

Emerald Ash Borer – Coming Soon to Maine



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Emerald Ash Borer (EAB)

Bright metallic green
-1/2 inch long



2 mm





Emerald Ash Borer

- ~1/2 " long
- long and narrow
- likely to be found near ash trees



Tiger Beetle

- broader
- definite 'shoulders'
- often flies near ground (very fast)



- Adults live about 4 weeks
- Are present from May-August
- Feed on leaves but don't do any real damage



Photo by David Cappaert. Reprinted with permission.

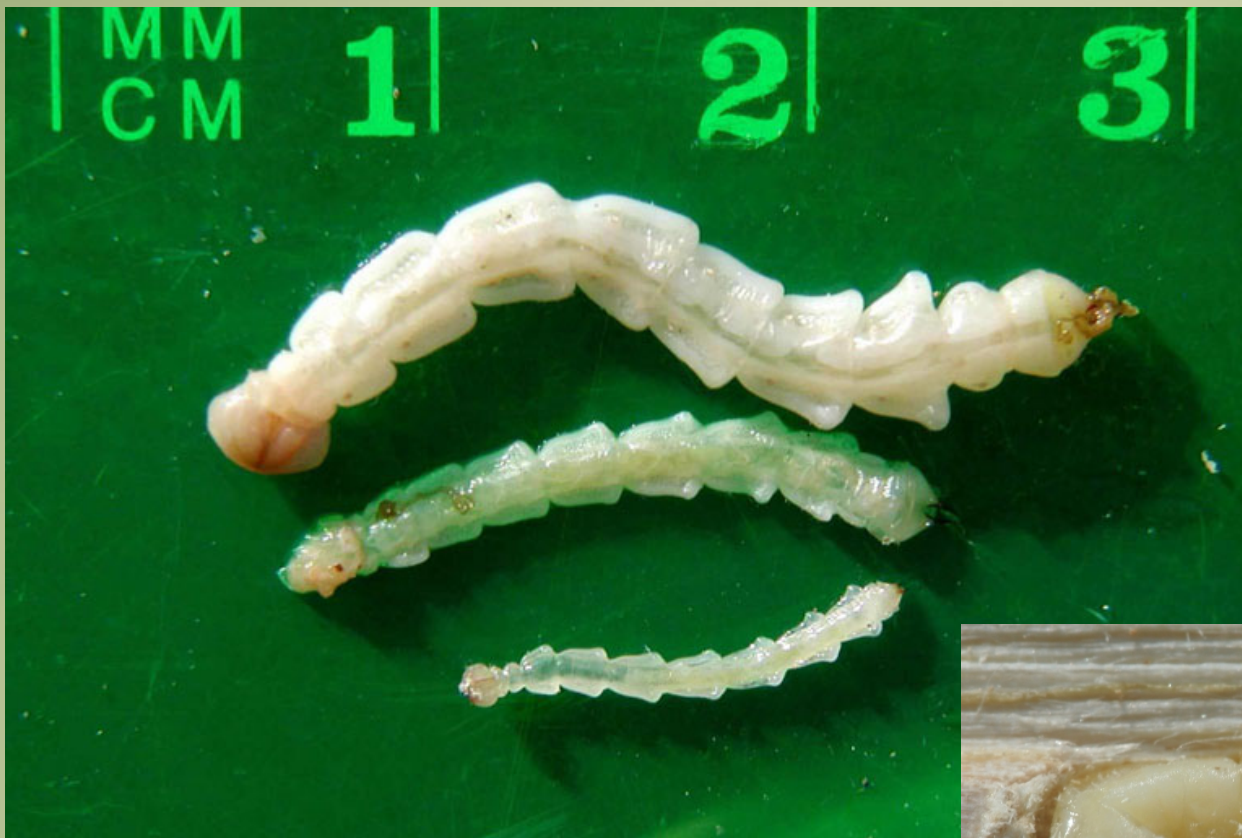
- Eggs are laid on the surface of bark or in cracks and crevices.
- May be laid singly or in groups
- Females may lay up to 100 eggs
- Very small – you won't likely see them



Photo by David Cappaert. Reprinted with permission.



- Larvae tunnel under bark and feed on cambium in S-shaped galleries
- Feed from July to October
- Extensive larval feeding disrupts translocation



- Four larval instars (stages)
- Most larvae overwinter as pre-pupae
in either bark or upper sapwood



Photo by Deborah Miller,
USDA Forest Service.
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- In spring the pre-pupae pupate into adults
- Adults start to emerge in mid-May, creating D-shaped exit holes



- We used to think life cycle took one year**
- If trees are fairly healthy, life cycle takes 2 years**
- In heavily infested areas or when trees are stressed, life cycle may be completed in one year**

How does EAB spread?

