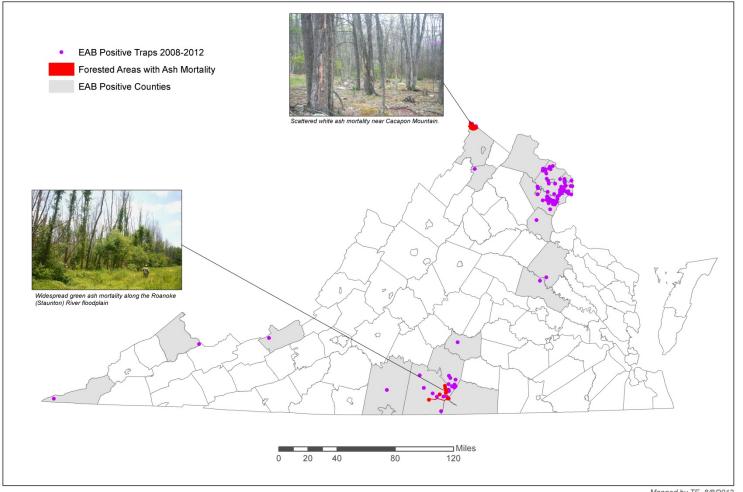
Under this statewide quarantine, the regulated articles, which include ash trees, green (non-heat treated) ash lumber and ash wood products, as well as hardwood firewood, are no longer subject to localized movement restrictions and may now move freely within the state.



