

Forest Pest Management
The Other Side of Prince William County's
Mosquito Program

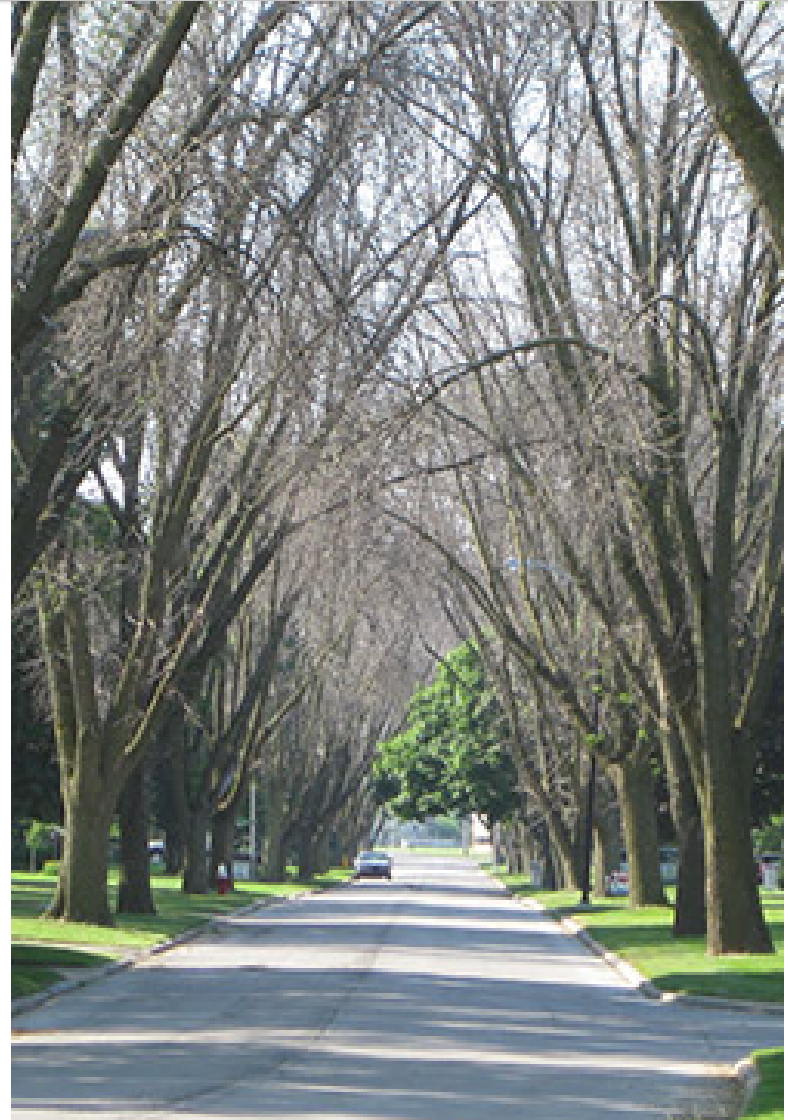
Nathaniel Nagle, Assistant Branch Chief
Prince William County Mosquito and Forest Pest Management Branch

Introduction and History

- How did our program come to be?
 - 1992: Board of County Supervisors established the Gypsy Moth Infestation Control Service District
 - 1994: Amended to include mosquitoes
 - 2004: Amended to include Fall Cankerworm
 - 2012: Final Amendment to include “Other” Forest Pests
- Funding provided through a property tax levy

Why Care about Forest Pests?

- 2 years of defoliation can cause tree mortality
- Trees are economically and ecologically important
 - Paper, goods, wildlife habitat, aesthetics, the list goes on...