- Natural spread: ~2 miles / year



- Living ash (nursery stock)



- Ash products → Firewood!



**GUNS
~~BUGS~~
AMMO
CAMO**

Three Out of Four Ain't Bad

"I thought you bug boys! Stop it where you burn it - don't give bugs a free ride!"

The Maine Legislature has passed a law that bans firewood from other states.

Now friends can pack their guns, ammo and camo - but leave the bugs alone. Keep them out of Maine.

For more information:
www.maine.gov/firewood
or call (207) 287-2791

Out-of-state Firewood Gives Bugs a Free Ride

CONCEPT AND ARTWORK BY KATHA VAN VOLKSBURG
DESIGN BY ERIK AND ANNE FEDERAL CENTER

BUY IT WHERE YOU BURN IT

BECAUSE OUT-OF-STATE FIREWOOD IS BANNED IN MAINE

for more information, go to www.maine.gov/firewood or call (207) 287-2791

**BURN IT
WHERE YOU
BUY IT**

**Stop the Emerald Ash Borer
Don't Move Firewood > StopTheBeetle.info**

Leave Your Firewood At Home

**Buy It Where You Burn It
Don't Give Bugs a Free Ride!**

Impact

- Hosts
 - Attacks **all** species of North American ash
 - Kills **all** of the trees it attacks
 - Has killed 10's of millions of trees since 2002
 - Has the potential to wipe out ash in NA