The Emerald Ash Borer in Virginia

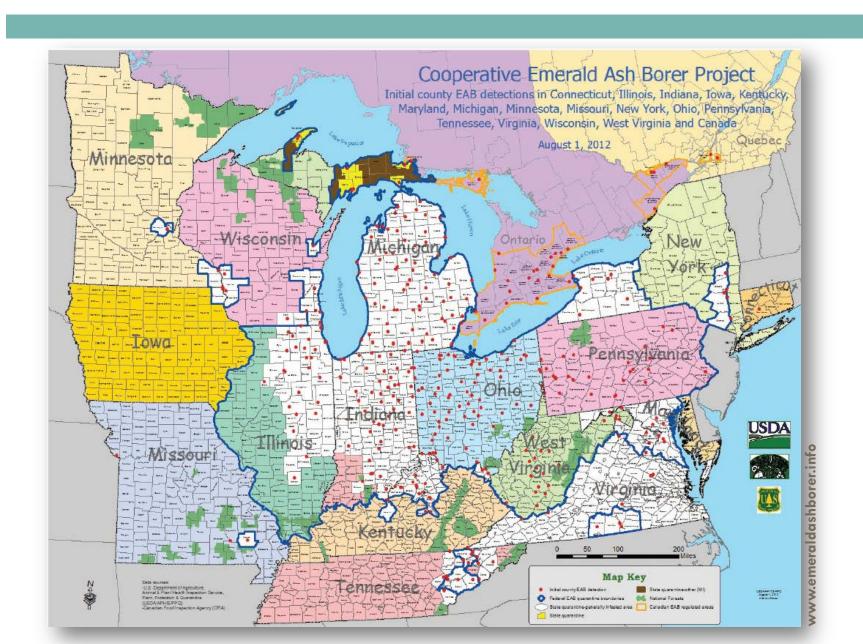












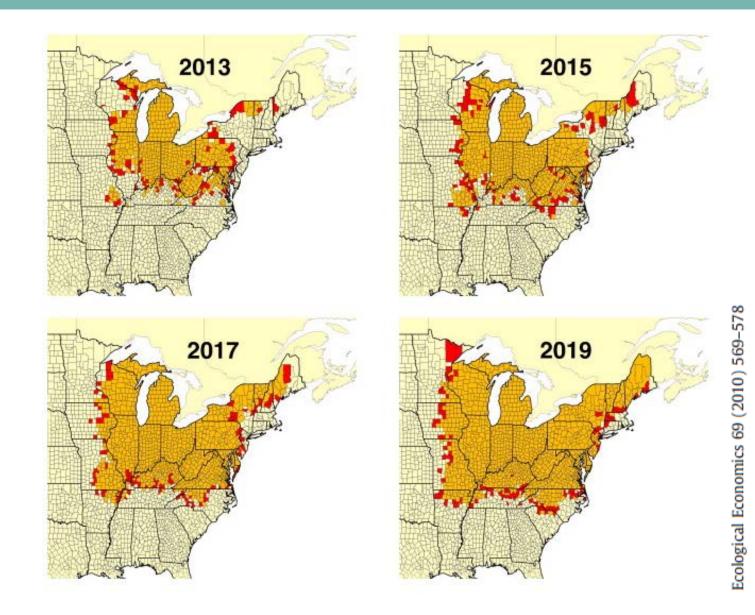
Ecological Economics 69 (2010) 569-578

Cost of potential emerald ash borer damage in U.S. communities, 2009–2019

Kent F. Kovacs ^{a,*}, Robert G. Haight ^b, Deborah G. McCullough ^{c,d}, Rodrigo J. Mercader ^c, Nathan W. Siegert ^c, Andrew M. Liebhold ^e

ABSTRACT

Emerald ash borer (*Agrilus planipennis* Fairmaire), a phloem-feeding beetle native to Asia, was discovered near Detroit, Michigan and Windsor, Ontario in 2002. As of March 2009, isolated populations of emerald ash borer (EAB) have been detected in nine additional states and Quebec. EAB is a highly invasive forest pest that has the potential to spread and kill native ash trees (*Fraxinus* sp.) throughout the United States. We estimate the discounted cost of ash treatment, removal, and replacement on developed land within communities in a 25-state study area centered on Detroit using simulations of EAB spread and infestation over the next decade (2009–2019). An estimated 38 million ash trees occur on this land base. The simulations predict an expanding EAB infestation that will likely encompass most of the 25 states and warrant treatment, removal, and replacement of more than 17 million ash trees with mean discounted cost of \$10.7 billion. Expanding the land base to include developed land outside, as well as inside, communities nearly double the estimates of the number of ash trees treated or removed and replaced, and the associated cost. The estimates of discounted cost suggest that a substantial investment might be efficiently spent to slow the expansion of isolated EAB infestations and postpone the ultimate costs of ash treatment, removal, and replacement.



State	Base case				
	Ash trees (1000s)	Ash trees treated or removed (1000s)	Cost (2009 \$ millions)		
Arkansas	3299	492	240		
Connecticut	556	11	4		
Delaware	42	41	22		
Illinois	5474	3497	2120		
Indiana	944	527	333		
Iowa	1149	611	321		
Kentucky	263	228	127		
Maine	968	531	255		
Maryland	940	883	533		
Massachusetts	811	46	18		
Michigan	1719	353	230		
Minnesota	1842	583	260		
Missouri	4449	3111	1680		
New Hampshire	518	259	121		
New Jersey	1435	630	286		
New York	2047	419	203		
North Carolina	662	185	84		
Ohio	1428	598	376		
Pennsylvania	1850	1347	786		
South Carolina	85	2	1		
Tennessee	4485	811	336		
Vermont	101	93	52		
Virginia and District of Columbia	1334	1126	641		
West Virginia	409	405	237		
Wisconsin	1092	988	566		
Total	37,902	17,777	9832		

Ecological Economics 69 (2010) 569-578



SMA POSITION PAPER

EMERALD ASH BORER

A PERSPECTIVE ON PLANNING AND MANAGEMENT

EXECUTIVE SUMMARY

The SMA believes that every community that includes ash trees (Fraxinus sp.) as a component of its urban forest should adopt an EAB management plan. The municipal arborist/urban forester in a community is the best person to lead local planning and management efforts.

This plan should be in place and updated periodically, whether a local EAB infestation is expected within months or not for decades, because human transported populations of EAB can arrive unexpectedly in even the most geographically isolated community. Prudent canopy conservation, public safety, and fiscal responsibility should be the guiding principles for the management of Emerald Ash Borer in urban areas. The most desirable outcome will be achieved when the most current knowledge and science is combined with local urban forest characteristics, resident values and priorities, and community resources and expectations to formulate a management plan.