Fall Cankerworm

- Adult moths emerge in the late fall after a hard freeze
 - Adults mate and egg clusters are laid on hardwood trees
- Larvae hatch in spring; late April to early May
 - Larval hatch is concurrent with leaf out
 - Feeding occurs on new spring growth
- Mature caterpillars burrow into soil to pupate in late June to early July

Fall Cankerworm

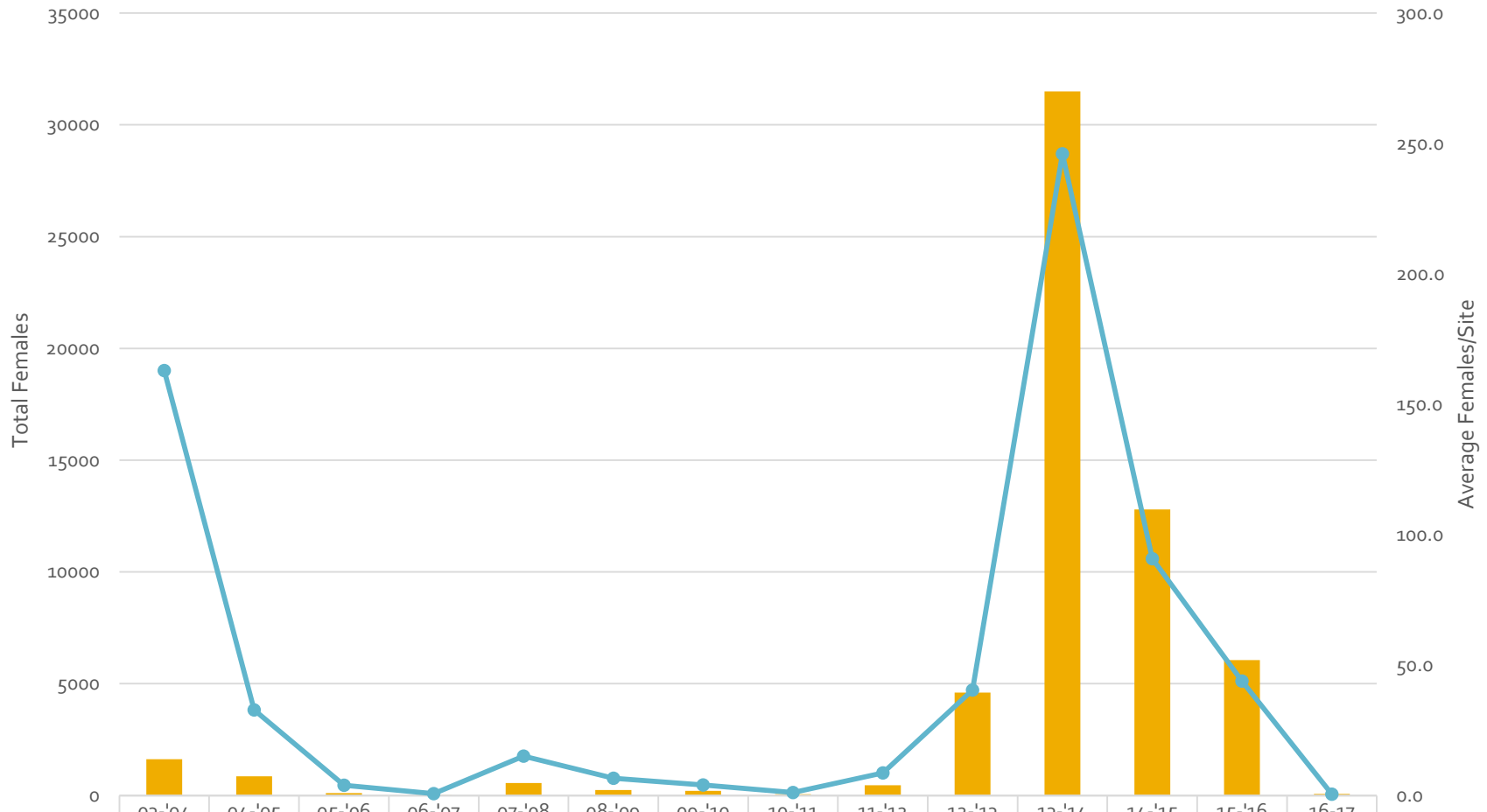


Fall Cankerworm Surveillance



Fall Cankerworm Surveillance

Fall Cankerworm Surveillance 2003-2017



Sum of Total Females	1629	854	114	26	557	246	213	62	457	4609	31496	12800	6058	72
Sum of Average/Site	162.9	32.8	3.9	0.7	15.1	6.6	4.0	1.2	8.6	40.4	246.1	90.8	43.9	0.5