Photo: Maine Department of Agriculture



Maine Hosts: White, Green, Brown Ash



White

Green

Brown



White



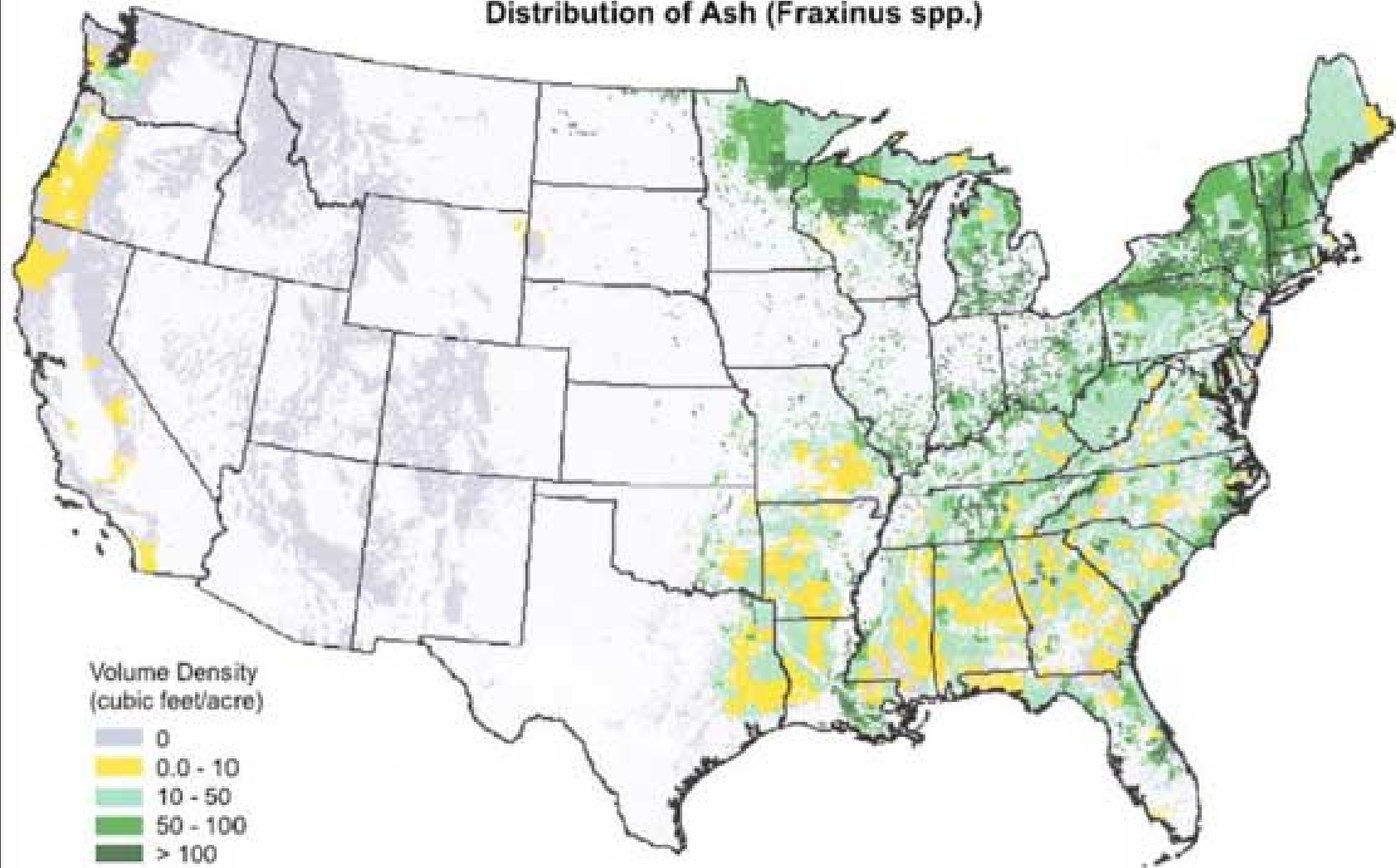
Green



Brown

Photos: Maine Forest Service,
Forest Policy and Management

Distribution of Ash (*Fraxinus* spp.)