History and Background

Emerald ash borer (EAB). Agrilus planipennis Fairmaire, is an exotic beetle that was discovered in southeastern Michigan near Detroit in the summer of 2002. It was detected in Windsor, Ontario across the Detroit River shortly thereafter. The adult beetles nibble on ash foliage but cause little damage. The larvae (the immature stage) feed on the inner bark of ash trees, disrupting the tree's ability to transport water and nutrients. Emerald ash borer is native to Asia, and probably arrived in the United States around 1990 in solid wood packing material carried in cargo ships or airplanes. Emerald ash borer was found in Ohio in 2003, northern Indiana in 2004, northern Illinois and Maryland in 2006, western Pennsylvania and West Virginia in 2007, Wisconsin, Missouri and Virginia in summer 2008, Minnesota, New York, Kentucky in the spring of 2009. Iowa in spring of 2010, and Tennessee in the summer of 2010. It continues to spread. Since its discovery, EAB has:

- Killed tens of millions of ash trees in southeastern Michigan alone, with tens of millions more lost in other states as well as in Ontario and Ouebec.
- Caused the US Department of Agriculture, the Canadian Food Inspection Agency and other regulatory agencies to enforce quarantines (Michigan, Illinois, Indiana, Iowa, Maryland, Minnesota, Missouri, Ohio, New York, Ontario, Pennsylvania, Quebec, Tennessee, Virginia, West Virginia, Wisconsin, and Kentucky) and levy fines to prevent potentially infested ash trees, logs or hardwood firewood from moving out of areas where EAB occurs.
- Cost municipalities, property owners, nursery operators and forest products industries tens of millions of dollars.

Since its arrival the Emerald Ash Borer has rapidly expanded its range. EAB has killed an estimated 50 -100 million ash trees so far and threatens to kill most of the 7.5 billion ash trees throughout North



replacing infested ash trees. http://cfs.nrcan.gc.ca/e-bulletin/5

Approved by SMA Board 5/3/2012 -







Developed by: Eric Wiseman, Sarah Gugercin, Dave Close,

and Heather Boyd

Funded by: The USDA Forest Service, Forest Health Protection

The course comprises of six training modules and is hosted on the National Plant Diagnostic Network (NPDN) Training Site. More information about this module

To take the modules, you must first create a new account (free) on the NPDN website.

Go to the NPDN Co-Line Crop Biosecurity Course Chilli Thetes Introduction to the Enerald Ash Borer Module. Emerald Ash Borer Worlforing Worksle. Imerald Ash Borer Management Module

outins Hash play-in

Once you have registered

with NPDN, you will be taken to the training module page where you will find the links to the six emerald ash borer modules (or click here).

If you plan to take this course for Continuing Education Units (CEU's), you must receive a 70% on all 5 post-tests.

Once you have successfully completed the tests, a link to the certificate of completion (.pdf) appears above your module scores.

You must email or send this certificate to your organization in order to receive CEU's.

Organizations that have approved this course for 1.5 CEU's:



Related Links

NPDN

emeraldashborer.info

VT Urban Forestry Gateway

Horticulture Links

Engaged Department Award

Hahn Horticulture Garden

Campus Greenhouses

Giving to Horticulture

Master Gardener Program

Beautiful Gardens®

Department of Horticulture

Virginia Tech

301 Saunders Hall (0327)

Blacksburg, VA 24061

540-231-5451

horticulture@vt.edu

Department Head:

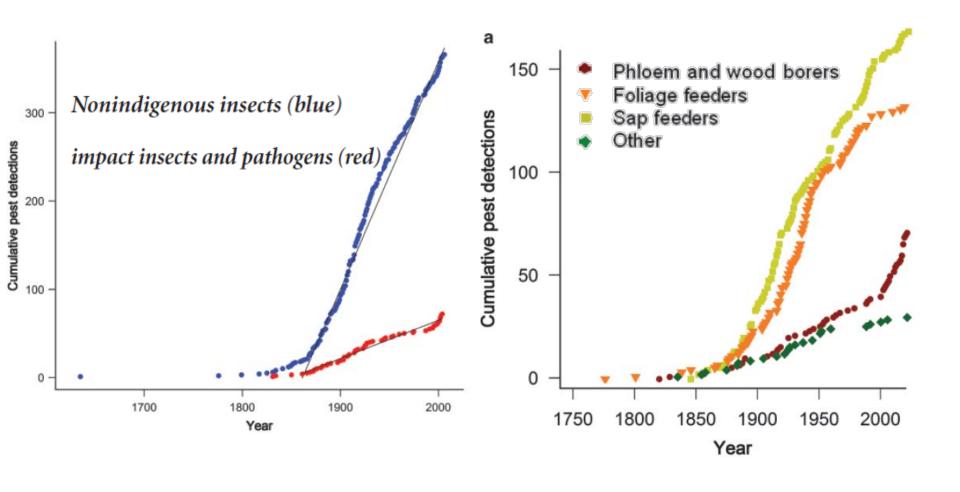
Dr. J. Roger Harris

Historical Accumulation of Nonindigenous Forest Pests in the Continental United States

