Forest Health Pest Update

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VDOF Forest Health Program

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VDOF Forest Health Program

Forest Health

Every step of establishing and maintaining a forest involves forest health

- properly establishing appropriate, healthy trees on productive sites;
- imp
- redu
- well

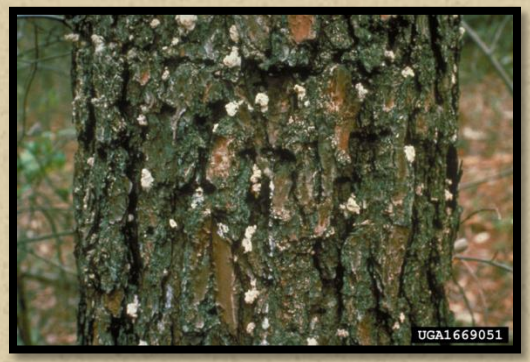
- reducing losses due to pest organisms;

VDOF Forest Health Program

- Monitor and Survey
- Integrated Pest Management
- Technical Assistance
- Resource Assessment, GIS, Data Collection

Southern Pine Beetle

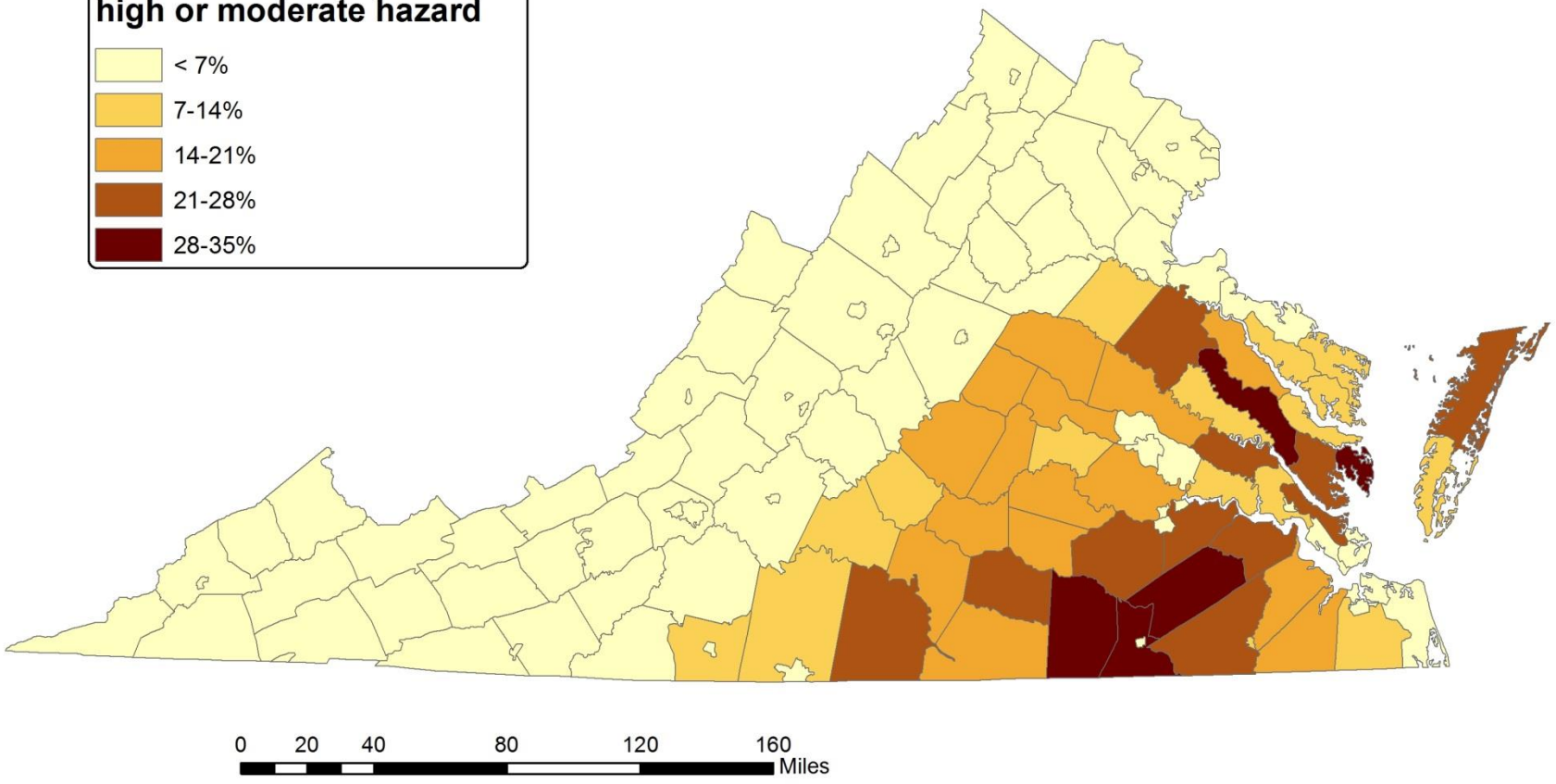
- The most destructive insect pest of pine in the Southeast US
- Resin masses, S-shaped galleries, foliage discoloration often signs of attack
- Native!



SPB in Virginia

- Very few outbreaks of concern in last 15 years
- 14% of Virginia forest type is classified as pine plantation
- How do we account for this insect and what is the risk?

Southern Pine Beetle Virginia Hazard Map



L. Chamberlin, 1/24/2019

Hazard rating based on US Forest Service 2012 National Insect and Disease Risk Map over a 15 year period (2013-2027)

SPB in Virginia

- Trapping occurs each spring starting around time of redbud bud break
- Lindgren non-sticky barrier trap with 12 funnels
- Pheromone lure composed of frontalin, Sirex lure and *endo*-brevicomin
- Traps are checked each week
- 24 traps in 2018, 25 traps in 2019

SPB in Virginia

- All samples collected are sent to VDOF Forest Health to be identified and counted.
- Also looking for the associated predator, the clerid beetle.
- Determining the ratio of clerid beetles to SPB can be an indicator of SPB infestation trends and levels to come.