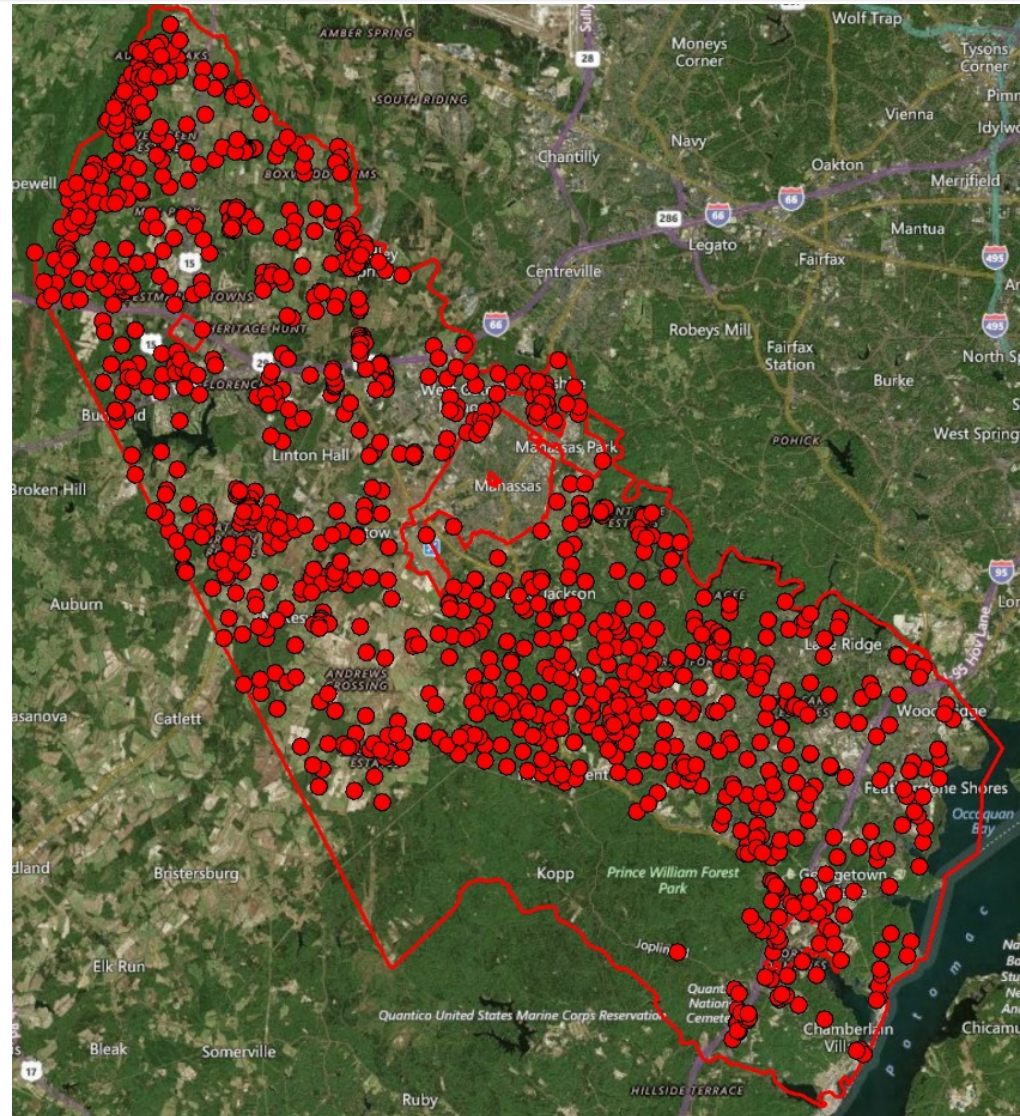
Gypsy Moth

- Adults emerge and lay egg masses in July
- Larvae hatch April-May and begin feeding on new spring growth
- Pupation occurs late June