BioScience • December 2010 / Vol. 60 No. 11

JULIANN E. AUKEMA, DEBORAH G. McCULLOUGH, BETSY VON HOLLE, ANDREW M. LIEBHOLD, KERRY BRITTON, AND SUSAN J. FRANKEL

Nonindigenous forest insects and pathogens affect a range of ecosystems, industries, and property owners in the United States. Evaluating temporal patterns in the accumulation of these nonindigenous forest pests can inform regulatory and policy decisions. We compiled a comprehensive species list to assess the accumulation rates of nonindigenous forest insects and pathogens established in the United States. More than 450 nonindigenous insects and at least 16 pathogens have colonized forest and urban trees since European settlement. Approximately 2.5 established nonindigenous forest insects per year were detected in the United States between 1860 and 2006. At least 14% of these insects and all 16 pathogens have caused notable damage to trees. Although sap feeders and foliage feeders dominated the comprehensive list, phloem- and wood-boring insects and foliage feeders were often more damaging than expected. Detections of insects that feed on phloem or wood have increased markedly in recent years.





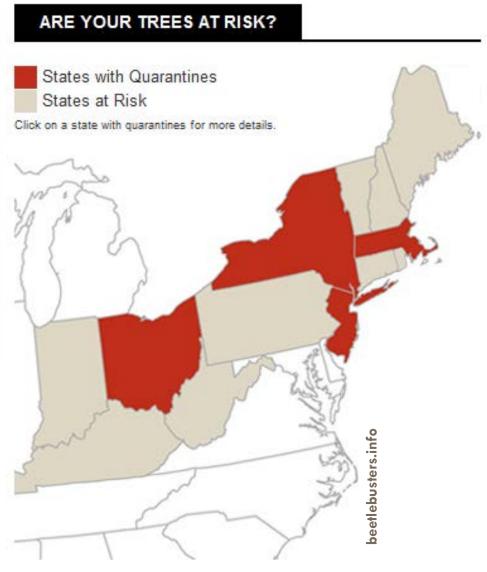
TREES AT RISK

- Ash
- Birch
- Elm
- · Goldenrain tree
- Hackberry
- Horsechestnut
- Katsura

- · London Planetree
- Maple
- Mimosa
- Mountainash

beetlebusters.info

- Poplar
- Willow



PRESENTATION OVERVIEW

Pest threats

- Climate and weather threats
- Economic threats

Why we shouldn't despair



Climate Change: U.S. Heat Waves, Wildfires And Flooding Are 'What Global Warming Looks Like'

First Posted: 07/03/2012 8:04 am [Updated: 07/03/2012 1:42 pm



Follow > Climate Change, Climate Change, Natural Disasters, Video, Heat Wave, US Heat Wave, Climate Change Heat Waves, Flooding Climate Change, Global Warming Heat Wave, Heat Waves 2012, Us Wildfires, Wildfires Climate Change, Green News

SHARE THIS STORY
Get Green Alerts
Sign Up
Submit this story 😭 🔯 🔕

WASHINGTON — Is it just freakish weather or something more? Climate scientists suggest that if you want a glimpse of some of the worst of global warming, take a look at U.S. weather in recent weeks.