Erich G. Vallery, USDA Forest Service - SRS-4552, Bugwood.org

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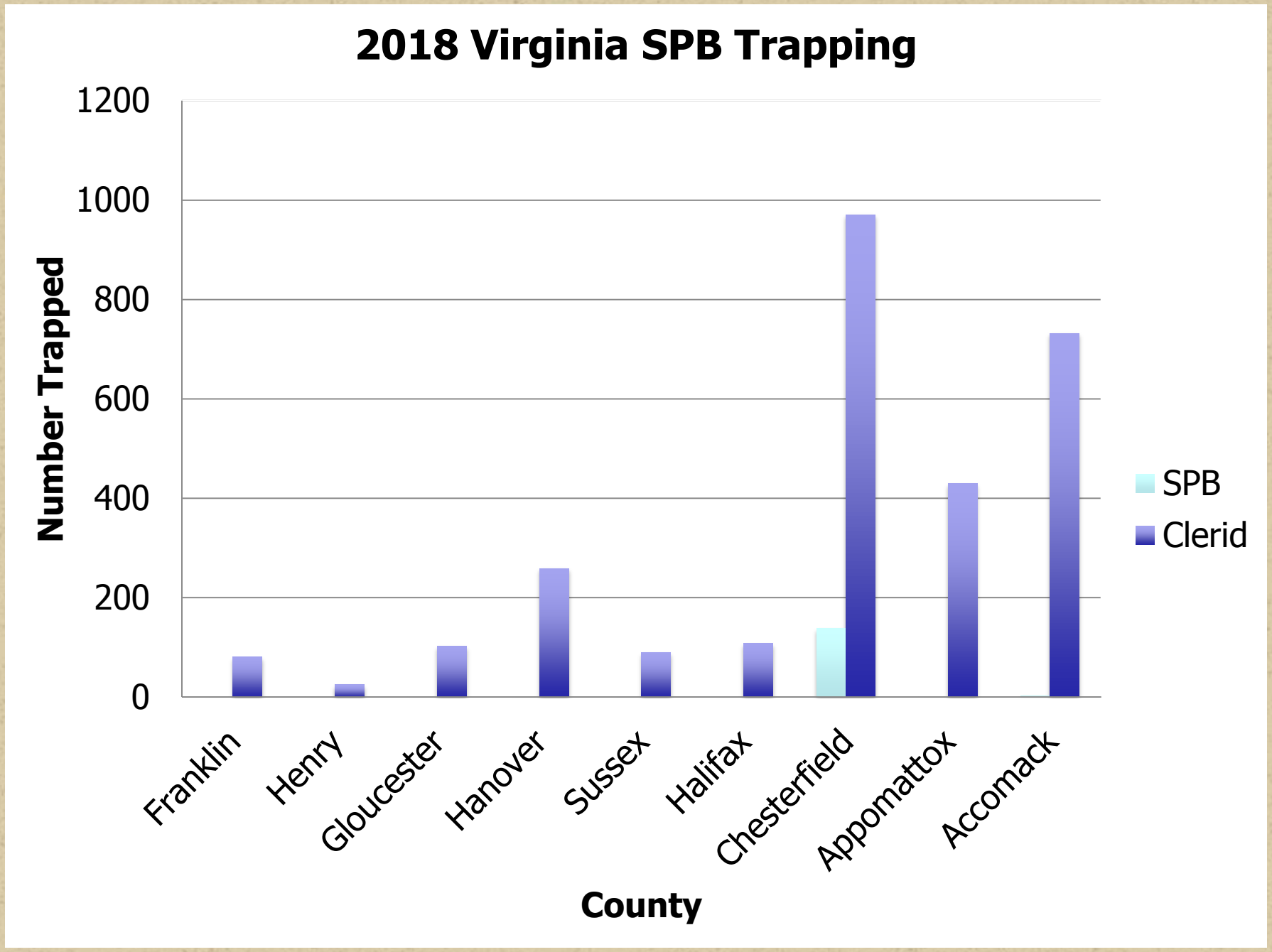

2018 Virginia SPB Trapping
Number Trapped
1200
1000
800
600
400
200
0
Franklin
Henry
Gloucester
Hanover
Sussex
Halifax
Chesterfield
Appomattox
Accomack
County
SPB
Clerid

2015 SPB Spots, Chincoteague NWR

Fall 2018 Aerial Survey- VDOF Forest Health

Fall 2018 Aerial Survey- VDOF Forest Health
Pony Pen from Air and Ground

Pine Bark Beetle Cost-Share

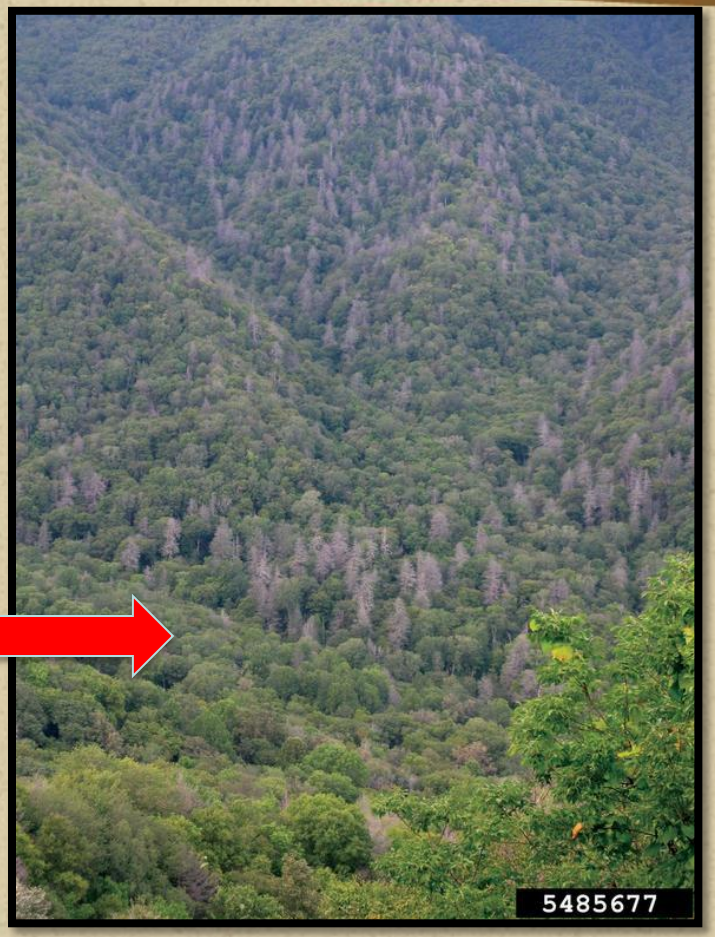
Available Cost-Share Programs

- **Pre-commercial thinning for landowners**
- **Longleaf Pine Restoration for Landowners**
- **First Commercial Thinning for Loggers**