Gypsy Moth Surveillance

- 1,069 survey sites in PWC
- Surveys completed August – Nov
- Each site is surveyed 1 time per year



Gypsy Moth Surveillance

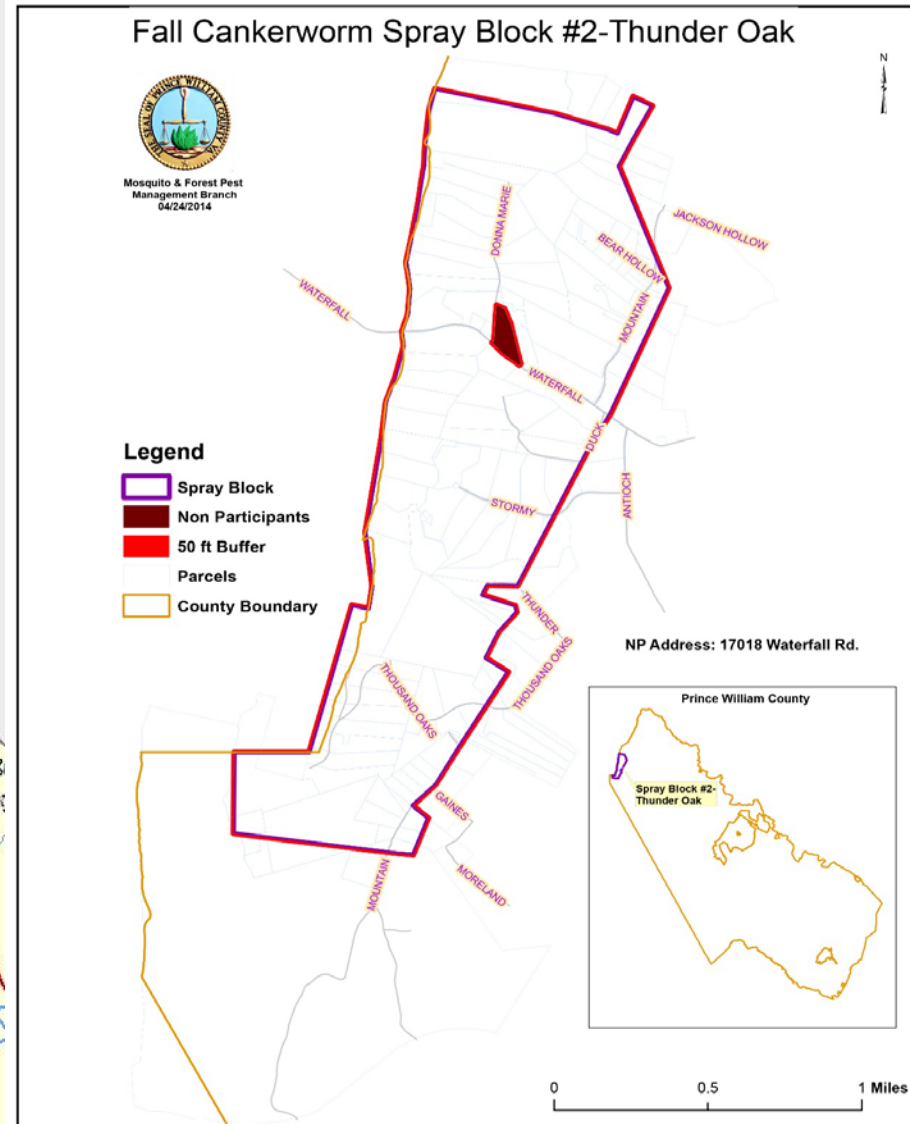