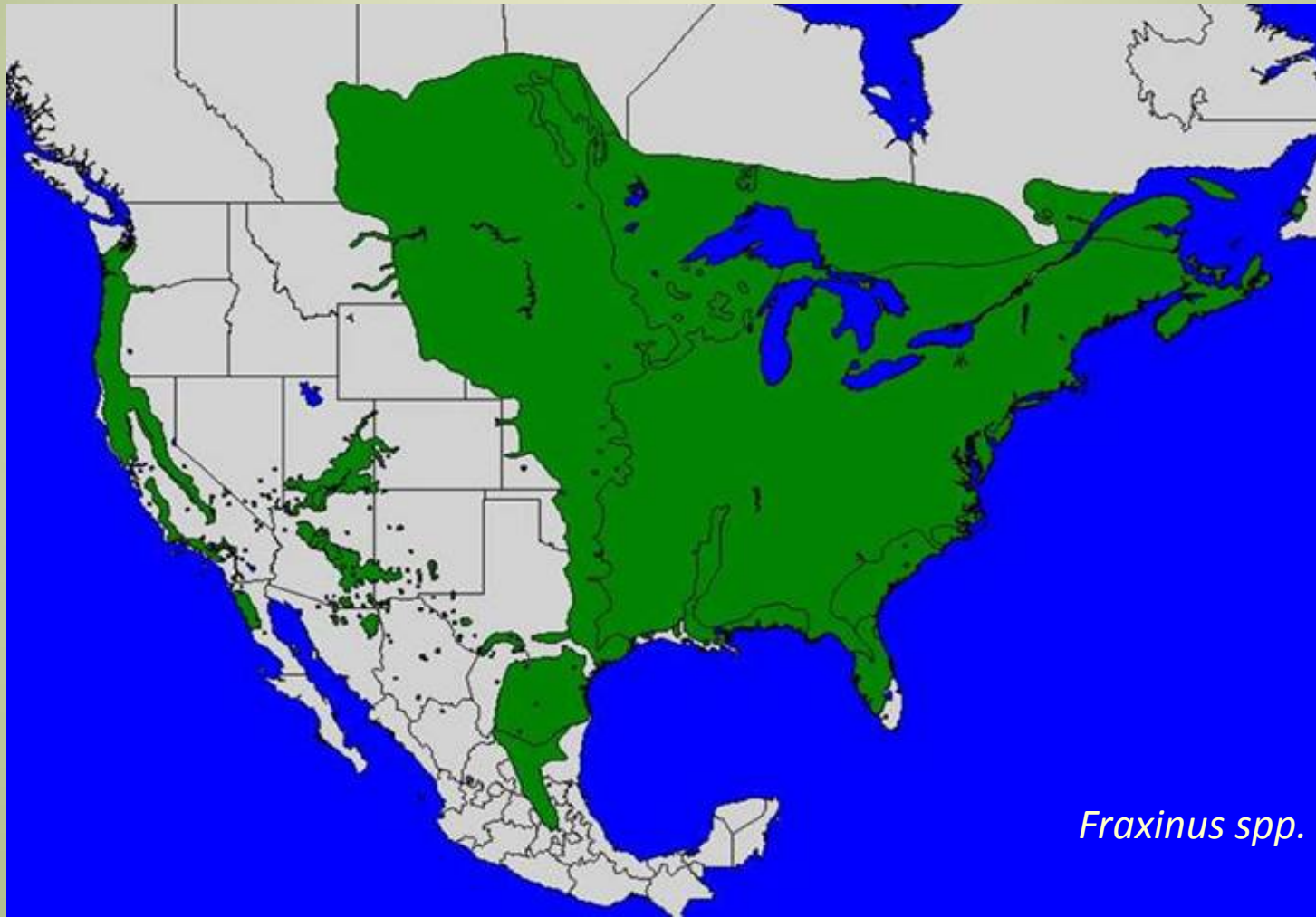


USDA Forest Service data sources:
County-level estimates of ash densities derived from Forest Inventory and Analysis (FIA) data.
Forest/non-forest overlay derived from AVHRR satellite imagery.

Will our cold winters protect us from EAB?



Extreme cold may wipe out high percentage emerald ash borer larvae



Fraxinus spp.

Crown Decline (top down)

Troy Kimoto, Canadian Food Inspection Agency, Bugwood.org





UGA1398090

Epicormic Shoots



Bark Splitting

Michigan Department of Agriculture, Bugwood.org



S-shaped Galleries





D-shaped exit holes

Photo: University of Wisconsin Entomology

Bark flecking / woodpecker feeding



NOT feeding on EAB



Pileated woodpecker



Sapsucker

Do feed on EAB



Downy Woodpecker



Hairy Woodpecker



So How Do We Monitor For EAB?



Trap Trees



Purple Traps



Public Education

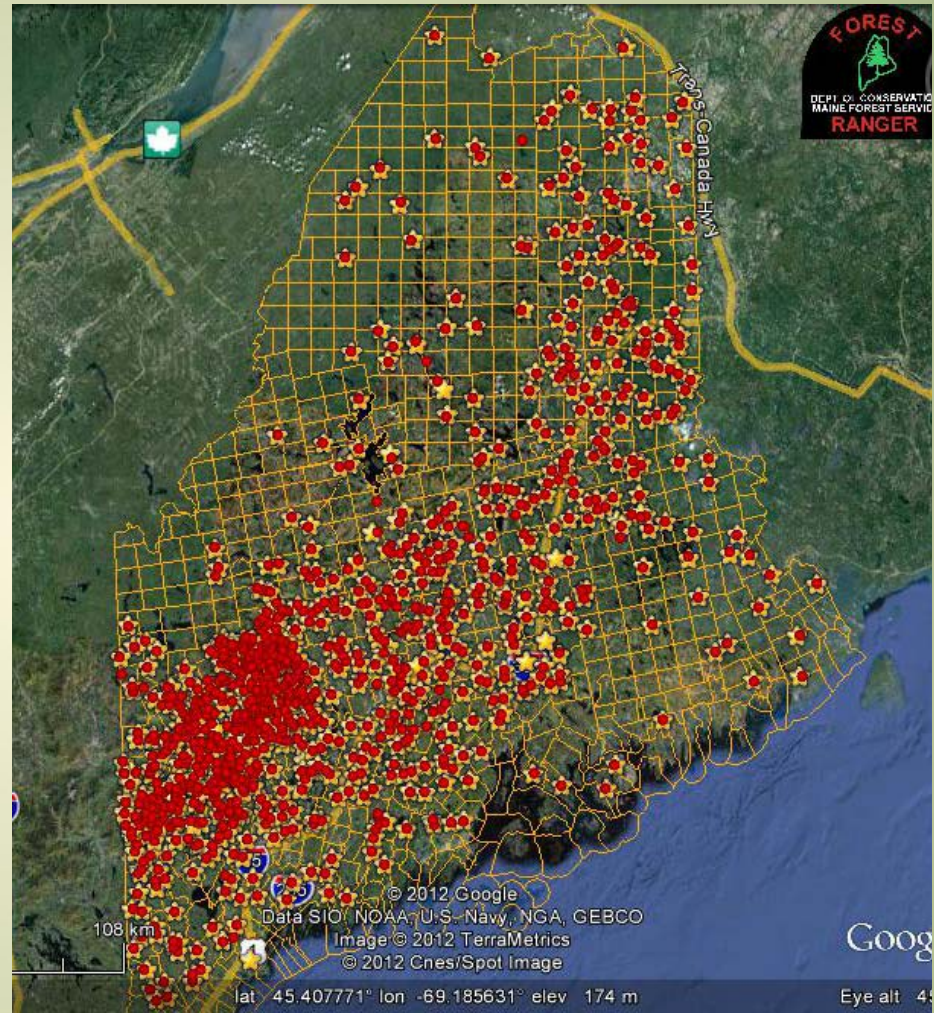


Biosurveillance



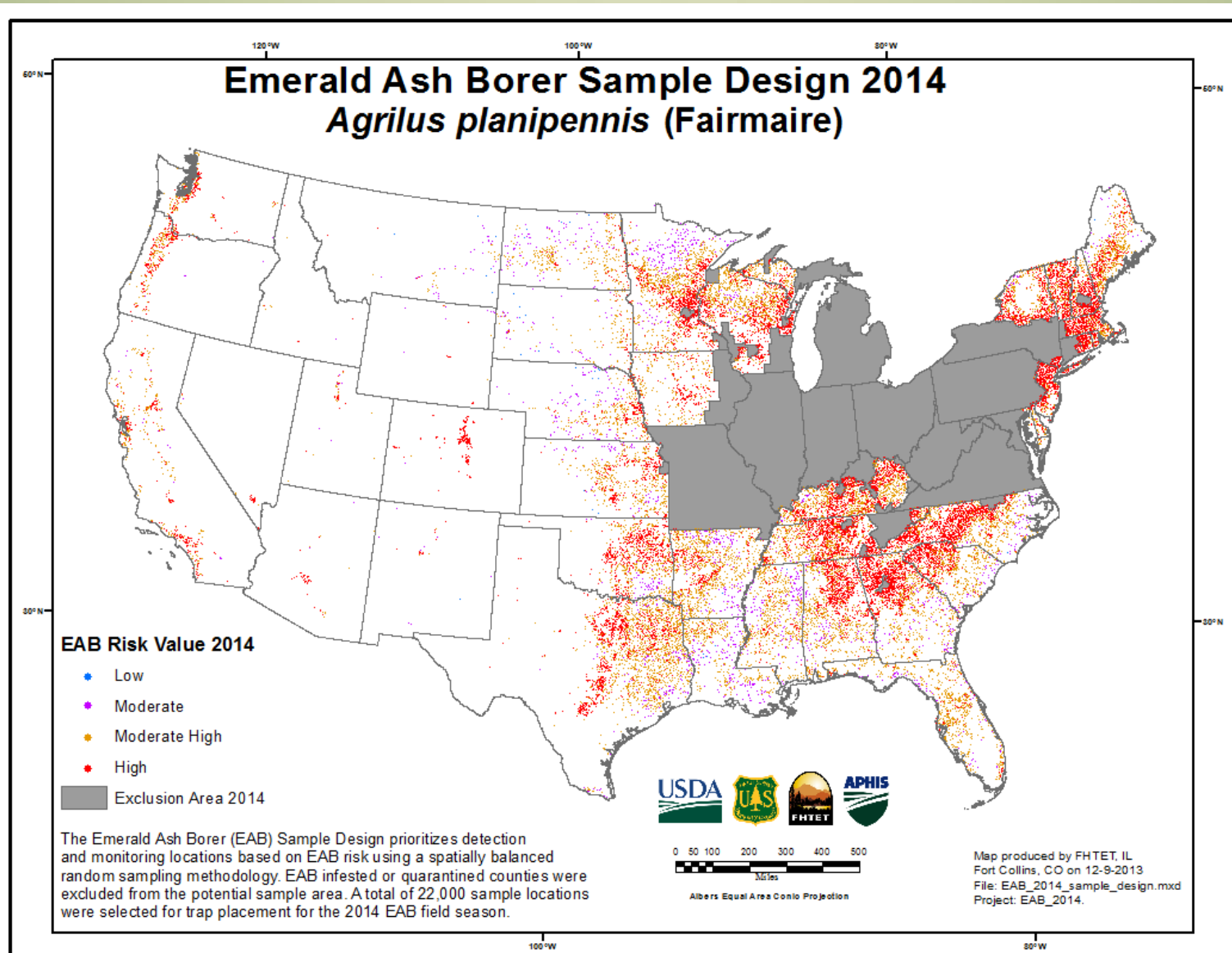
Purple Sticky Traps

- Least sensitive
- Most user friendly
- Cheapest



2012 – 965 traps
2013 – 852 traps
2014 – 587 traps

National EAB Survey 2014



Trap trees

-fairly sensitive

-lots of work!