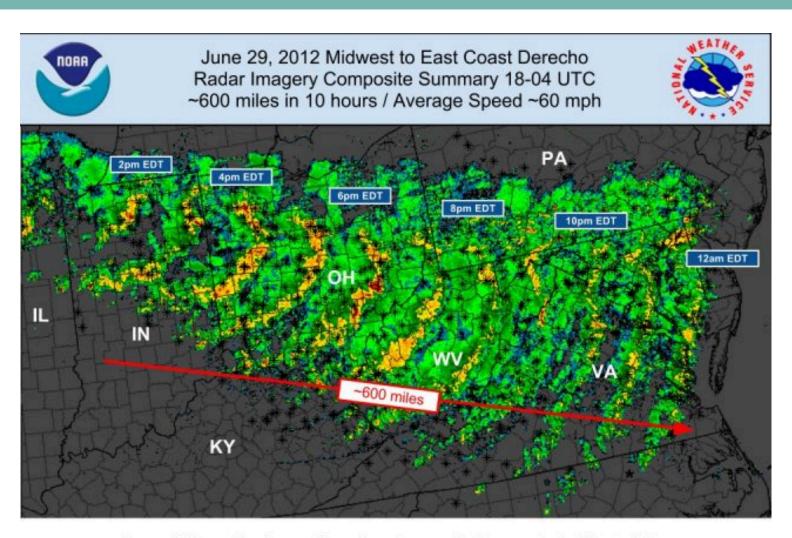
Horrendous wildfires. Oppressive heat waves. Devastating droughts. Flooding from giant deluges. And a powerful freak wind storm called a derecho.

These are the kinds of extremes experts have

predicted will come with climate change, although it's far too early to say that is the cause. Nor will they say global warming is the reason 3,215 daily high temperature records were set in the month of June.

"This is what global warming looks like at the regional or personal level," said Jonathan Overpeck, professor of geosciences and atmospheric sciences at the University of Arizona. "The extra heat increases the odds of worse heat waves, droughts, storms and wildfire. This is certainly what I and many other climate scientists have been warning about."

www.huffingtonpost.com/2012/07/03



Over 800 preliminary thunderstorm wind reports indicated by *

Peak wind gusts 80-100mph. Millions w/o power.

Summary Map by G. Carbin NWS/Storm Prediction Center

'Derecho' phenomenon responsible for violent line of US storms

Rare mix of atmospheric conditions combined to create longlasting line of thunderstorms that killed 13 across the country

Matt Williams in New York

> Follow

guardian.co.uk, Sunday 1 July 2012 14.21 EDT

Jump to comments (16)

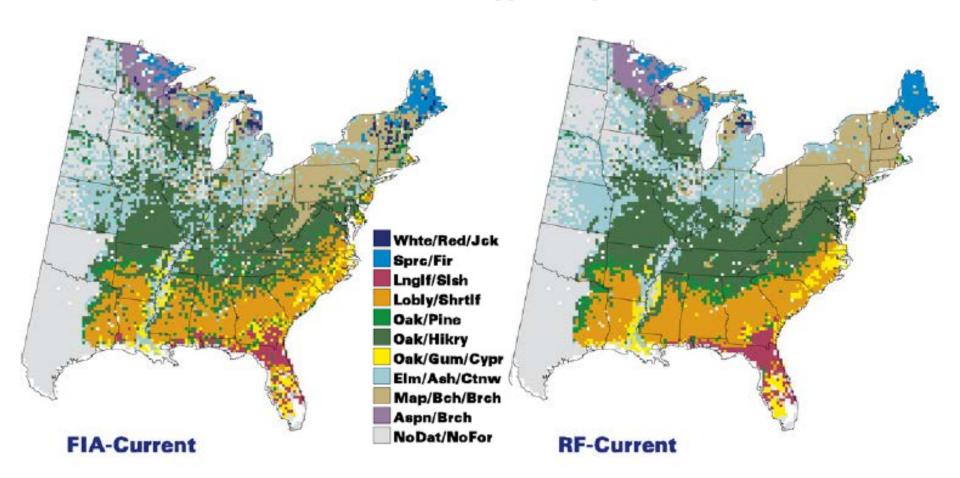


An uprooted tree lies across in Washington DC the morning after a violent storm swept through the area. Photograph: Mandel Ngan/AFP/Getty Images