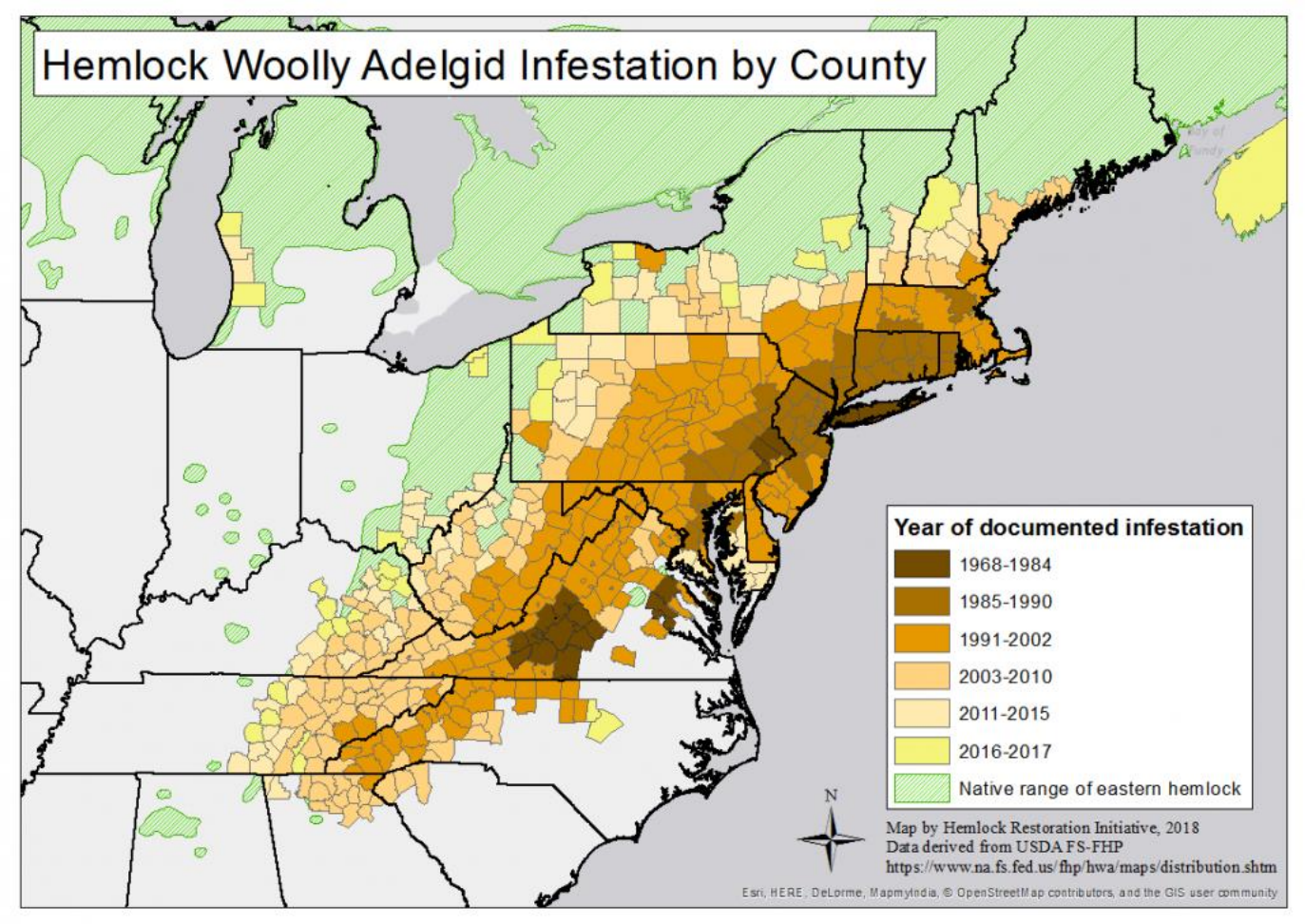
Hemlock Woolly Adelgid

- First found in Richmond, VA in the early 1950s
- Native range throughout Asia and Pacific northwest of United States where it is innocuous and not considered a pest
- Produces a filamentous wax-like product to protect itself and its eggs