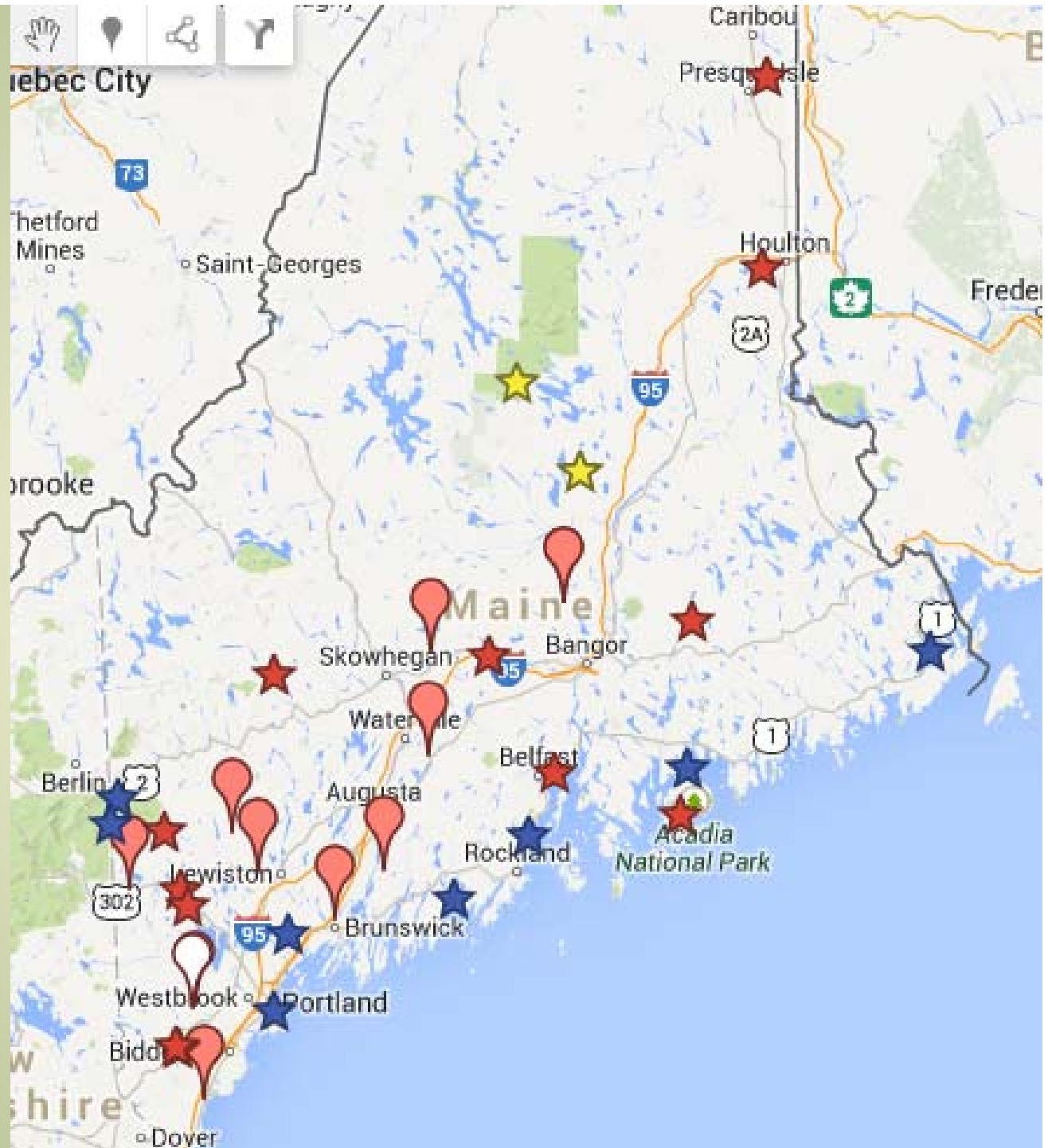


Log-peeling workshops



2014
34 EAB Trap Trees

- State park campgrounds
- Private campgrounds
- White Mountains National Forest campgrounds
- Wilderness campsites
- City of South Portland
- Volunteer landowners





Biosurveillance

Cerceris fumipennis

Family: Crabronidae
(hunting wasps)



- Native wasp
- Solitary ground-nester
(in colonies)
- Non-stinging
- Provisions its nest with
adult buprestids (metallic
wood-boring beetles)
- Is capable of finding EAB
at low levels

BIOSURVEILLANCE

Identifying Features



- Dark smoky wings
- One cream/yellow band on 2nd abdominal segment
- 3 yellow spots on face
- $\frac{1}{2}$ - $\frac{3}{4}$ inch long



They don't sting

-honest



Collecting beetles

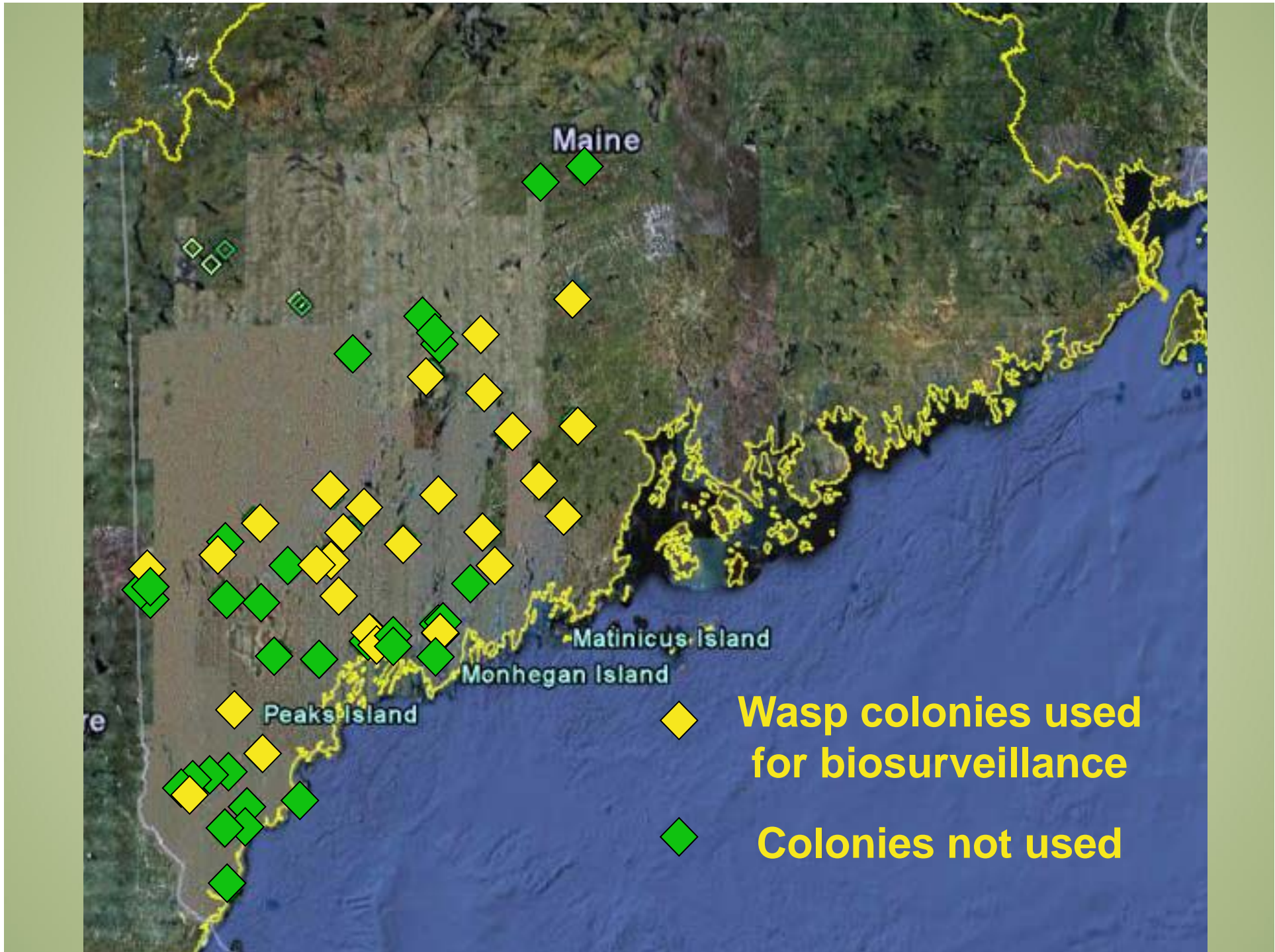
-with a net



Collecting beetles

- using collars



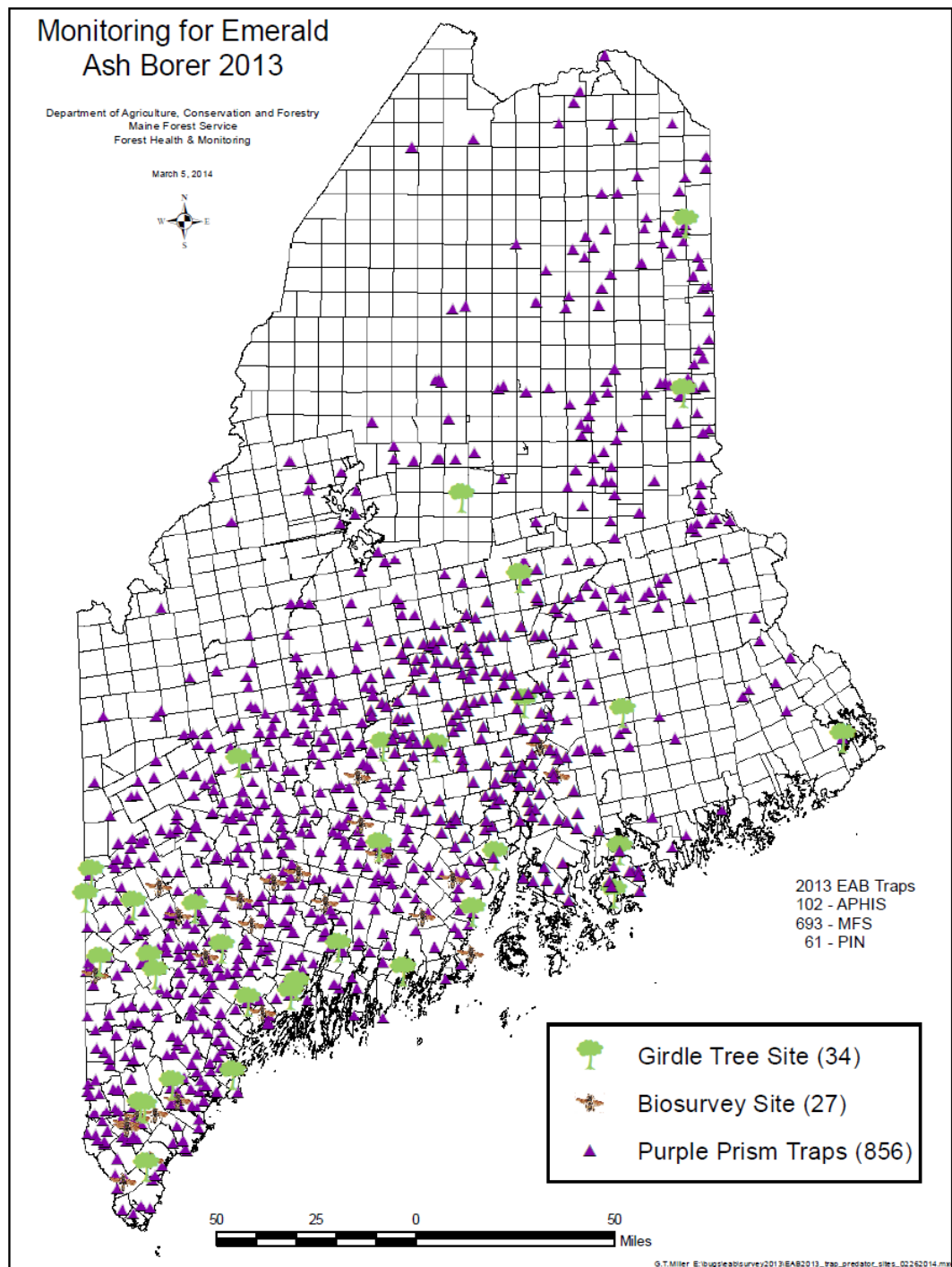


Pros and Cons of Different Monitoring Methods

	Pro	Con
Purple traps	Relatively cheap and easy	Least sensitive
Trap trees	More sensitive	Lots of work Destructive
Biosurveillance	Most sensitive	Colonies are only where you find them

- EAB Monitoring 2013

- 865 purple prism traps
- 34 girdled trees
- 27 biosurveillance sites



DON'T PANIC

Hyperborea Golden Galaxy