vww.auardian.co.uk/scier

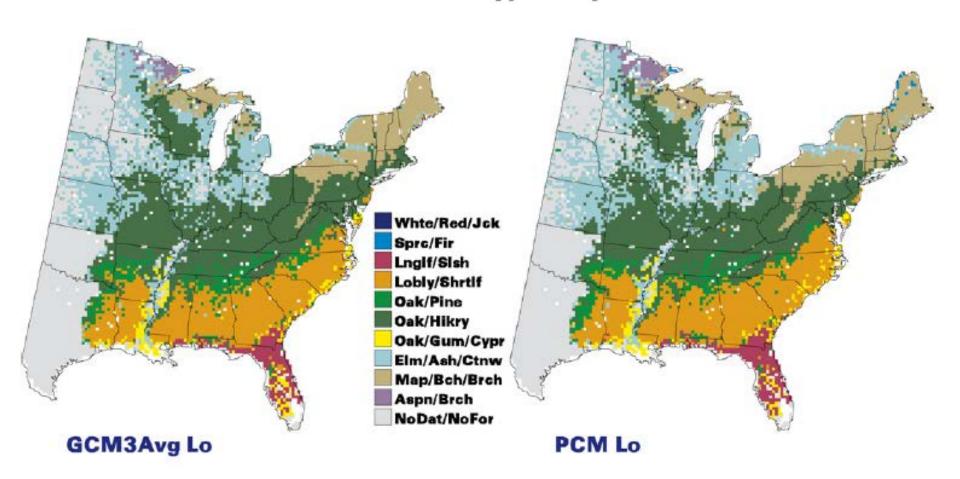
L.R. Iverson et al./Forest Ecology and Management 254 (2008) 390-406

Forest Type Maps



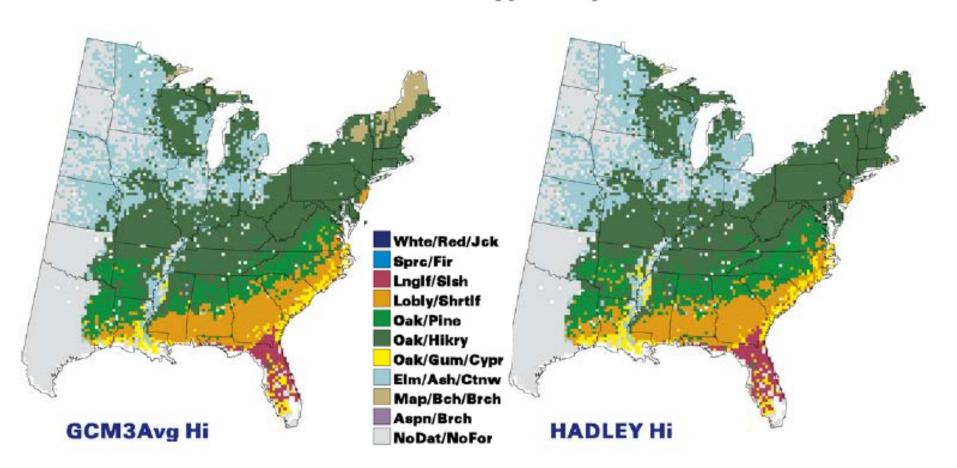
L.R. Iverson et al./Forest Ecology and Management 254 (2008) 390-406

Forest Type Maps

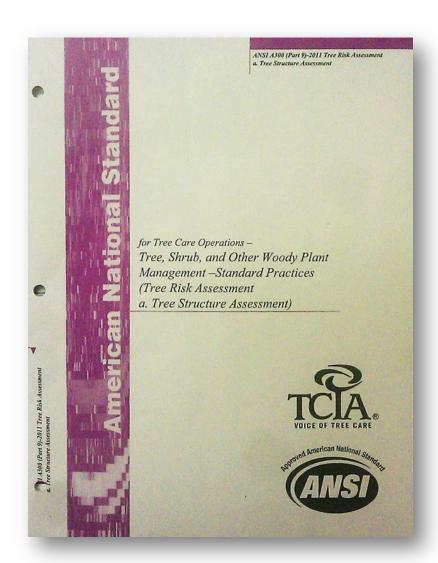


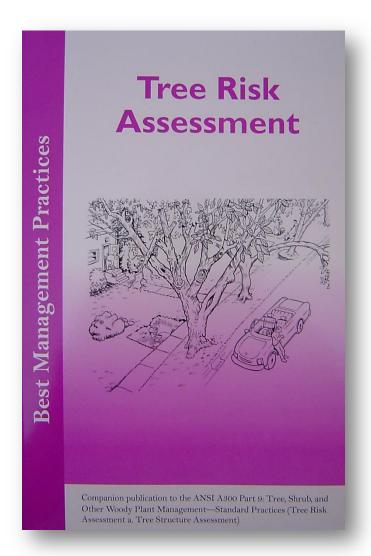
L.R. Iverson et al./Forest Ecology and Management 254 (2008) 390-406