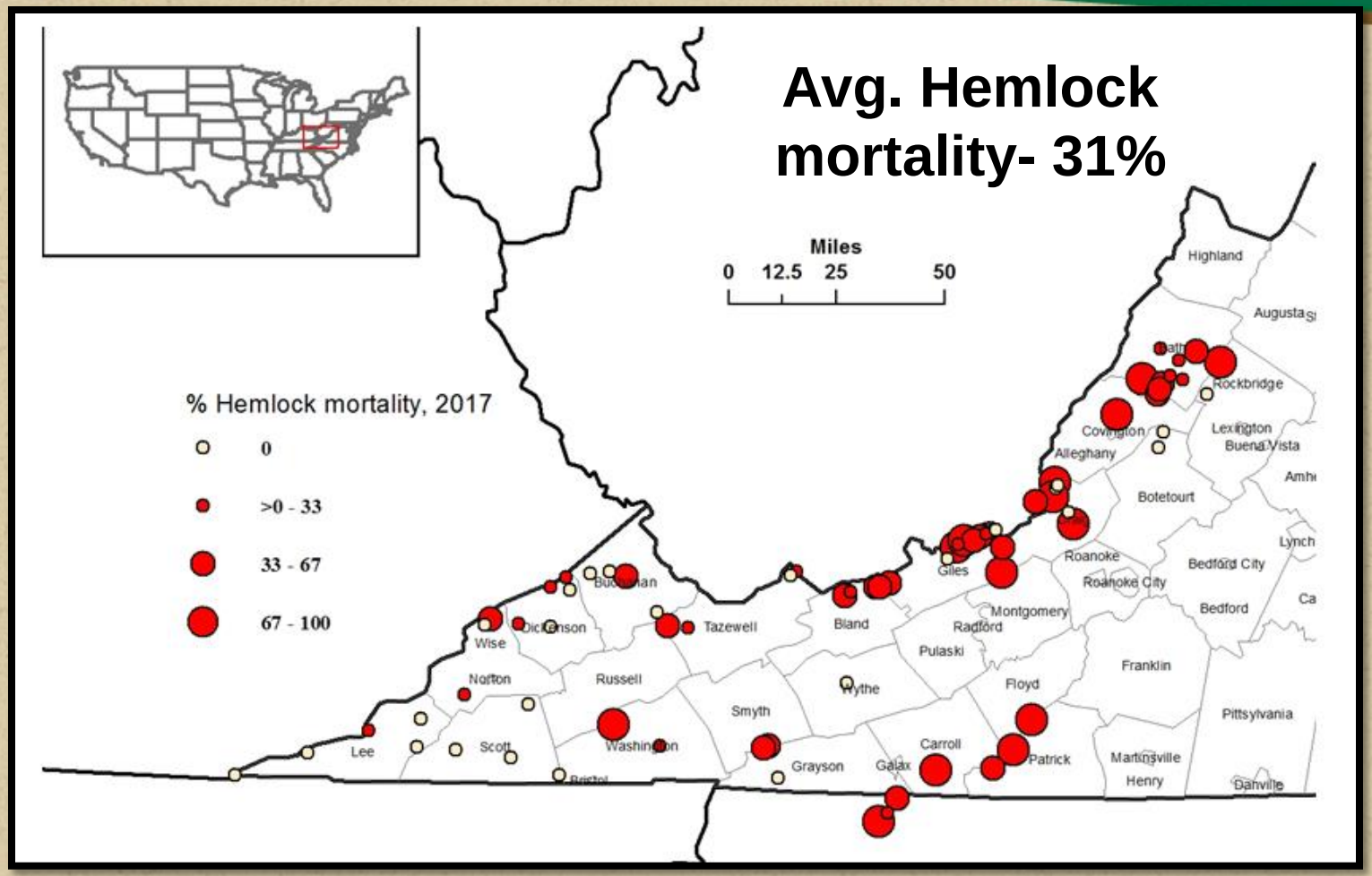
Hemlock Wooly Adelgid



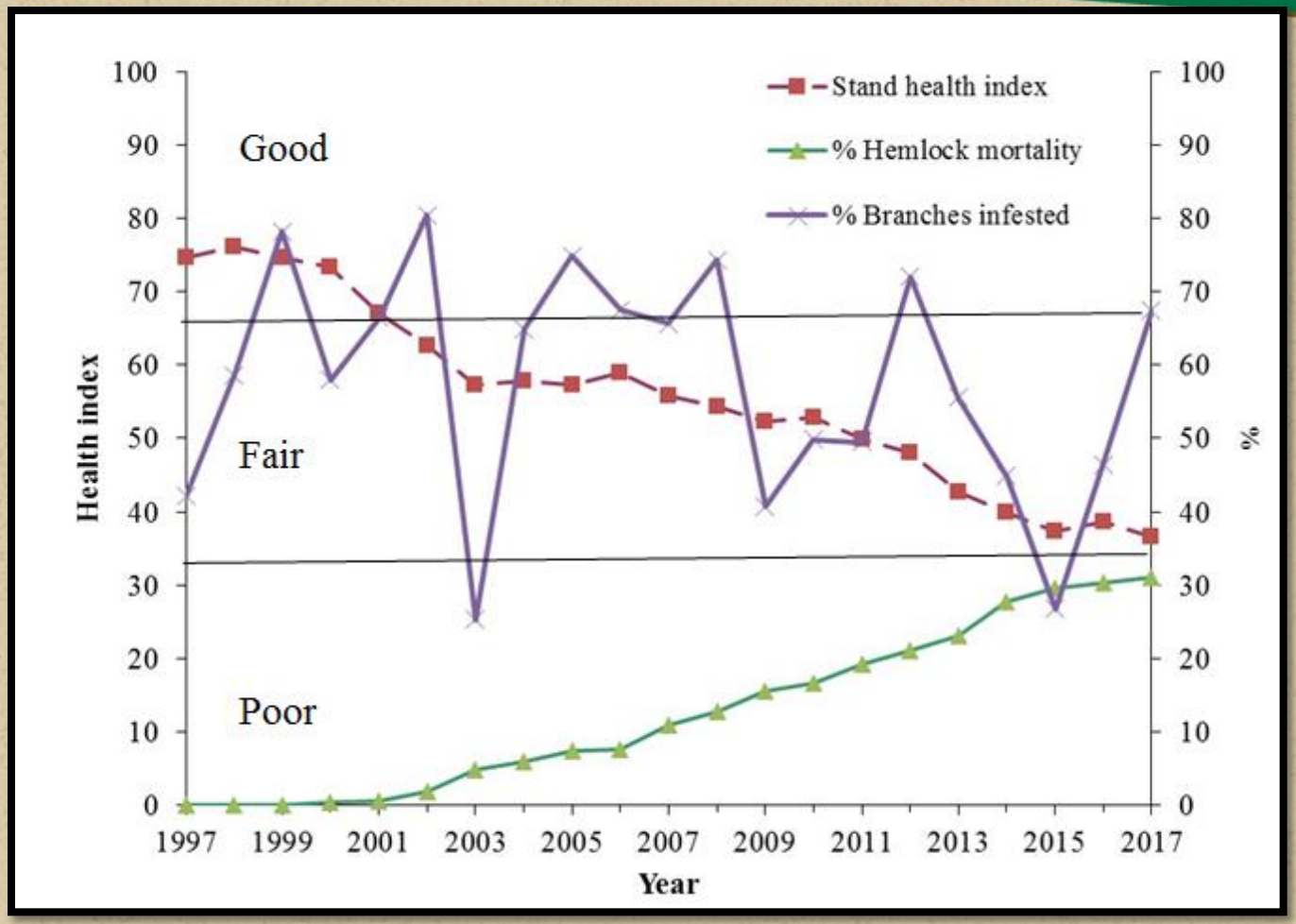
Hemlock Wooly Adelgid



Hemlock Woolly Adelgid Survey - 2017



Hemlock Woolly Adelgid Survey - 2017



VDOF Hemlock Treatments

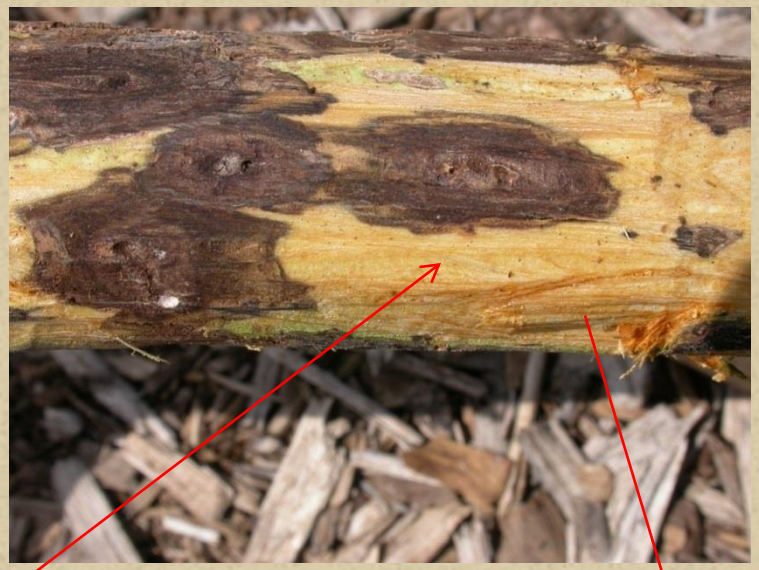
- **Treatment Planned for Fall:**
- Biscuit Run with Albemarle County Parks and Rec
- Spotsylvania County with Fredericksburg Public Works

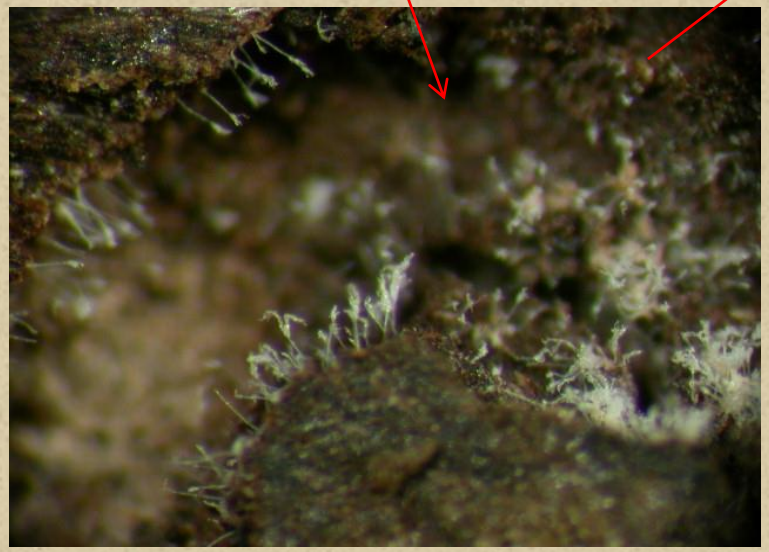
Predatory Beetle Releases

- *Laricobius nigrinus*
  - Found in Pacific Northwest on western hemlock where it feeds on HWA
- *Laricobius osakensis*
  - Native to Japan- comes from same location of the source of HWA in eastern US

Thousand Cankers Disease

- Disease complex native to southwestern US
- Involves the walnut twig beetle and fungus
- Primarily impacts black walnut trees
- Confirmed in Virginia in 2011



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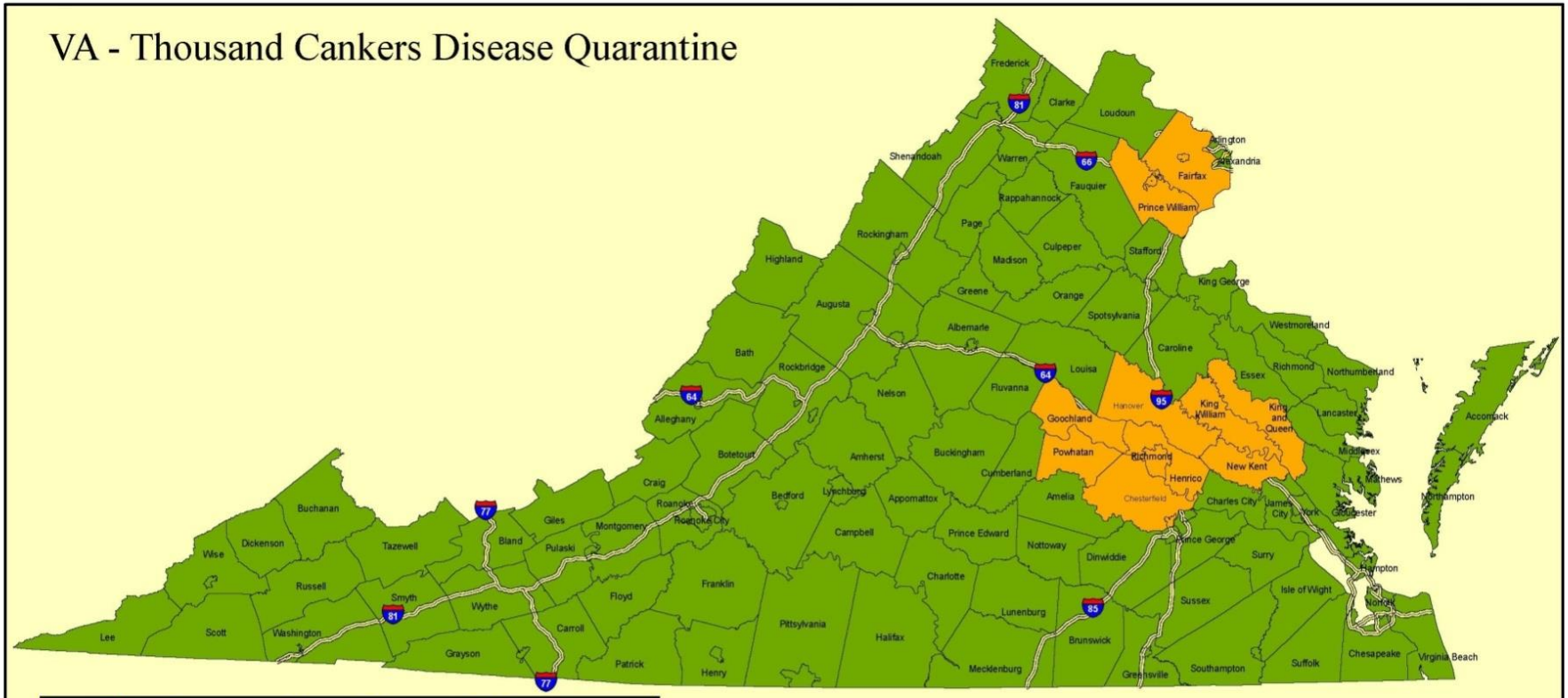
VA - Thousand Cankers Disease Quarantine



Quarantined Localities

Counties		Cities
Chesterfield	King William	Colonial Heights
Fairfax	New Kent	Fairfax
Goochland	King and Queen	Falls Church
Hanover		Manassas
Henrico		Manassas Park
Powhatan		Richmond
Prince William		

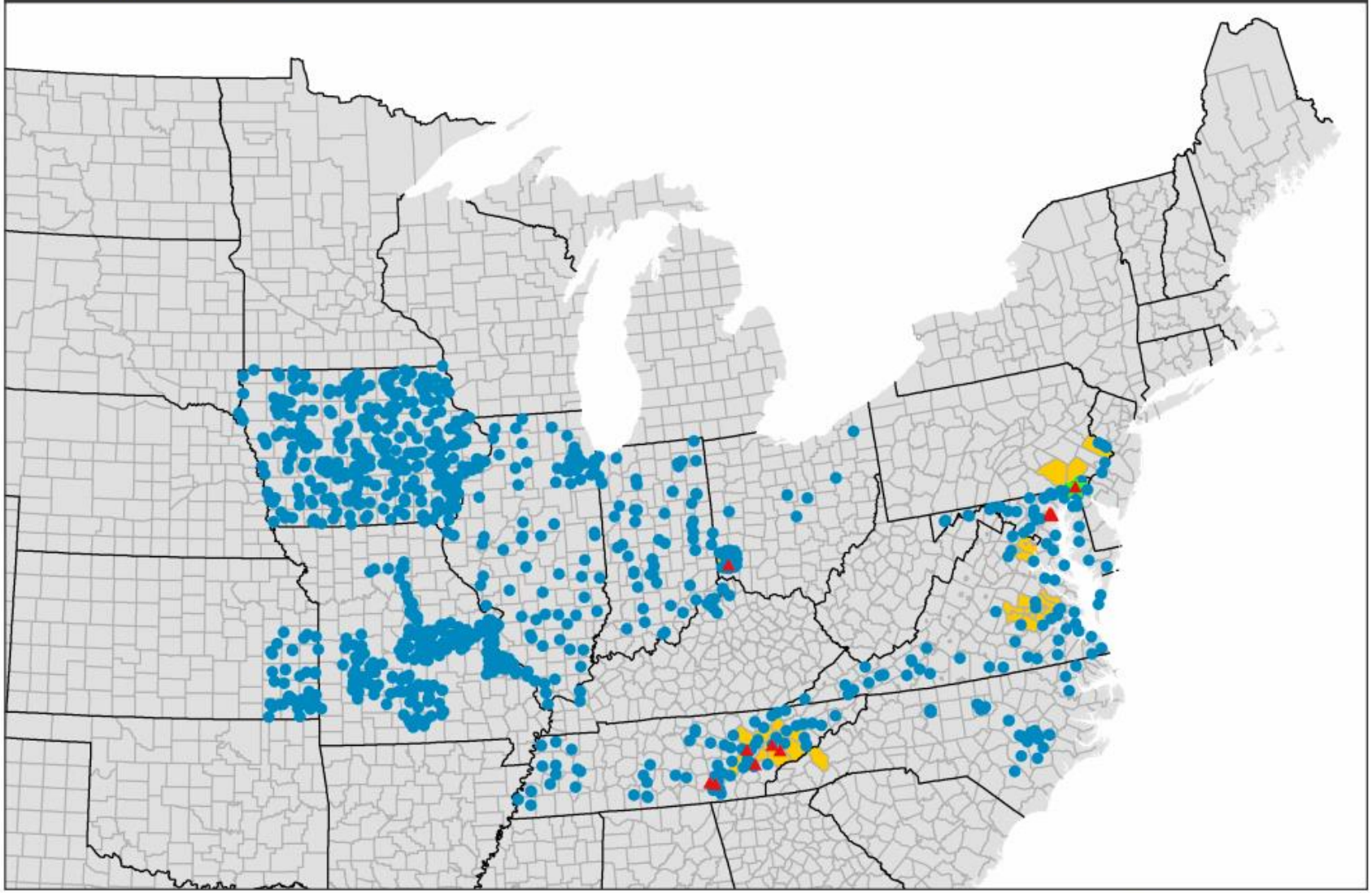
0 20 40 80 120 160 Miles

Virginia Department of Agriculture and Consumer Services

Fairfax County Urban Forest Management- 12/03/2012

USDA
United States Department of Agriculture

2018 Walnut Twig Beetle (WTB) Trap Survey*



▲ WTB found in trap ● No WTB found in trap ■ Counties with confirmed TCD ★ TCD confirmed

*Map shows data reported as of March 12, 2019

FOREST HEALTH ASSESSMENT AND APPLIED SCIENCES TEAM

APHIS

Who is the Emerald Ash Borer?

- *Agrilus planipennis*
- Adults are ¼ to ½ inch long
- Metallic green hardened forewings give them their name
- Larvae bore under bark and tunnel

Emerald Ash Borer

Adult (April-June)

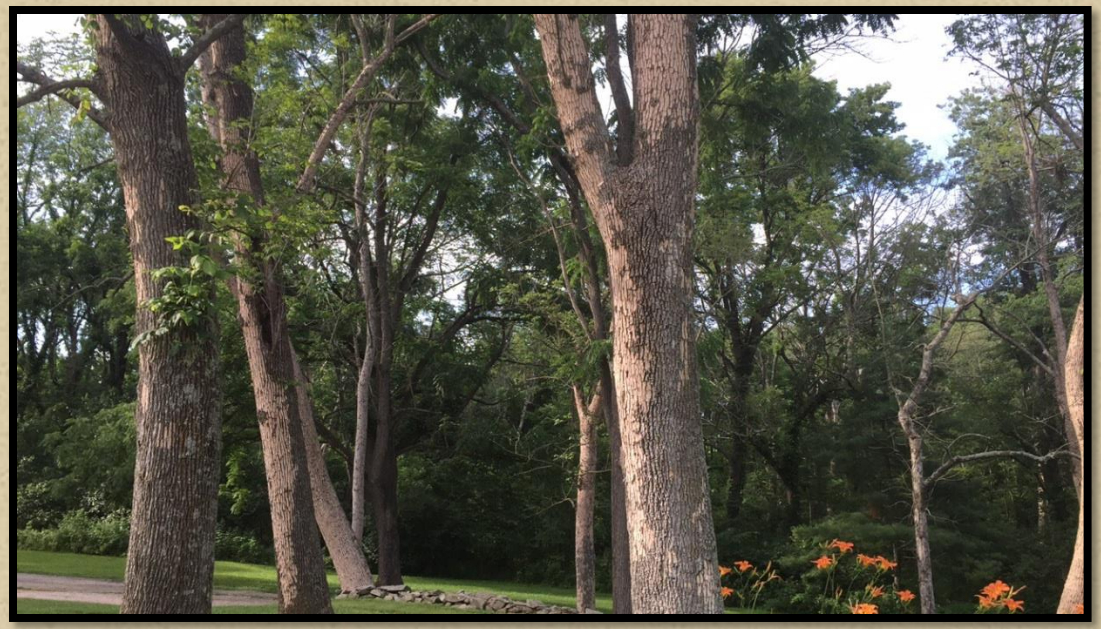
Egg (April-June)

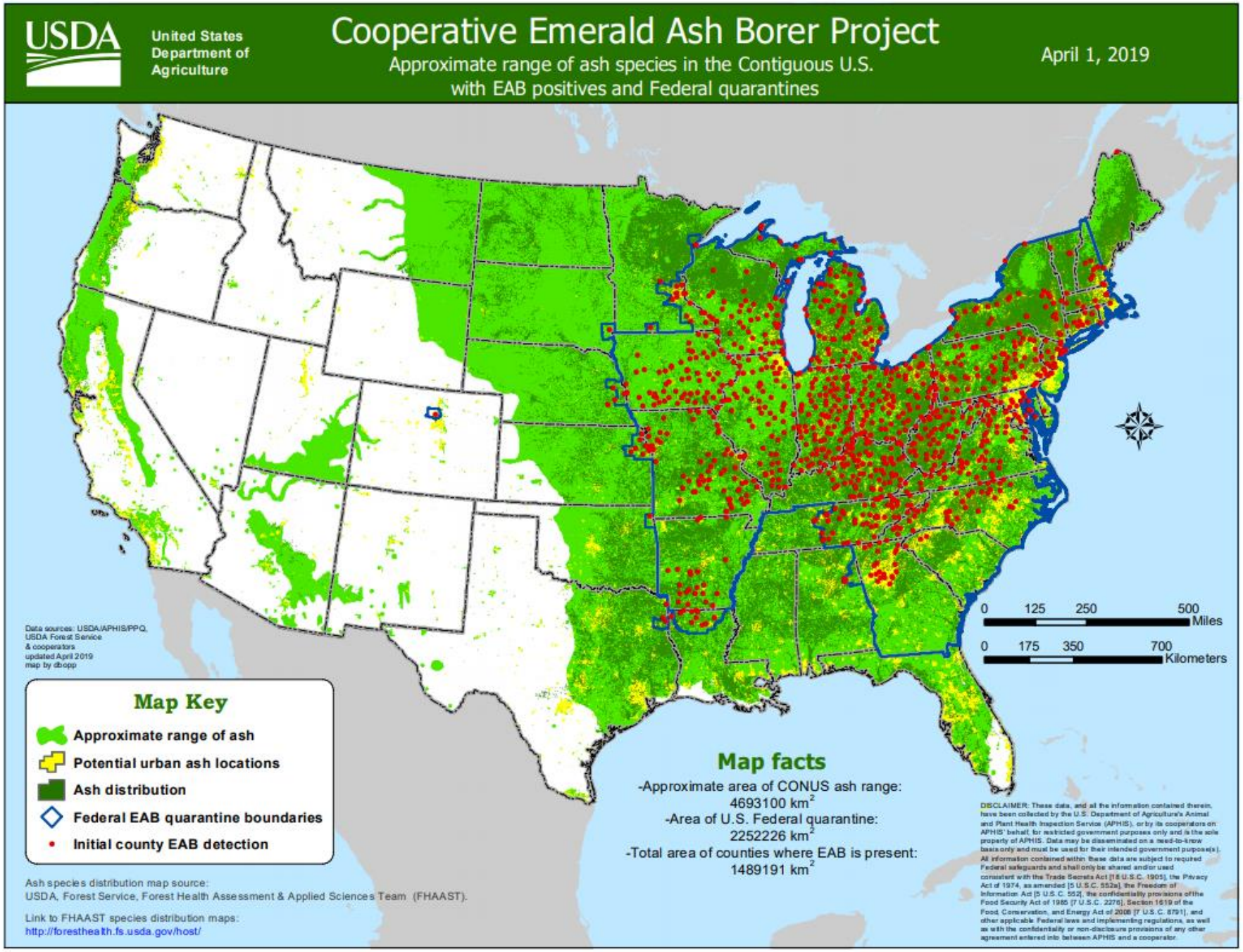
Larva overwinter

Pupa (March-May)

Adult Emergence

Emerald Ash Borer



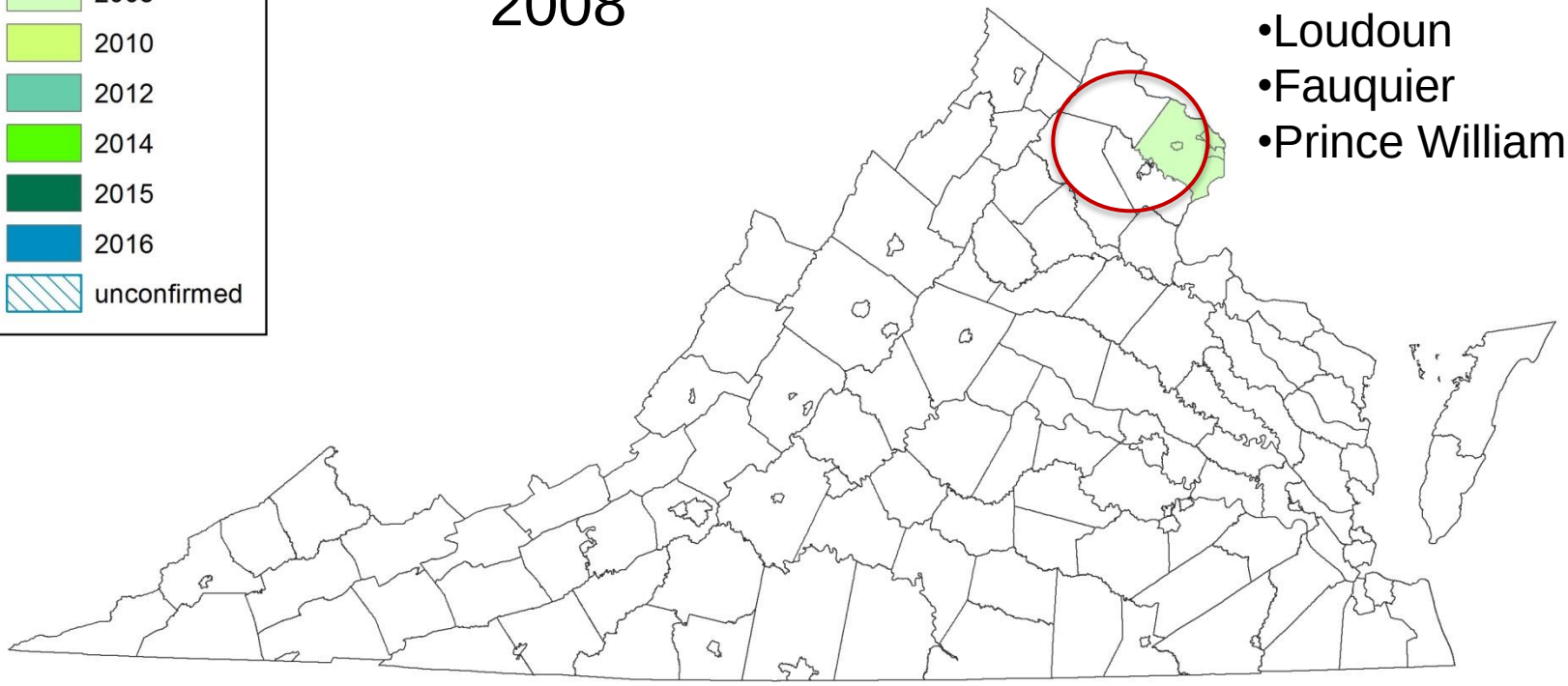

USDA
United States Department of Agriculture
Cooperative Emerald Ash Borer Project
Approximate range of ash species in the Contiguous U.S.
with EAB positives and Federal quarantines
April 1, 2019
Data sources: USDA/APHIS/PPQ, USDA Forest Service & cooperators
updated April 2019
map by dbopp
Map Key
Approximate range of ash
Potential urban ash locations
Ash distribution
Federal EAB quarantine boundaries
Initial county EAB detection
Ash species distribution map source:
USDA, Forest Service, Forest Health Assessment & Applied Sciences Team (FHAAST).
Link to FHAAST species distribution maps:
http://foresthealth.fs.usda.gov/host/
Map facts
-Approximate area of CONUS ash range:
4693100 km2
-Area of U.S. Federal quarantine:
2252226 km2
-Total area of counties where EAB is present:
1489191 km2
0 125 250 500 Miles
0 175 350 700 Kilometers
DISCLAIMER: These data, and all the information contained therein, have been collected by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS), or by its cooperators on APHIS' behalf, for restricted government purposes only and is the sole property of APHIS. Data may be disseminated on a need-to-know basis only and must be used for their intended government purpose(s). All information contained within these data are subject to required Federal safeguards and shall only be shared and/or used consistent with the Trade Secrets Act [18 U.S.C. 1905], the Privacy Act of 1974, as amended [5 U.S.C. 552a], the Freedom of Information Act [5 U.S.C. 552], the confidentiality provisions of the Food Security Act of 1985 [7 U.S.C. 2276], Section 1619 of the Food, Conservation, and Energy Act of 2008 [7 U.S.C. 8791], and other applicable Federal laws and implementing regulations, as well as with the confidentiality or non-disclosure provisions of any other agreement entered into between APHIS and a cooperator.

The Emerald Ash Borer in Virginia

Year
- 2008
- 2010
- 2012
- 2014
- 2015
- 2016
- unconfirmed

2008

Quarantine:
- Fairfax
- Arlington
- Loudoun
- Fauquier
- Prince William

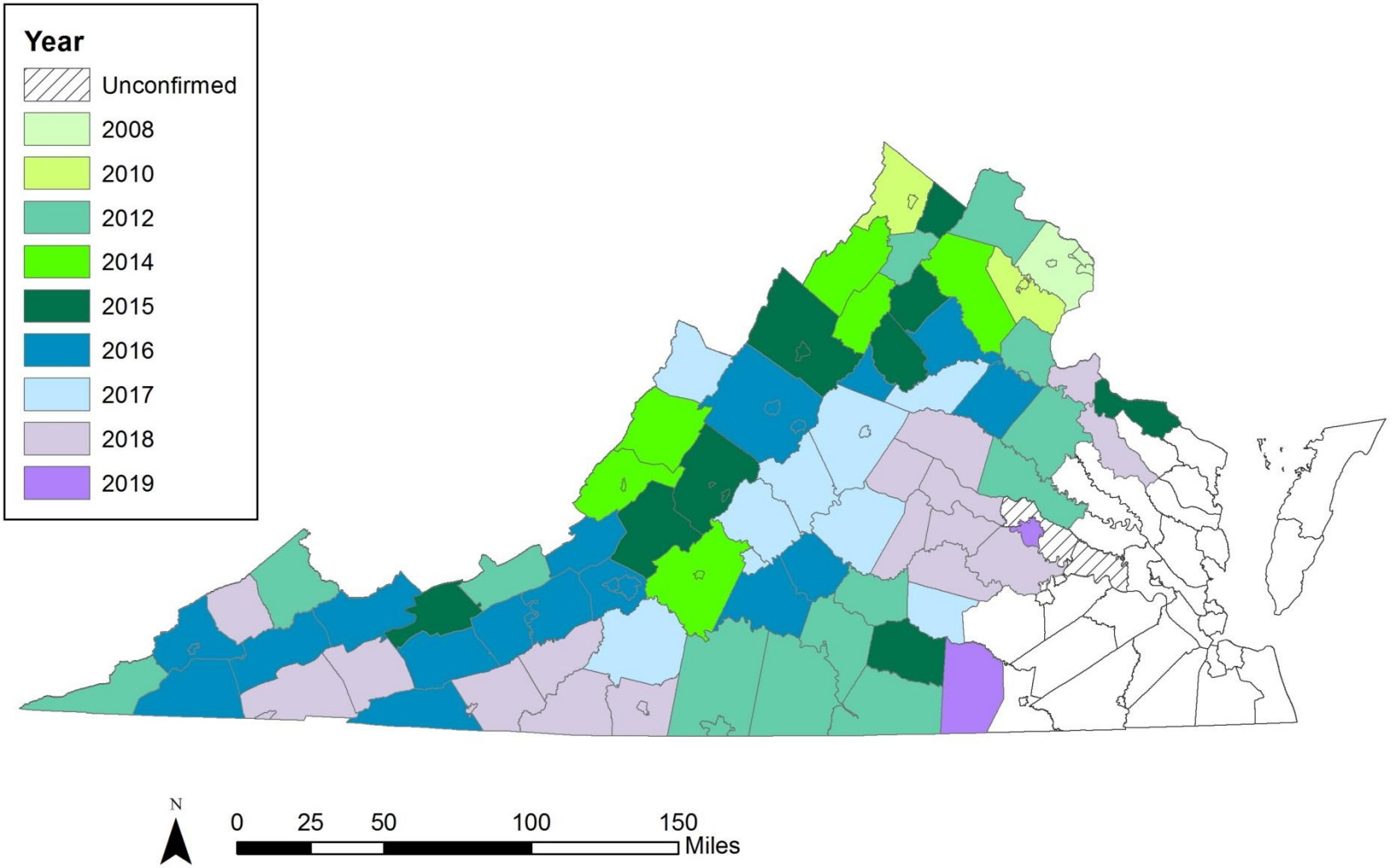


N

0 25 50 100 150 Miles

L. Chamberlin, 2/23/2017

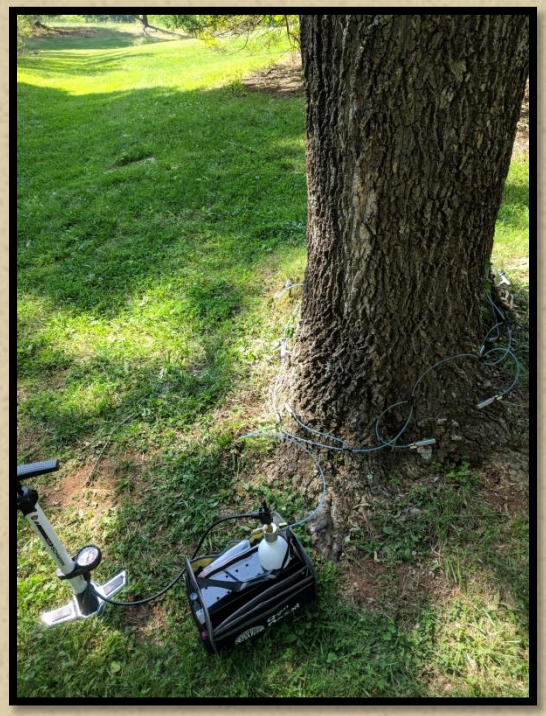
The Emerald Ash Borer in Virginia



L. Chamberlin, 4/4/2019

Emerald Ash Borer

- Treatment: chemical, biological control



VDOF Parasitoid Releases

Year	Species	Cumberland State Forest	Whitney State Forest	Rapidan WMA	Thompson WMA
2017	Oobius	400	600	0	0
2017	Tetrastichus	403	855	0	0
2017	Spathius	0	0	0	0
2018	Oobius	1400	300	900	1300
2018	Tetrastichus	564	348	1474	833
2018	Spathius	203	249	0	0
	TOTAL	2970	2352	2374	2133

Treating Ash on State Lands

- Treated 84 trees using injection method
  - 13 on Natural Areas and Nature Study Centers
  - 23 on DOF Lands
  - 21 Sister Agency Lands (DCR, DGIF)
  - 21 at State Universities and Research Areas
  - 6 Historic and Champion trees

EAB Cost Share Program

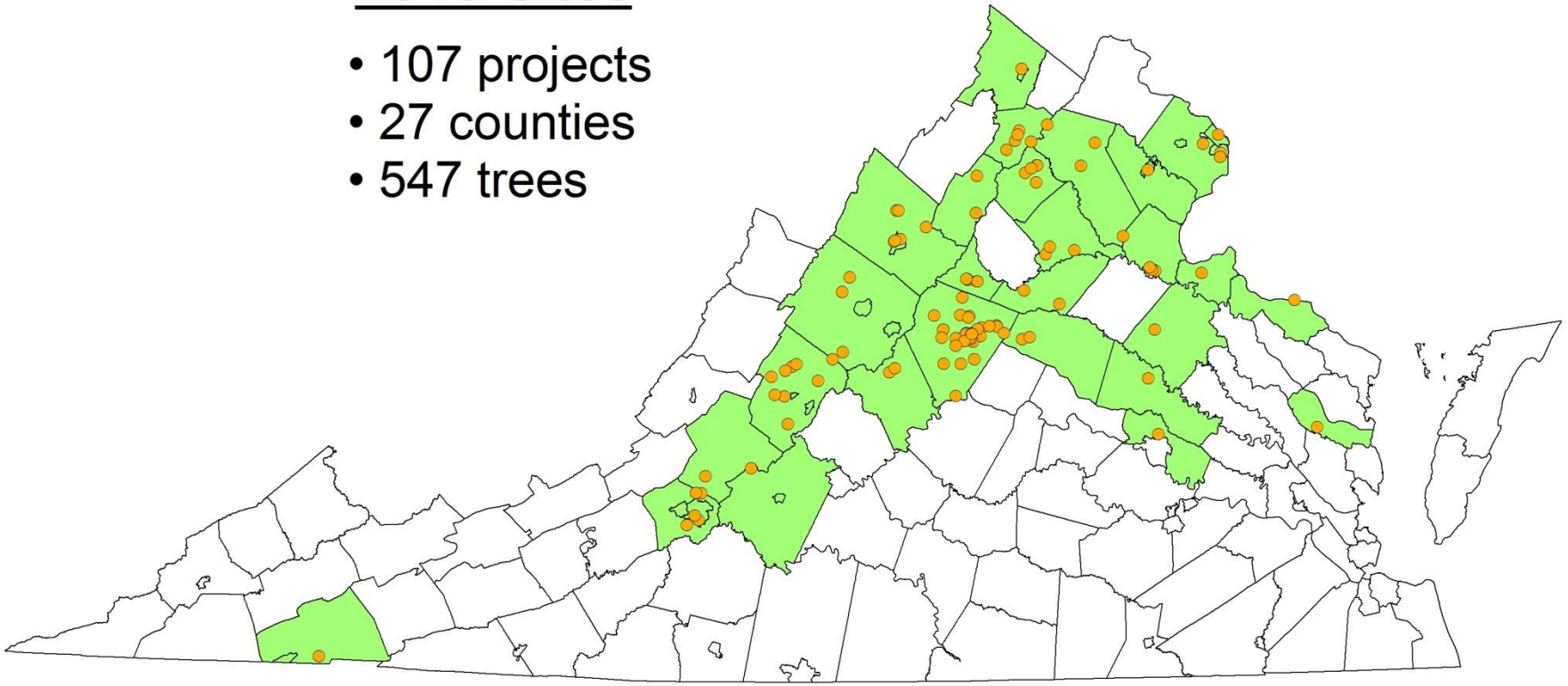
- Treatment of ash trees to protect a core surviving population of ash from devastation caused by emerald ash borer
- Private landowners, community organizations
- Contact Meredith Bean at (434) 220-9034

  Meredith.bean@dof.virginia.gov

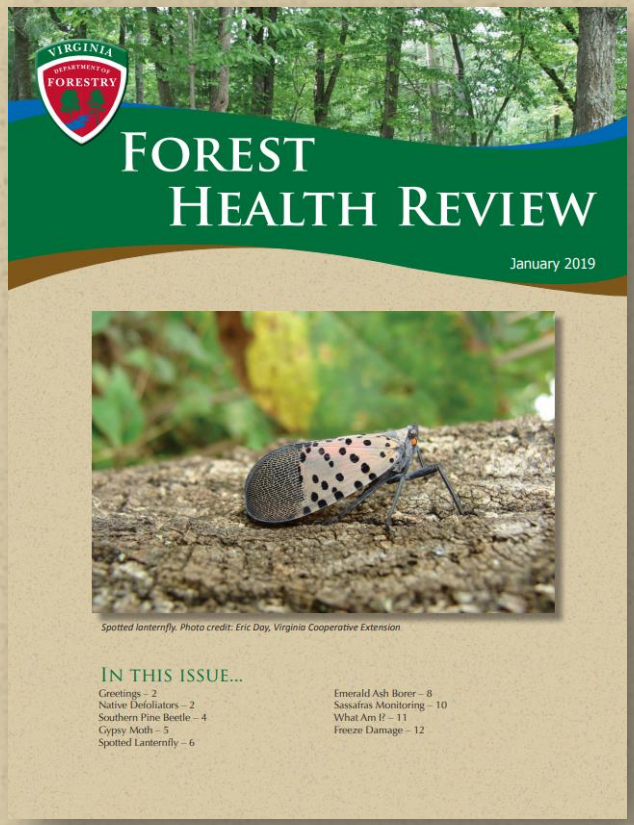
VDOF Ash Treatment Cost Share

2018 Sites

- 107 projects
- 27 counties
- 547 trees



Forest Health Review



http://dof.virginia.gov/infopubs/_fhr/FHR-2019-01_pub.pdf

Questions?

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