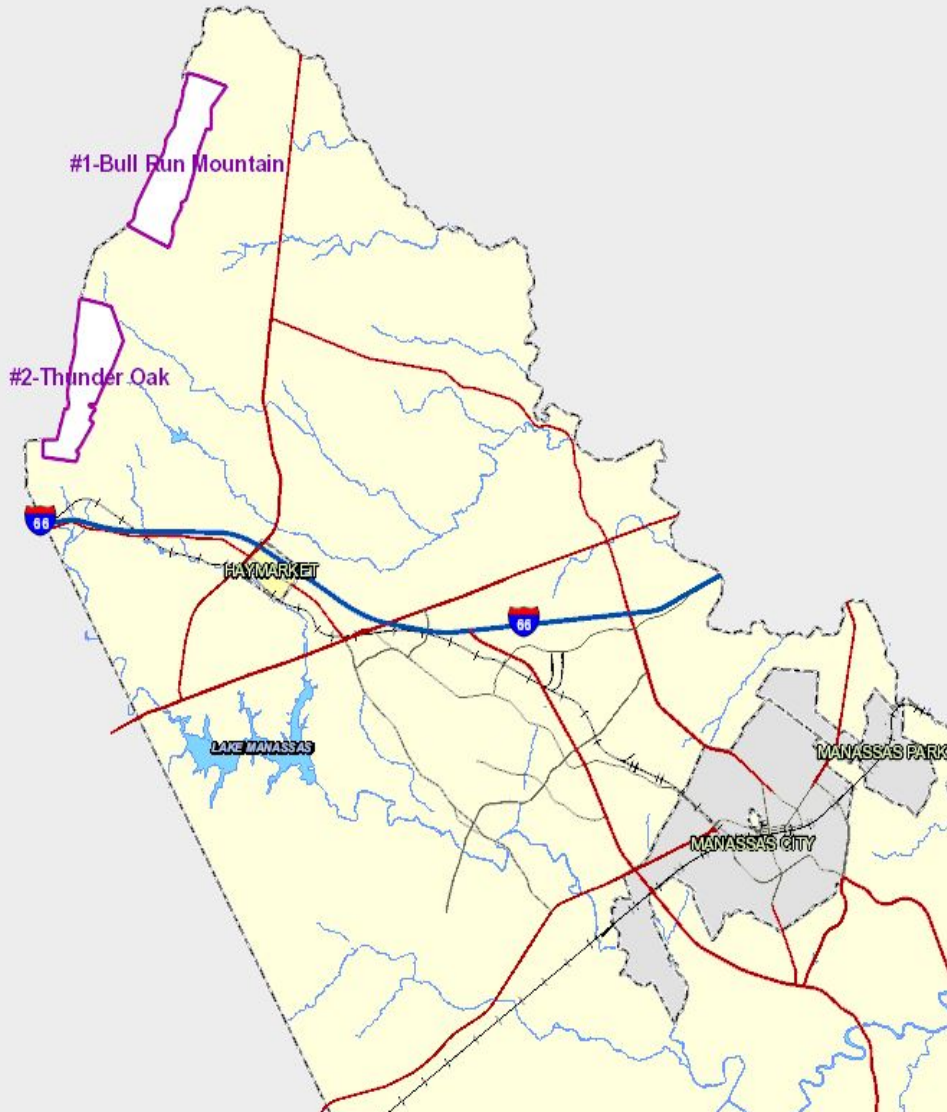
- Follow VDACS suppression guidelines
- 1/40th acre plot survey method
- 5 minute walk survey method
- Low populations last 6-7 years



Aerial Suppression

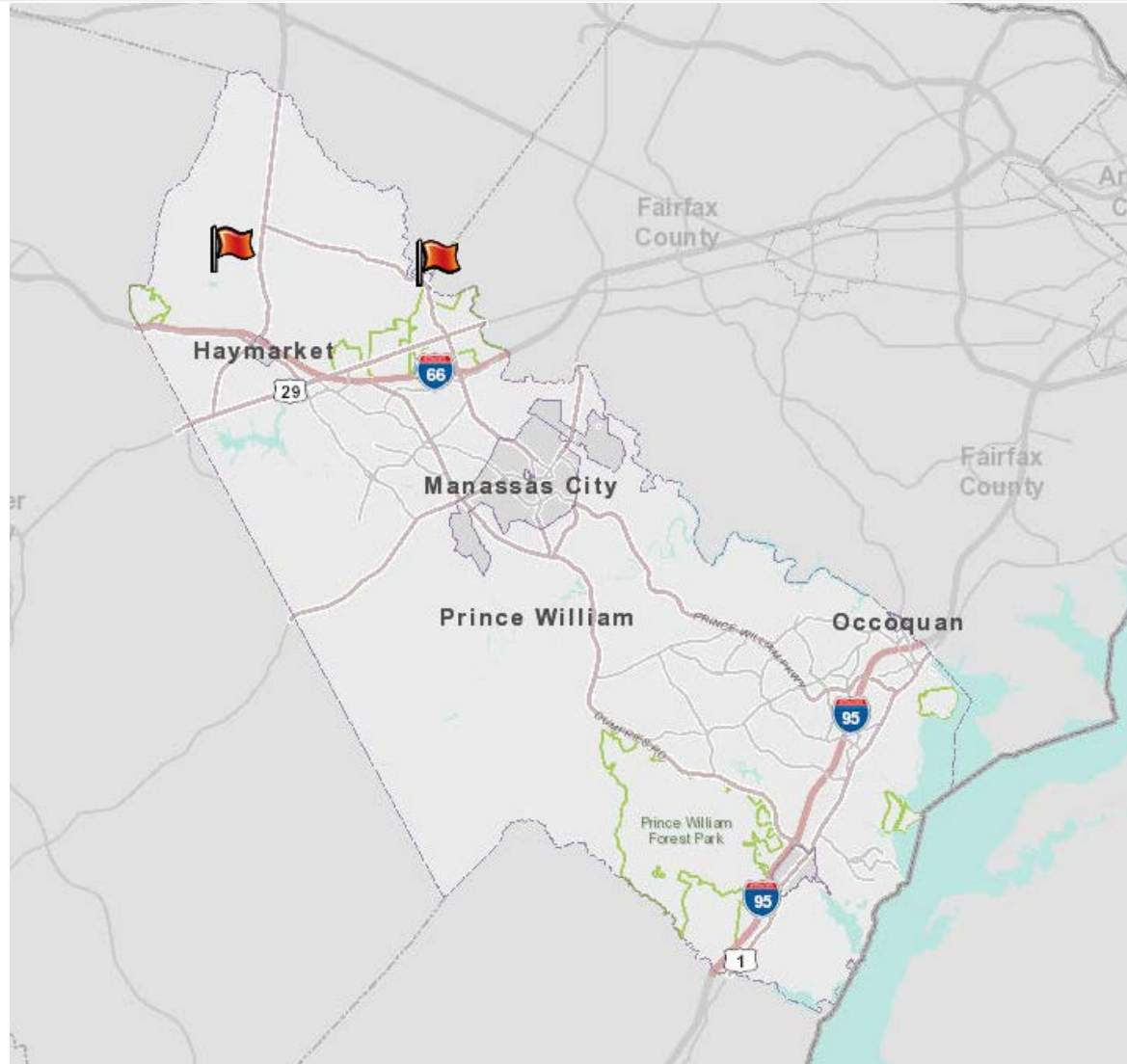
- *Btk* applied at label rate, typically using a helicopter
- Pre- and Post-spray surveys
 - Leaf progression, caterpillar development, defoliation
- Monitor weather conditions during spray event
- Voluntary participation and aggressive public outreach prior to spray event

Aerial Suppression



Emerald Ash Borer

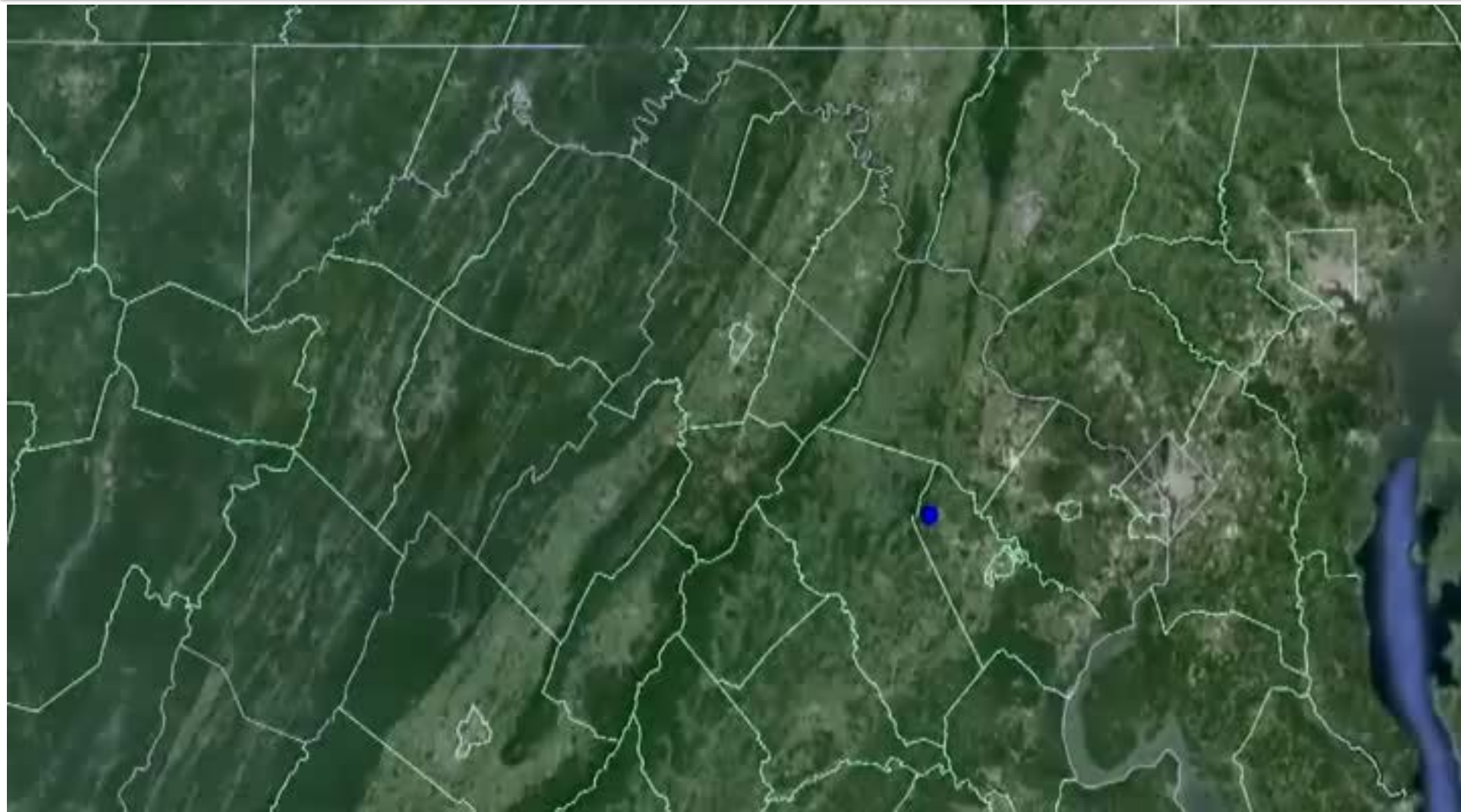
- Cooperators in USDA APHIS EAB Biocontrol Program
- Two test locations within PWC since 2015
- 12 release trees/site



Emerald Ash Borer



Emerald Ash Borer



EAB Parasitoids



Spathius agrili: a gregarious ectoparasitoid; lays its eggs on the outside of EAB larvae

Oobius agrili



A solitary wasp, it lays eggs inside EAB eggs

Tetrastichus planipennisi:

a gregarious endoparasitoid; it lays eggs inside the EAB larvae



Emerald Ash Borer Biocontrol Program

- Release every 2 weeks starting late May through the end of September
- Silver Lake: 33,061 females released
 - 2015: 22133
 - 2016: 10928
- Davis Tract: 20,636 females released
 - 2015: 12441
 - 2016: 8195

Other Forest Pests

- Asian Longhorn Beetle
- Oak Ambrosia Beetle
- Walnut Twig Beetle (Thousand Cankers Disease)
- Hemlock Woolly Adelgid



QUESTIONS??