Forest Type Maps

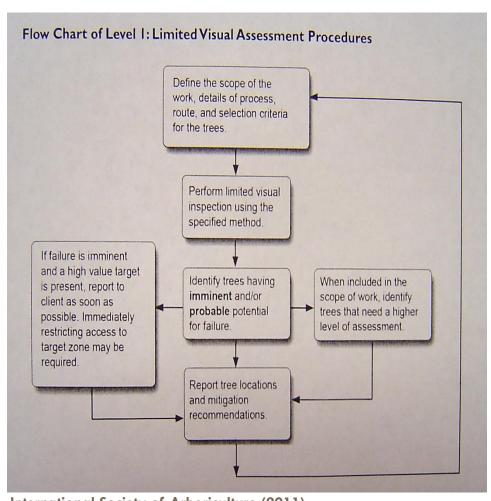








What other taxonomic vulnerabilities might VA have?





International Society of Arboriculture (2011)

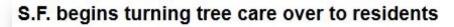
PRESENTATION OVERVIEW

Pest threats

- Climate and weather threats
- Economic threats

Why we shouldn't despair





John Wildermuth, Chronicle Staff Writer Published 4:00 a.m., Monday, January 16, 2012

VIEW: LARGER | HIDE

1 of 8

■ PREV NEXT ▶

Trees on Fulton Street near Fillmore (right foreground) have already been tagged with a notice about homeowners new tree responsabilities. With a dwindling budget, San Francisco's Dept. of Public Works plans to hand over the care of thousands of trees to residents who live nearby. A group of arborists are currently inspecting the health of the trees. Photo: Brant Ward, The Chronicle / SF

The Washington Post

Back to previous page

Fairfax County executive asks agencies to prepare for budget cuts

Published: August 6

Fairfax County's top appointed official has asked agencies to scour for cuts of as much as 5 percent over each of the next two years because of looming budget shortfalls.

County Executive Edward L. Long Jr. did not specify dollar amounts but in a memo Monday told county employees that cuts are necessary because of uncertainty over federal spending and slower-than-expected growth in Fairfax. He also warned that jobs may have to be eliminated in 2013 and 2014.

"This could mean that positions will be cut," he said. "I know that many of the reductions will significantly impact the ability of county agencies to provide services."

Fairfax has withstood the recession far better than many other parts of Virginia and the nation, but particular agencies have had to make cuts, including not hiring to fill vacant jobs. Still, the county has increased spending incrementally — 2 percent in general fund dollars this fiscal year as part of a county budget of more than \$6.5 billion.

"Everyone would love to think we're bouncing back from the recession," said Sharon Bulova (D), Board of Supervisors chairman. "But that's just not happening."

FY 2013 Budget Justification

USDA Forest Service

Three-Year Summary of Appropriations

<u> </u>	(dollars in thousands)					
	FY 2011 Enacted	FY 2012 Enacted P	FY 2013 resident's Budget	_	Percentage Of Change	
State & Private Forestry						
Landscape Scale Restoration	0	0	18,000	18,000		
Forest Health Management - Federal Lands	56,737	47,425	63,000	15,575	33%	
Forest Health Management - Cooperative Lands	48,821	39,999	49,000	9,001	23%	
State Fire Assistance	32,358	30,488	0	-30,488	-100%	
Volunteer Fire Assistance	6,680	6,669	0	-6,669	-100%	
Forest Stewardship	32,548	28,814	24,778	-4,036	-14%	
Forest Legacy Program	52,894	53,303	60,000	6,697	13%	
Community Forest and Open Space Conservation	1,000	1,997	4,000	2,003	100%	
Urban and Community Forestry	32,040	31,327	28,040	-3,287	-10%	
Economic Action Programs 110/. 0 60/	0	0	0	0		
Forest Resources Information and Analysis 11%; 0.6%	5,026	4,917	0	-4,917	-100%	
International Forestry	9,492	7,987	3,912	-4,075	-51%	
State and Private Forestry Total	277,596	252,926	250,730	-2,196	-1%	







Virginia Loves Trees

Growing Greener Communities in Virginia

Home

Get the License Plate

License Plate Info

About Us

Donate Now!

Welcome!

Apply for your Virginia Loves Trees license plate TODAY!!! We are still accepting pre-sale applications. Once we receive 450 applications and

Once we receive 450 applications and approval from the Department of Motor Vehicles, production of these license plates will begin!



Apply Now!

Can't apply for the license plate? You can still help grow greener communities in Virginia by donating today!

Donate

Related Links

Trees Virginia

Virginia Tech Urban Forestry

License Plate FAQ's

Still have questions? Contact Us!

Sign up for Email Updates

Contact Us

Sarah Gugercin, Application Coordinator VA Loves Trees P.O. Box 11538 Blacksburg, VA 24062

PRESENTATION OVERVIEW

Pest threats

- Climate and weather threats
- Economic threats

Why we shouldn't despair



SWOT ANALYSIS





search...

Welcome to Trees Virginia

The mission of the Virginia Urban Forest Council (Trees Virginia) is to enhance the quality of life through stewardship of our Commonwealth's urban and community trees. TREES VIRGINIA, registered with the state as Virginia Urban Forest Council, is a private, non-profit organization established in 1990. The organization works to promote an awareness of our community forests and the value of trees. The Council is guided by a volunteer Board of Directors who meet quarterly. Council represents a wide range of professions, organizations and volunteers who are interested in stimulating a public awareness of the role trees and forests play in the urban environment.

Our philosophy is providing a healthy place for forests in our urban communities; this requires that we work together to protect and enhance the natural environment. All who live and work in the communities around Virginia affect the condition of the forested parks and green areas, as well as the trees along streets, in yards, and in front of offices and businesses. If you are interested in supporting or promoting the vision of a healthy forest within our communities, make a tax-deductible donation to Trees Virginia!

Northern Virginia Urban Forestry Quarterly Roundtable

Trees, People and the Planning Process

Thursday, February 23, 2012
Prince William County, Development Services Building, 5 County Complex Ct.,
Woodbridge, VA. Conference Room 202

9:30 – 10:00 Sign-in and Networking

10:00 Welcome

Larry Finch, Chair, NOVA Urban Forestry Roundtable

10:05 – 10:20 The Planning Process Exposed: An Overview

 Jonah Fogel, Ph.D. Community Viability Specialist, Virginia Cooperative Extension





TAKE ACTION

SUFC MEMBERS

SUFC FACT SHEET

VIBRANT CITIES

MEMBERS ONLY

Sign up for our eNewsletter

What is the Sustainable Urban Forests Coalition?

The SUFC is an assembly of national organizations working to advance a unified urban forest agenda for our nation's communities.

The SUFC is composed of city planners, educators, landscape architects, non-profit leaders, scientists, arborists, foresters, nurserymen and women, and many other professionals who care for, monitor and advocate for trees and our urban forests as a whole.

All SUFC member organizations endorse a common set of Operating and Policy Principles.

SUFC Principles

How does the SUFC Define Urban Forests?

SUFC views urban forests as the aggregate of all vegetation and green spaces that provide a myriad of environmental, health and economic benefits for a community.

Why is this Coalition Necessary?

Although the functions and benefits of urban forests are becoming increasingly clear, there is a lack of understanding about the full range of urban forests within a community's infrastructure. Coalition members work together to educate and advocate for better maintained and expanded urban forests nationwide with a unified national voice.

Individually, each coalition member organization serves a professional constituency well. However, a unified national coalition strengthens relationships, creates synergy between like-minded organizations, and builds bridges between diverse organizations with overlapping interests.



2012 ACTrees Green Infrastructure Summit



March 6-7, 2012 Washington, DC

Alliance for Community Trees held its fourth annual Public Policy Summit on Wednesday, March 7, 2012, in Washington, DC. This year's event on Capitol Hill focused on national public policy and educating Congressional leaders about green solutions to environmental, health, and economic challenges facing cities.

Alliance for Community Trees board members, member organization representatives, and Sustainable Urban Forests Coalition partners crisscrossed the Capitol on the beautiful early spring day, meeting with 50 Congressional offices to discuss the value of city trees and encourage smart investment in urban forests.

View photos from the 2012 ACTrees Green Public Policy Summit:

