



United States Department of Agriculture

Ohio Asian Longhorned Beetle Cooperative Eradication Program



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USDA APHIS PPQ
Project Manager - Ohio



Presentation Outline

- **Asian Longhorned Beetle background**
 - What is at risk?
 - Where is it?
- **ALB Eradication Program**
 - Who are we?
 - What authority do we have?
- **What has been done in response to the Ohio ALB infestation?**
 - Eradication strategy
 - Quarantine/regulatory work
 - Survey/detection – from the ground and from the tree
 - Removals – infested trees and high-risk host trees
 - Chemical treatments



What is at risk from ALB?

- Tourism
- Sugar maple industry
- Timber industry
- Nursery stock industry
- Water Quality
- Air Quality
- Quality of life





United States Department of Agriculture

What is at risk from ALB? - William H. Harsha Lake & East Fork Rec. Area





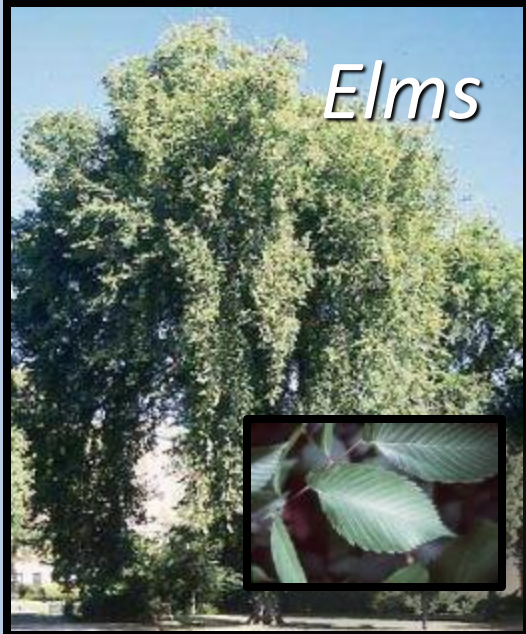
Maples



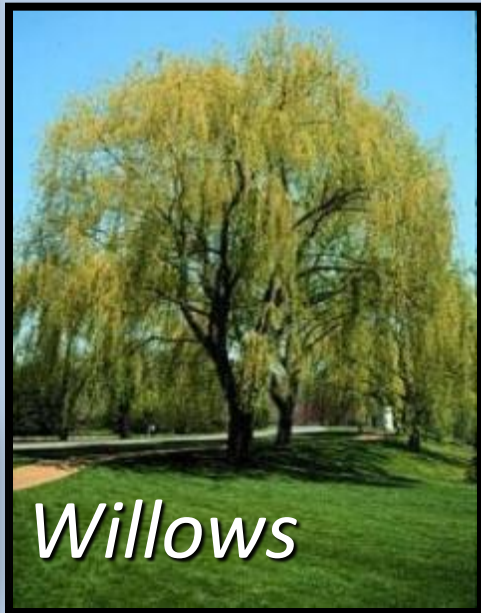
Birches



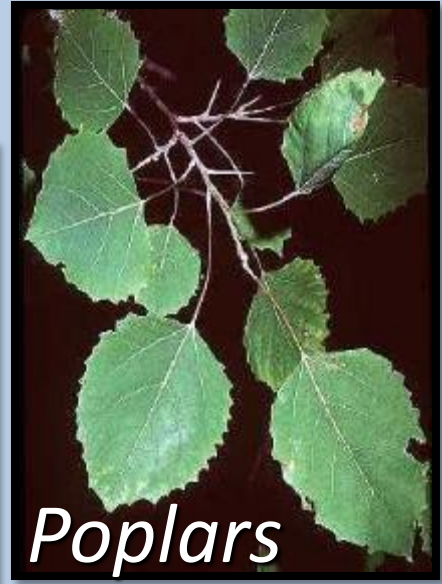
Buckeye



Elms



Willows



Poplars



Sycamores

**Representative ALB
Host Trees**

ALB Host Trees

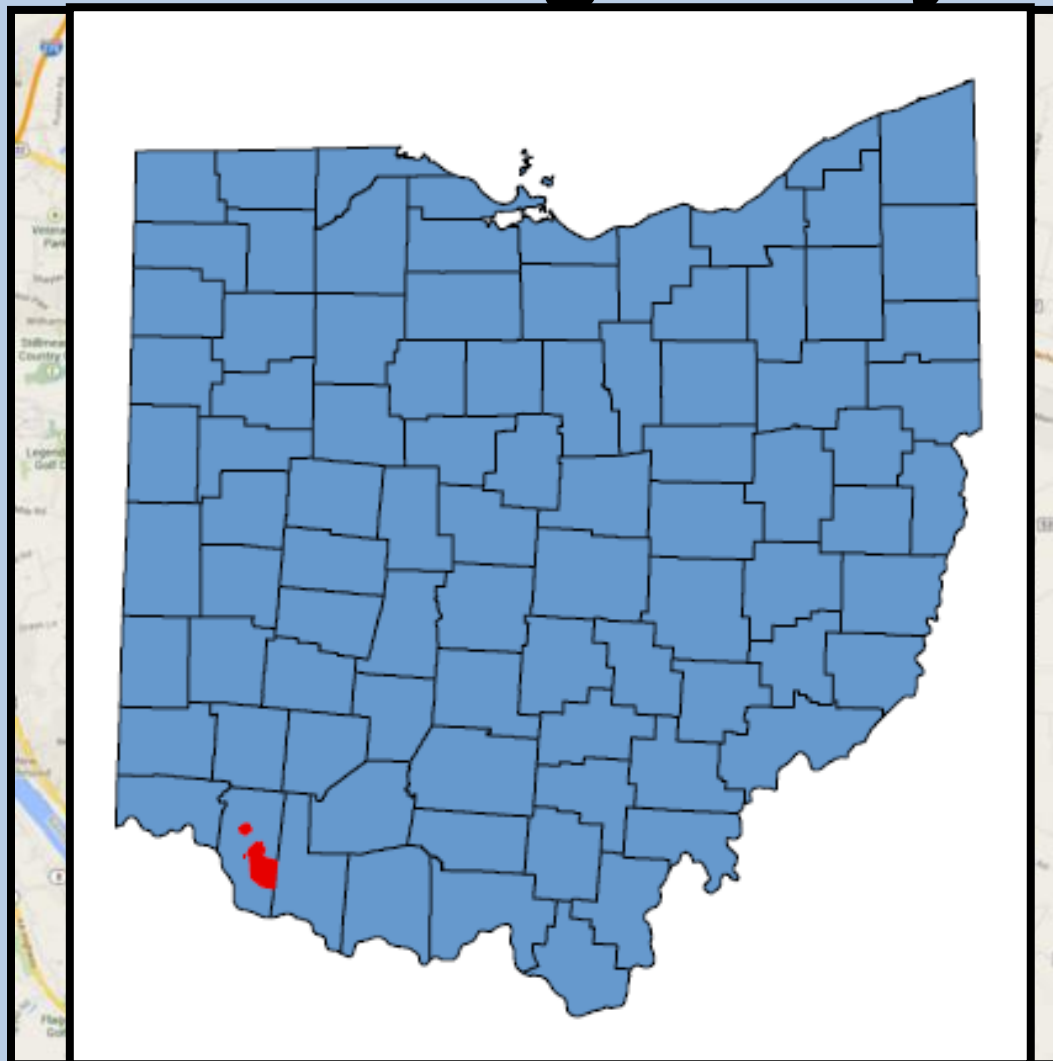
- All Maples (*Acer* spp.)
 - Red
 - Sugar
 - Boxelder
 - Silver
 - Norway
- Buckeyes / Horsechestnuts (*Aesculus* spp.)
- Elms (*Ulmus* spp.)
- Willows (*Salix* spp.)
- Sycamore (*Plantanus* spp.)
- Birches (*Betula* spp.)
- Poplars (*Populus* spp.)
- Ash (*Fraxinus* spp.)
- Mimosa (*Alizia* spp.)
- Katsura (*Cercidiphyllum* spp.)
- Mountain-ash (*Sorbus* spp.)
- Goldenraintree (*Koelreuteria* spp.)
- ~~Hackberry (*Celtis* spp.)~~



Where is ALB in North America?



Eradication strategy - Where is ALB in Ohio? Quarantine/regulatory work



Eradication strategy - Regulatory Work

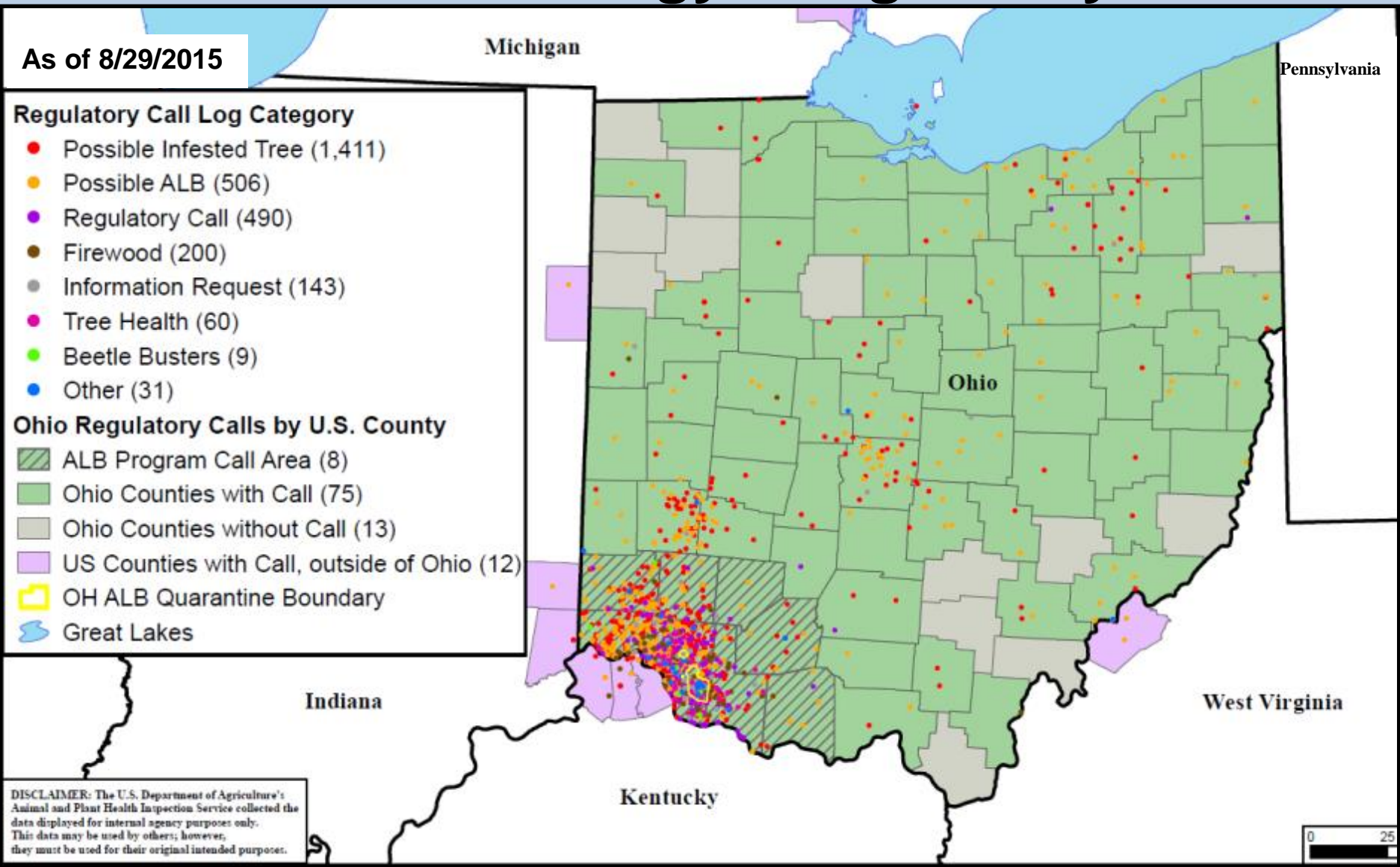
As of 8/29/2015

Regulatory Call Log Category

- Possible Infested Tree (1,411)
- Possible ALB (506)
- Regulatory Call (490)
- Firewood (200)
- Information Request (143)
- Tree Health (60)
- Beetle Busters (9)
- Other (31)

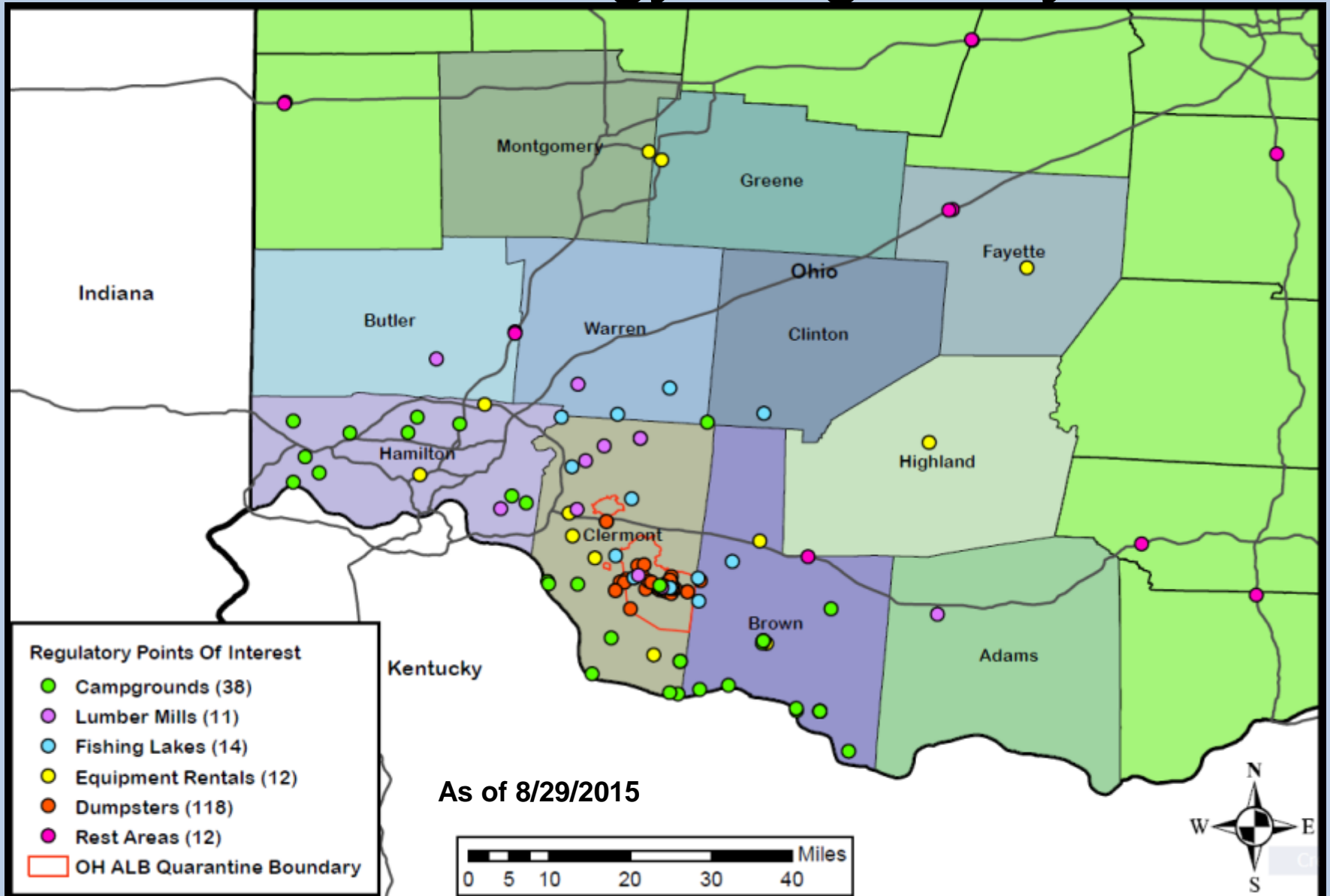
Ohio Regulatory Calls by U.S. County

- ▨ ALB Program Call Area (8)
- Ohio Counties with Call (75)
- Ohio Counties without Call (13)
- US Counties with Call, outside of Ohio (12)
- ▭ OH ALB Quarantine Boundary
- Great Lakes

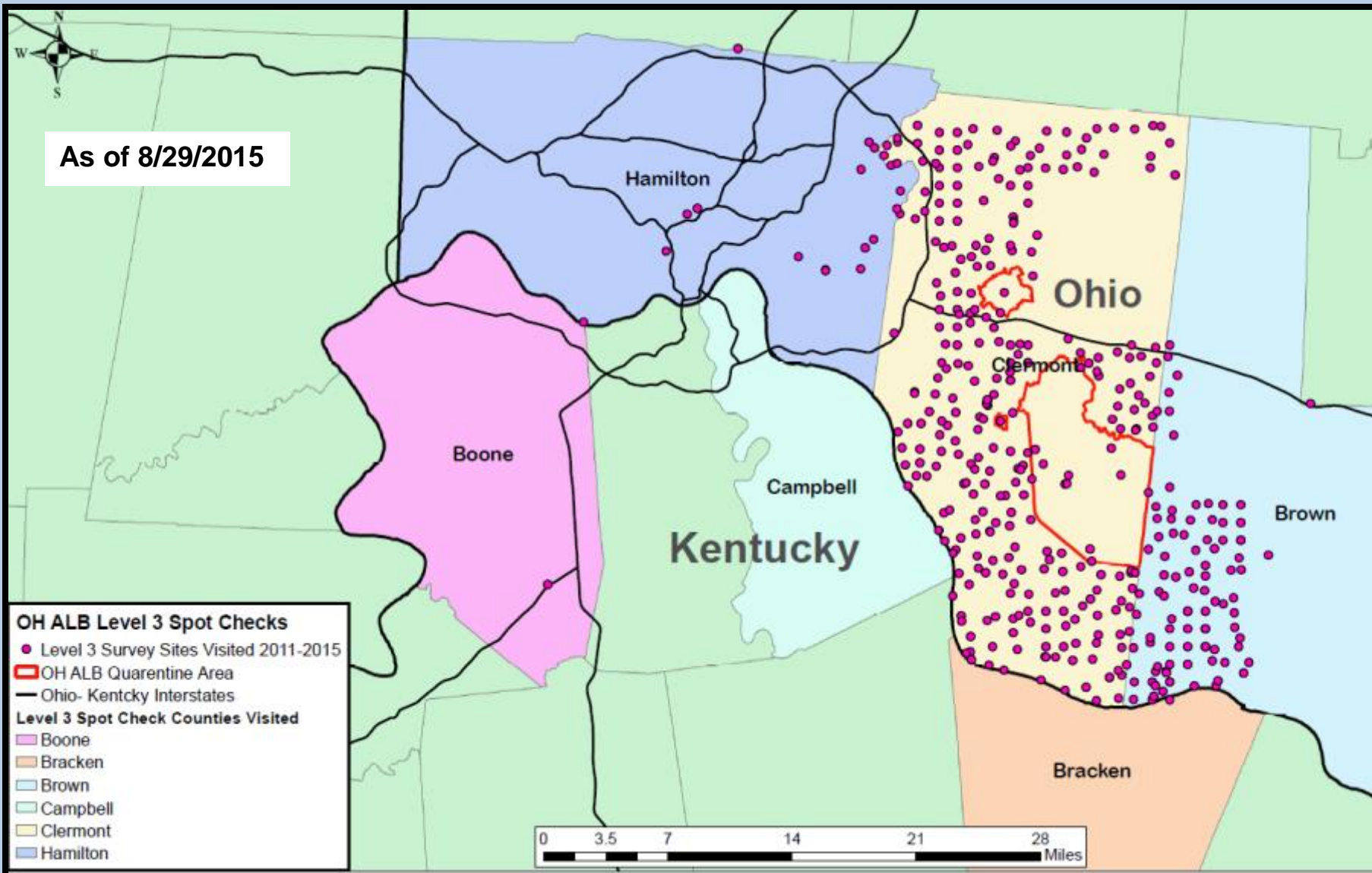


DISCLAIMER: The U.S. Department of Agriculture's Animal and Plant Health Inspection Service collected the data displayed for internal agency purposes only. This data may be used by others; however, they must be used for their original intended purposes.

Eradication strategy - Regulatory Work

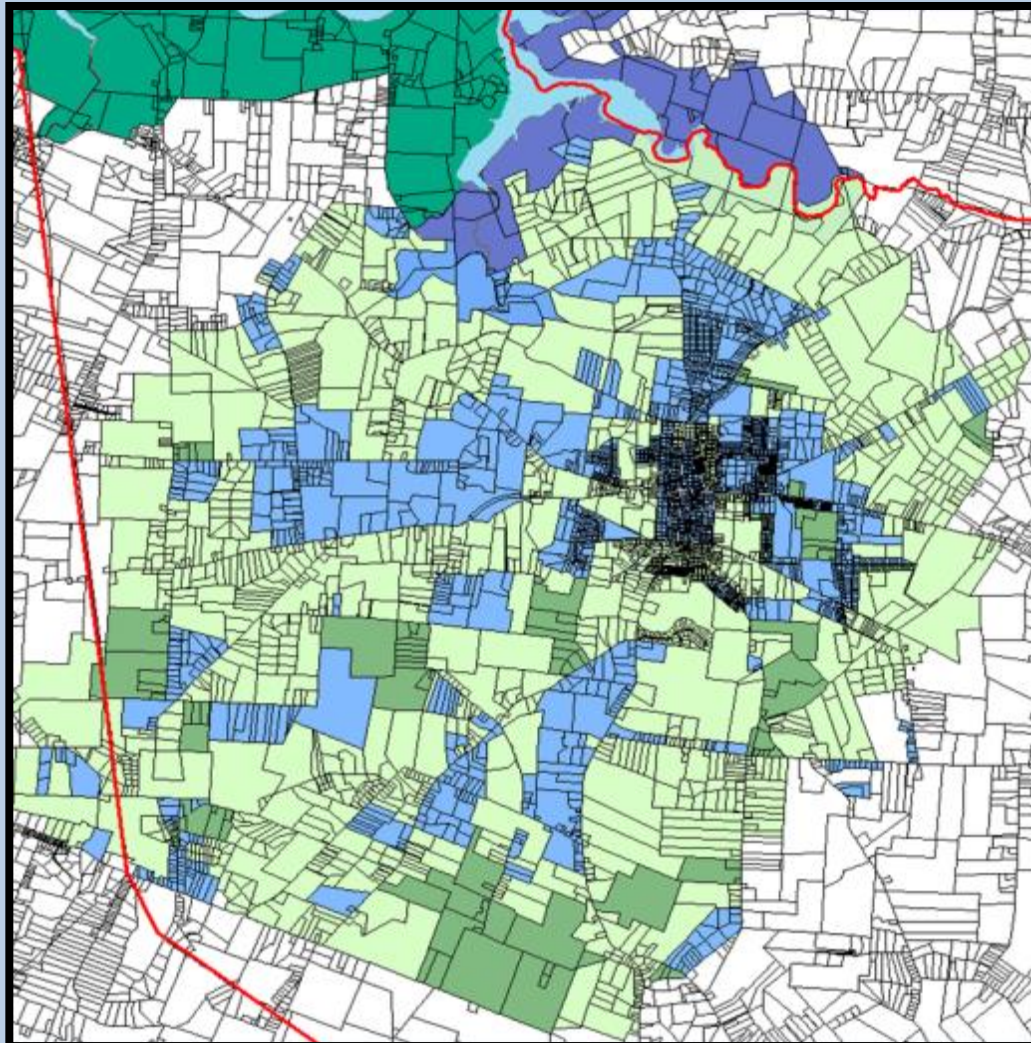


Eradication strategy – Survey/detection



Eradication strategy – Survey/detection

As of 9/5/2015



Eradication strategy – Survey/detection



Eradication strategy – Survey/detection





Dave Benninger



Dave Benninger





Dave Benninger



Dave Benninger



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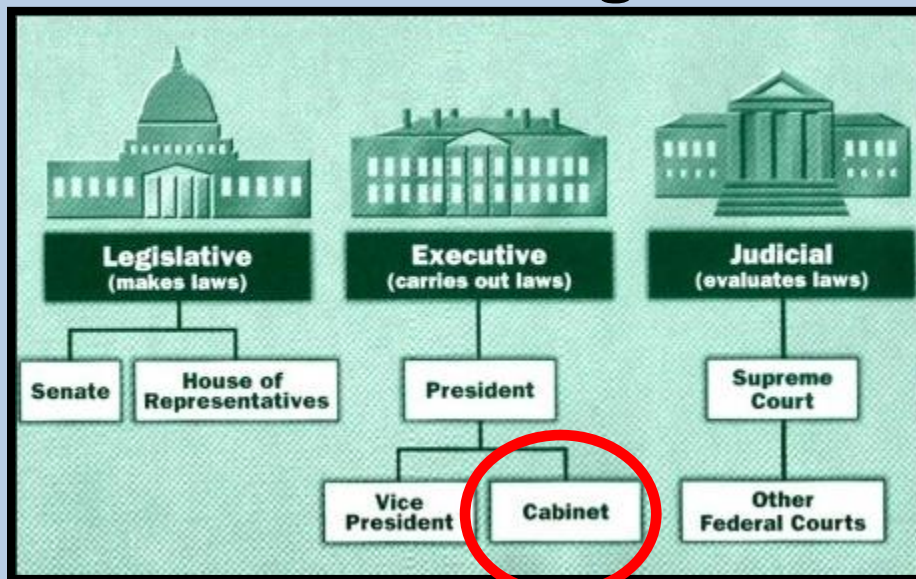
Dave Benninger



Dave Benninger

Asian Longhorned Beetle Program – Who are we?

Branches of the Federal Government

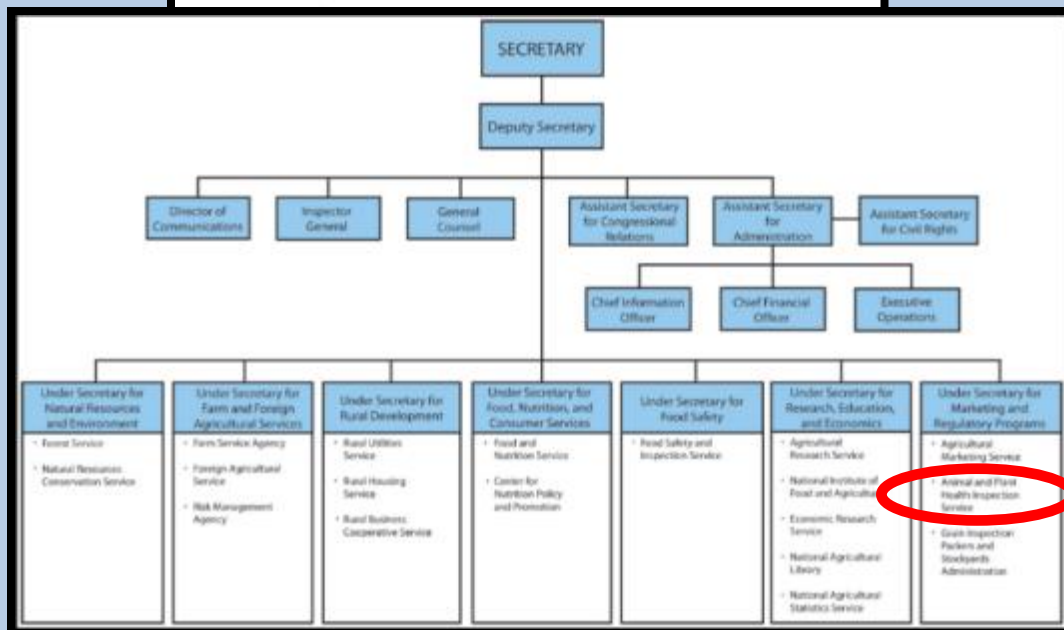


Departments of the Executive Branch



Asian Longhorned Beetle Program – Who are we?

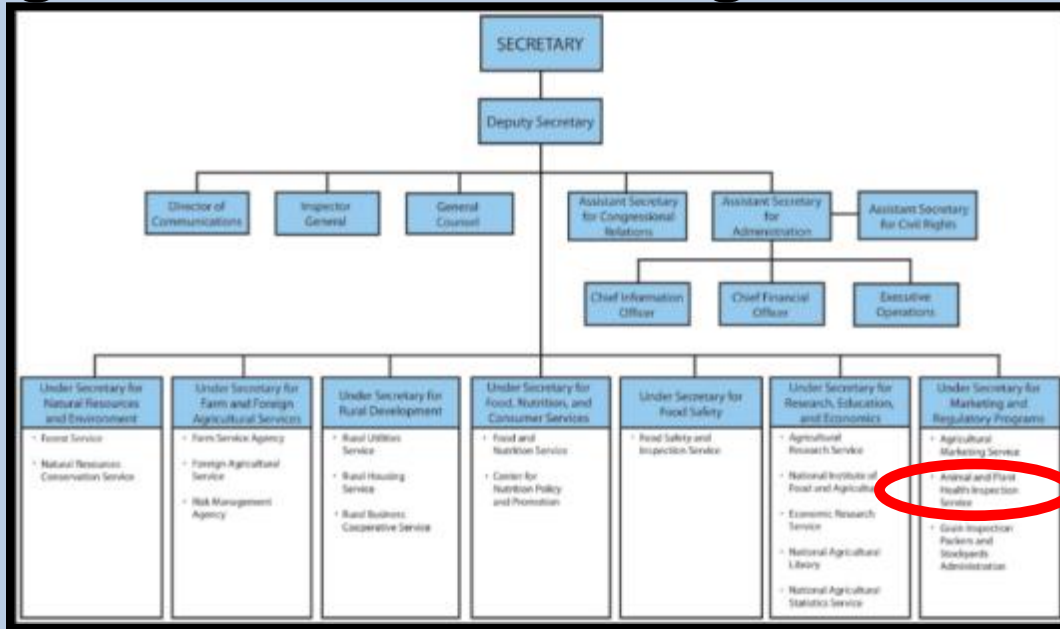
Departments of the Executive Branch



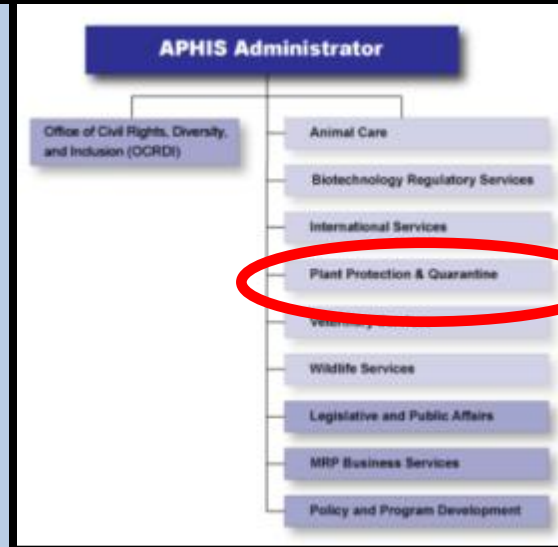
USDA Agencies



Asian Longhorned Beetle Program – Who are we?



USDA Agencies



APHIS Divisions

Asian Longhorned Beetle Program Authority

Plant Protection Act 2000

(7 US Code 7701 – 7 US Code 7772)

<http://www.aphis.usda.gov/brs/pdf/PlantProtAct2000.pdf>

= Law passed by US Congress



Interpretation of the law

Code of Federal Regulations (CFR)

Title 7 : Agriculture

Chapter 3 (subparts 300-399) : APHIS

Subpart 301 : Domestic Quarantine Notices

Subparts 51 - 51-9 : Asian Longhorned Beetle

7 CFR 301:51 – 7 CFR 301:51-9

http://www.aphis.usda.gov/plant_health/plant_pest_info/asian_lhb/downloads/albcfr12.pdf

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e.g. Federal Order, Interim Rule, Final Rule

Published in the Federal Register before incorporation into the CFR

NOTE: Ohio Administrative Code parallel rule 901:5-57 regulates intrastate movement

<http://codes.ohio.gov/oac/901%3A5-57>



Implementation of regulations

Manuals, SOPs, Guidelines

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e.g. Asian Longhorned Beetle Response Guidelines

http://www.aphis.usda.gov/plant_health/plant_pest_info/asian_lhb/downloads/response-guidelines.pdf

Eradication strategy – Removals

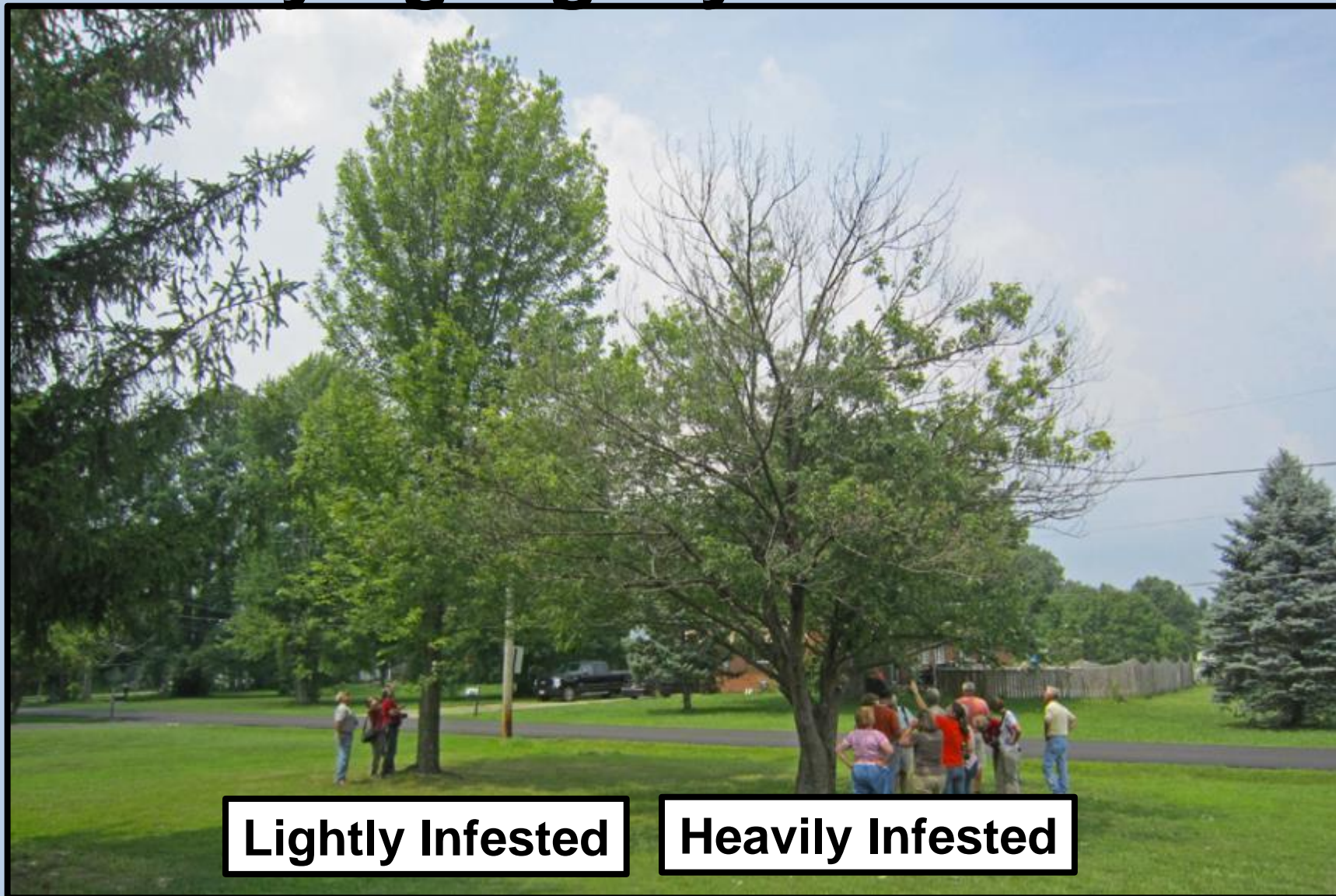
- Infested tree & high-risk host removals
- Property owner notification and work plan development
- Tree cutting
- Stump management
- Debris pickup
- Debris deregulation
- Restoration
- Property owner signoff
- Replant



Eradication strategy – High-Risk Host Removals

- What makes a tree a high-risk for ALB?
 - Host tree for ALB
 - Within a ½ mile of a known infested tree.
- Why remove high-risk host trees?
 - Lightly infested trees are difficult to detect and some will be “**false negatives.**”
 - The longer an infested tree is allowed to remain as suitable ALB habitat, the longer it can be a source of dispersing ALB.

Identifying Lightly Infested Trees



Lightly Infested

Heavily Infested

Identifying Lightly Infested Trees

- Positive identification of ALB in lightly infested trees is a challenge:
 - **Ground Surveys:** Only 20 – 40% of lightly infested trees are identified
 - **Aerial Surveys/Experienced Climbers:** Only 65 – 75% of lightly infested trees are identified



ALB Eradication



**Chainsaw: the most effective
ALB eradication tool**





















Asian Longhorned Beetle
Bethel, Ohio
Clermont County

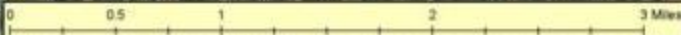
Initial Detection: May 2011



East Fork State Park

Initial Detection

BETHEL



- Infested Trees
- Removed Trees

Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: June 2011

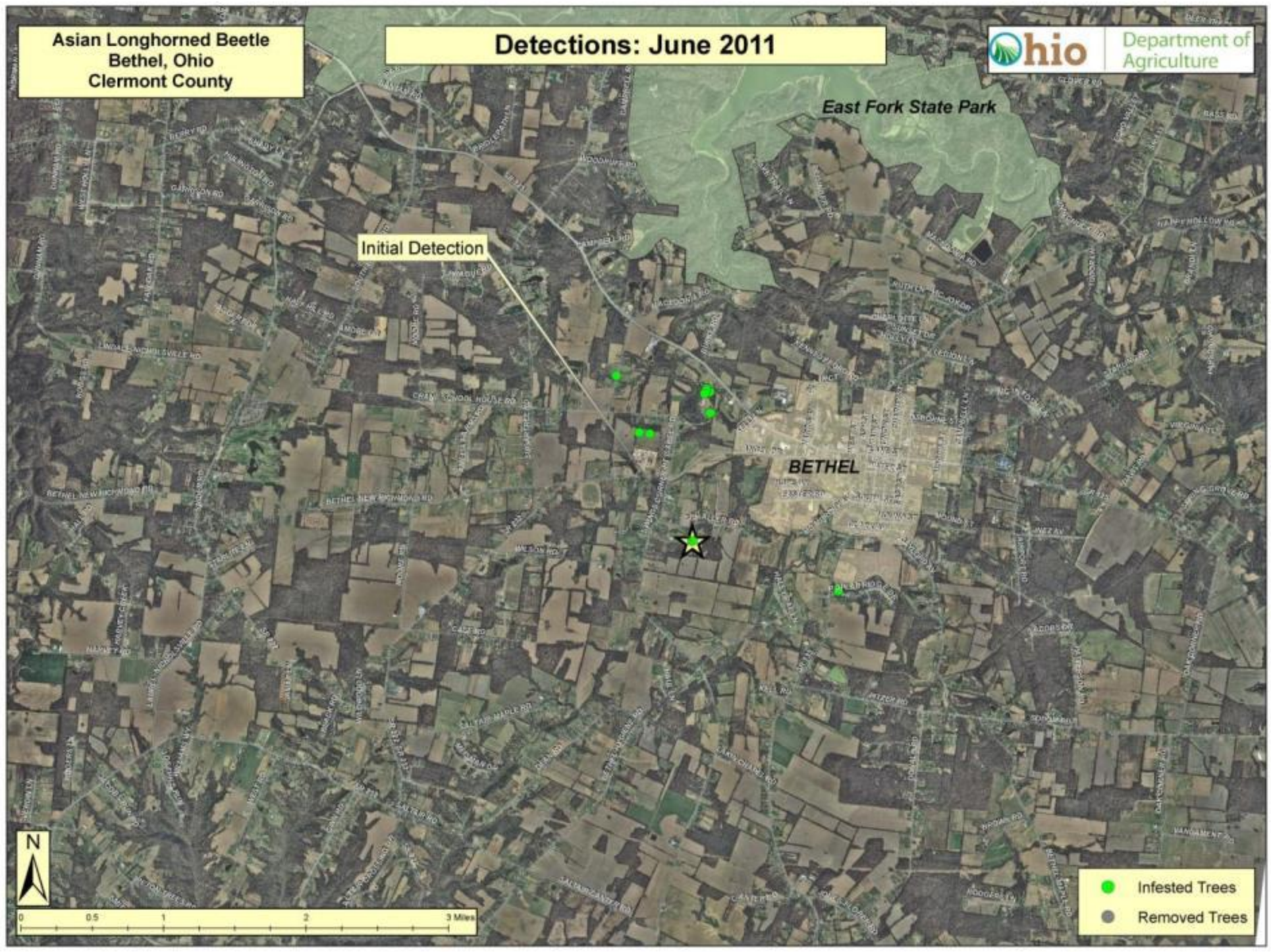
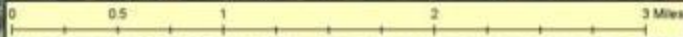


East Fork State Park

Initial Detection

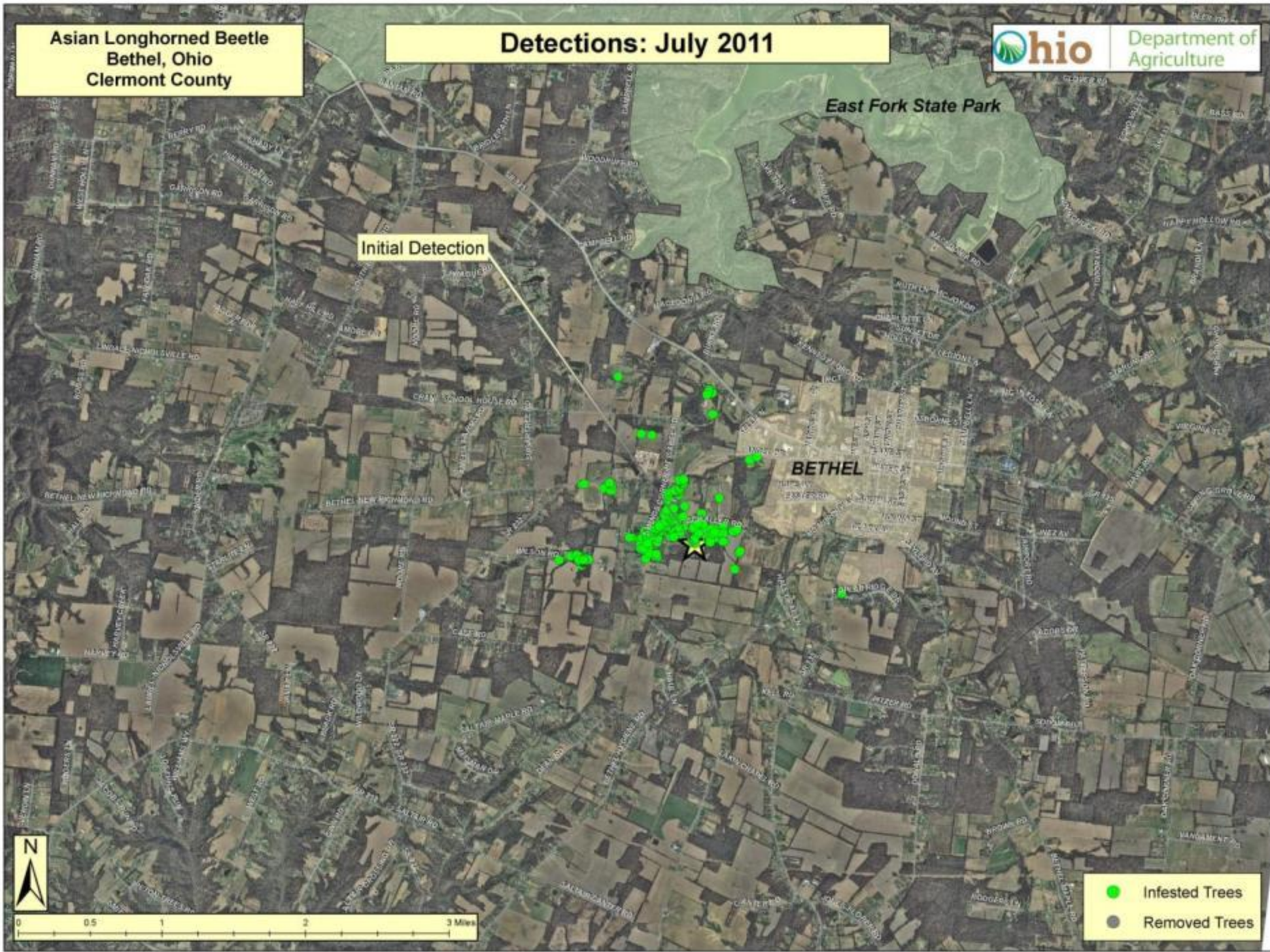
BETHEL

- Infested Trees
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: July 2011



Initial Detection

East Fork State Park

BETHEL

- Infested Trees
- Removed Trees



0 0.5 1 2 3 Miles

Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: August 2011



East Fork State Park

Initial Detection

BETHEL

Amelia Detections
August 2011



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0 0.5 1 2 3 Miles

Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: September 2011



East Fork State Park

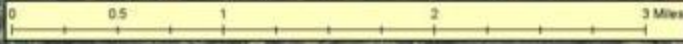
Initial Detection

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Amelia Detections
August 2011



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: October 2011

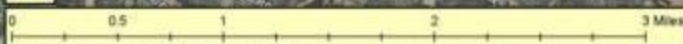


East Fork State Park

Initial Detection

BETHEL

Amelia Detections
August 2011



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Bethel, Ohio
Clermont County

Detections: November 2011

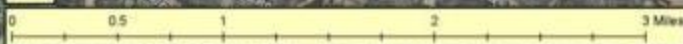


East Fork State Park

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Bethel, Ohio
Clermont County

Removals: November 2011



East Fork State Park

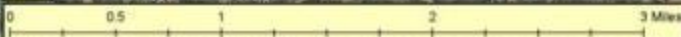
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: December 2011



East Fork State Park

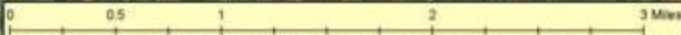
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Bethel, Ohio
Clermont County

Removals: December 2011

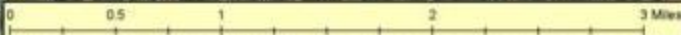


East Fork State Park

Initial Detection

BETHEL

Amelia Removals
December 2011



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: January 2012



East Fork State Park

Initial Detection

BETHEL

Amelia Removals
December 2011



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: January 2012

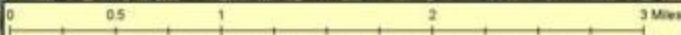


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Initial Detection

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December 2011



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: February 2012



East Fork State Park

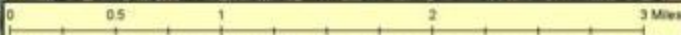
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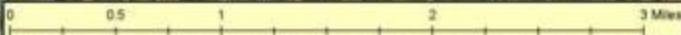
Removals: February 2012



East Fork State Park

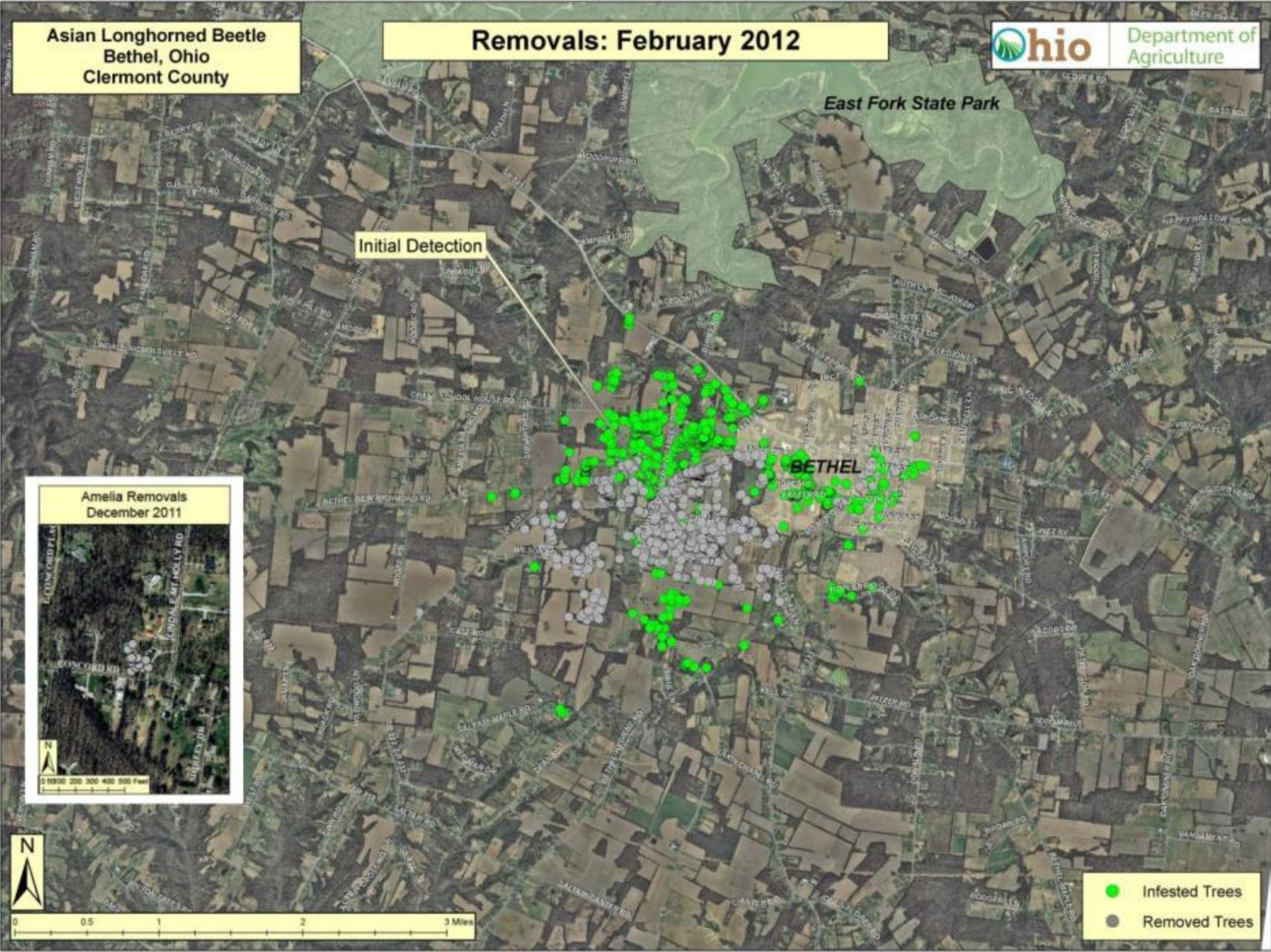
Initial Detection

BETHEL

Amelia Removals
December 2011



-  Infested Trees
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: March 2012



East Fork State Park

Initial Detection

BETHEL

Amelia Removals
December 2011



- Infested Trees
- Removed Trees



0 0.5 1 2 3 Miles

Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: March 2012

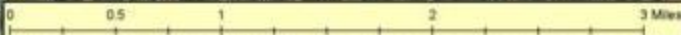


East Fork State Park

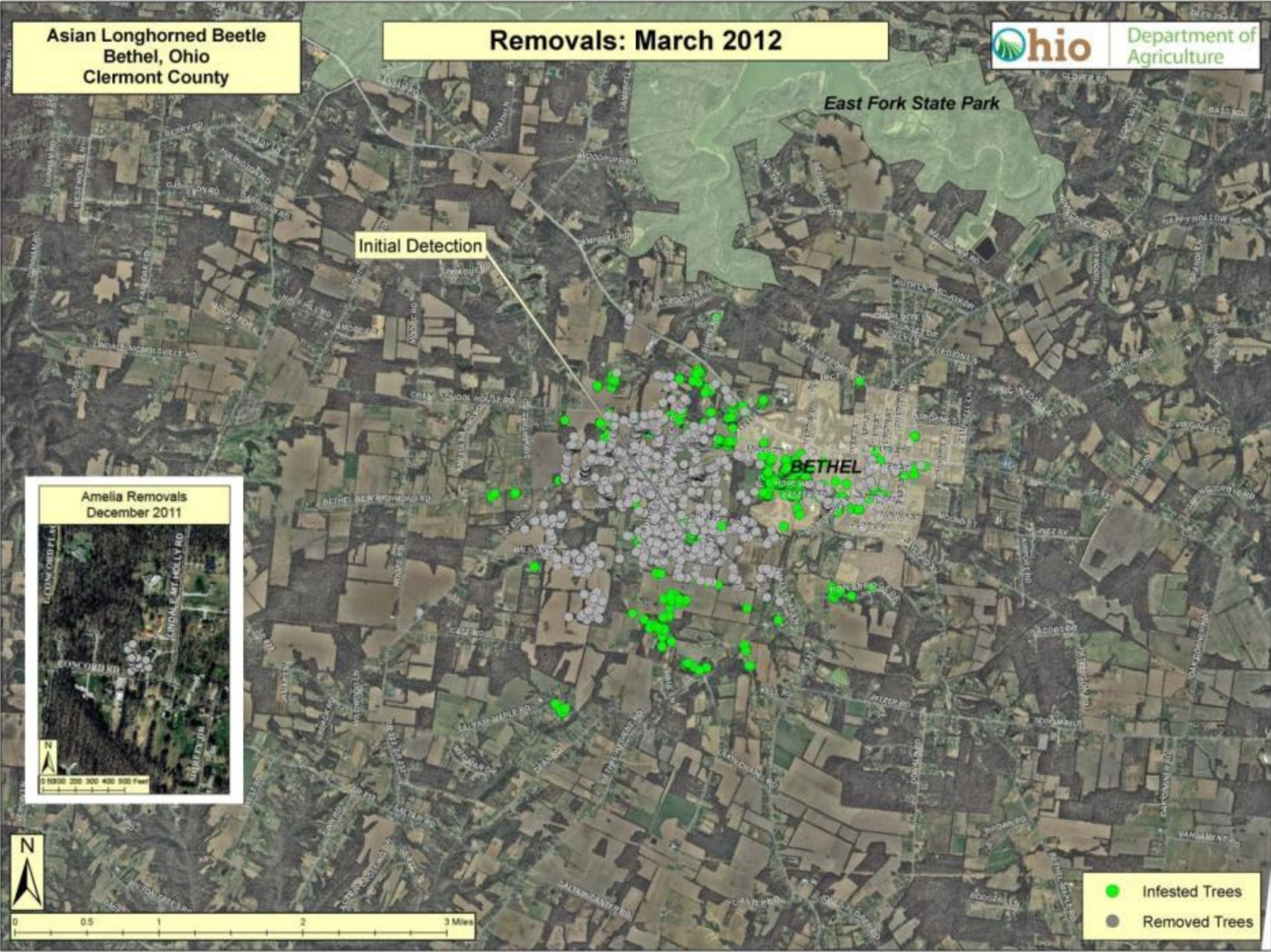
Initial Detection

BETHEL

Amelia Removals
December 2011



- Infested Trees
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: April 2012



East Fork State Park

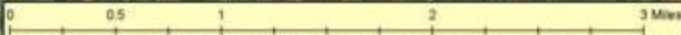
Initial Detection

BETHEL

Amelia Removals
December 2011



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: April 2012



East Fork State Park

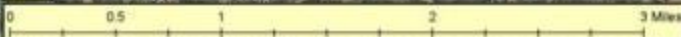
Initial Detection

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Bethel, Ohio
Clermont County

Detections: May 2012

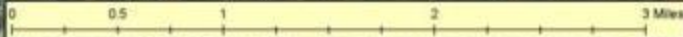


East Fork State Park

Initial Detection

BETHEL

Amelia Detections
May 2012



- Infested Trees
- Removed Trees

Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: May 2012

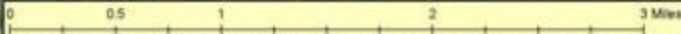


East Fork State Park

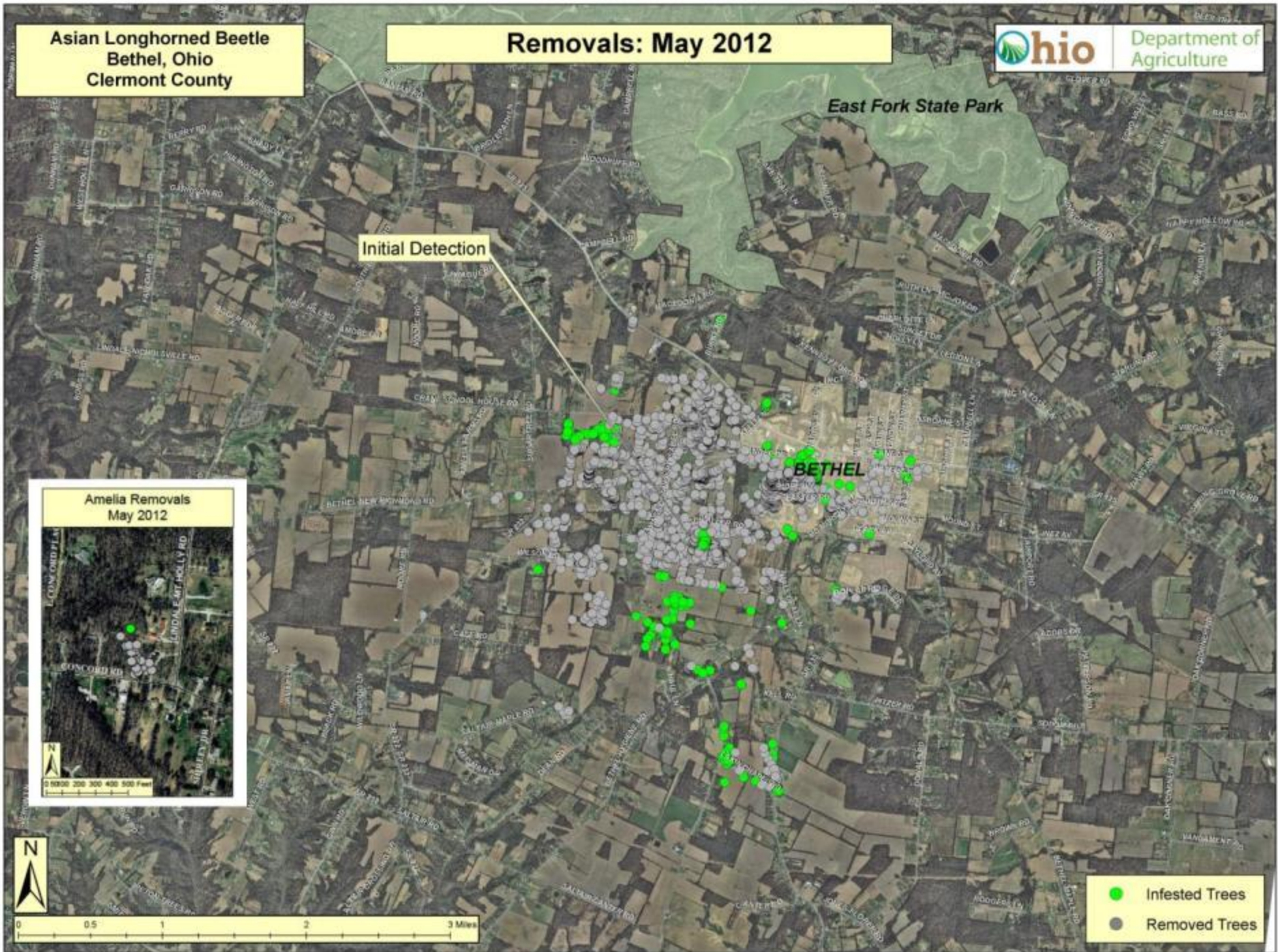
Initial Detection

BETHEL

Amelia Removals
May 2012



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: June 2012

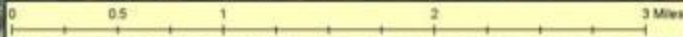


East Fork State Park

Initial Detection

BETHEL

Amelia Detections
June 2012



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Asian Longhorned Beetle
Bethel, Ohio
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Removals: June 2012

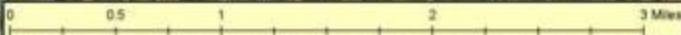


East Fork State Park

Initial Detection

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June 2012



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Asian Longhorned Beetle
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Detections: July 2012



East Fork State Park

Stonelick Detections
July 2012

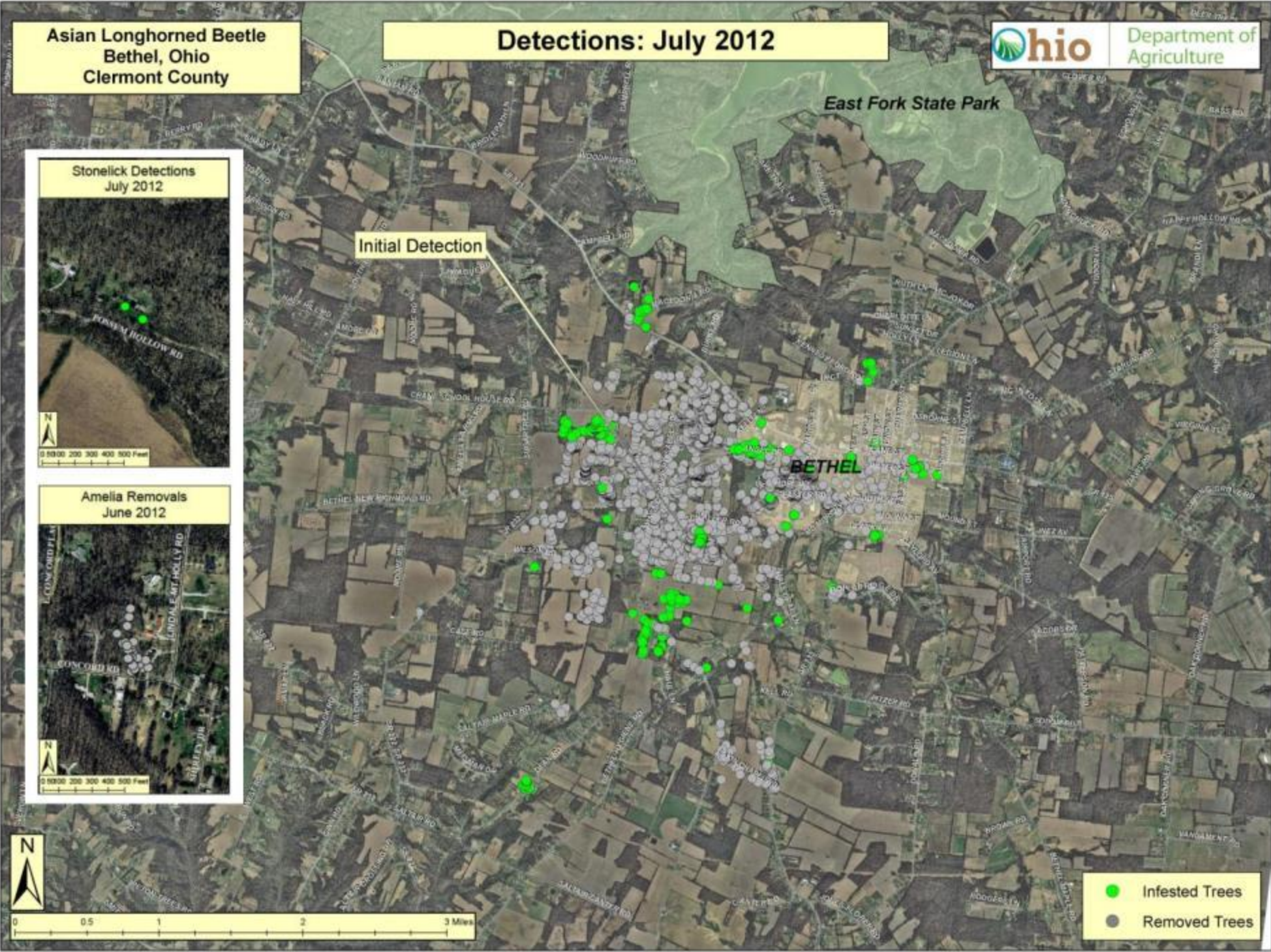


Initial Detection

Amelia Removes
June 2012



- Infested Trees
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: July 2012

East Fork State Park

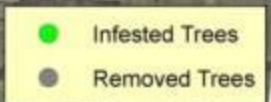
BETHEL

Initial Detection

Stonelick Removals
July 2012



Amelia Removals
June 2012



Asian Longhorned Beetle
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Detections: August 2012



East Fork State Park

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East Fork State Park

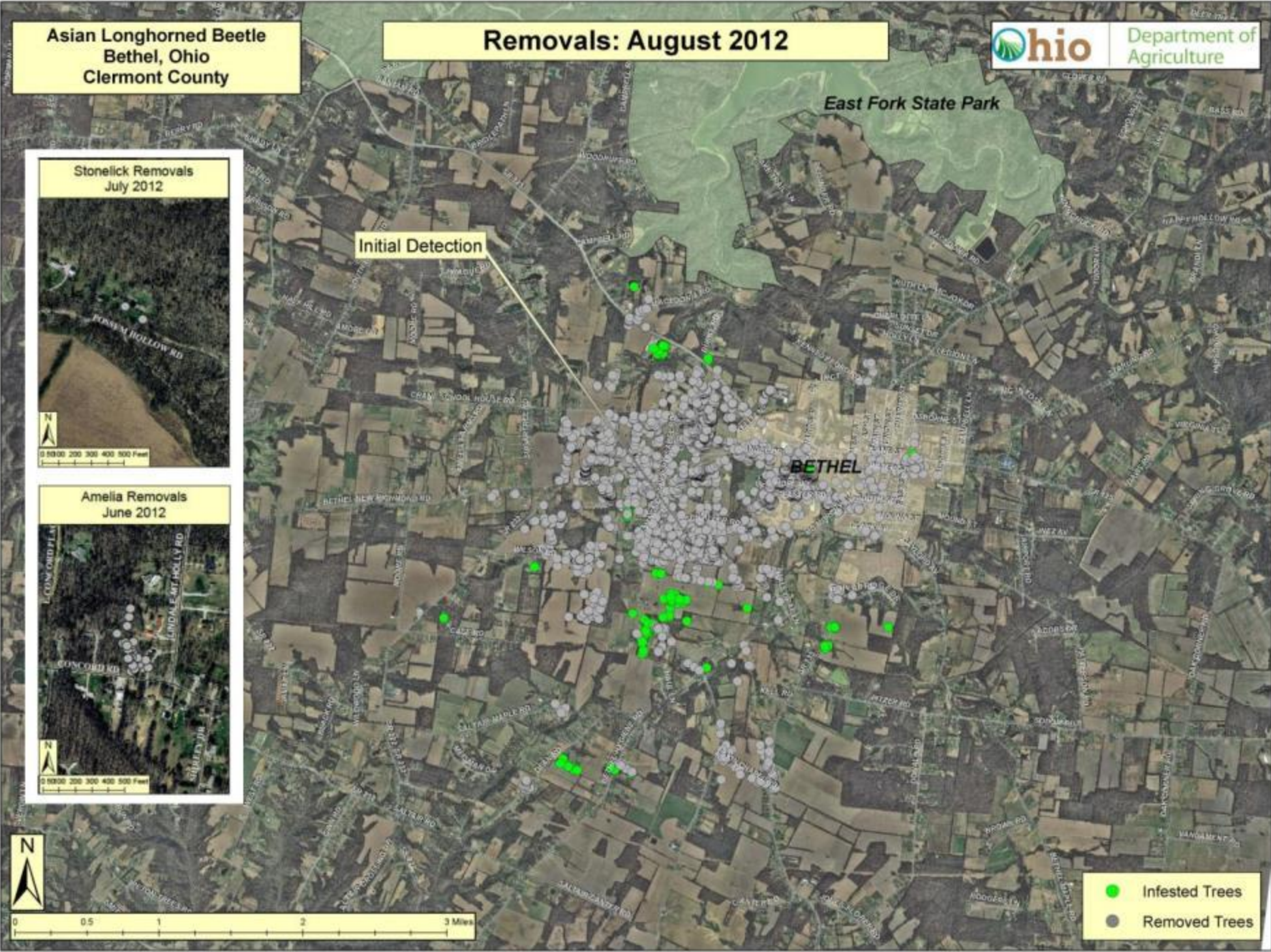
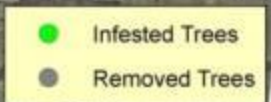
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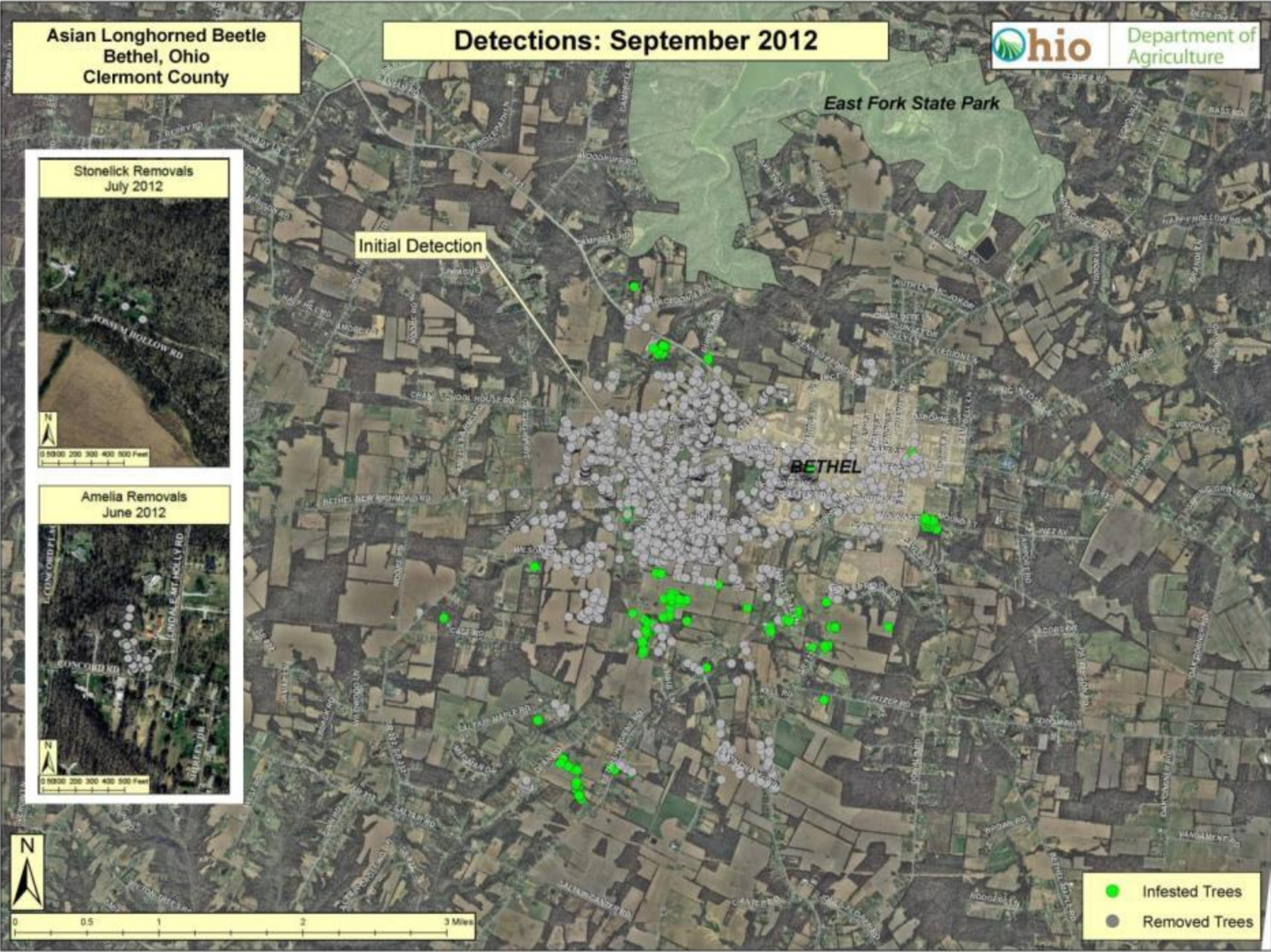
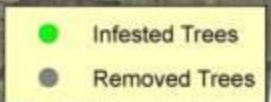
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Detections: October 2012



East Fork State Park

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Removals: October 2012

East Fork State Park

BETHEL



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Asian Longhorned Beetle
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Detections: November 2012



East Fork State Park

BETHEL

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July 2012



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East Fork State Park

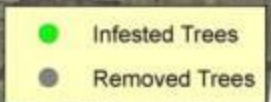
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Detections: January 2013



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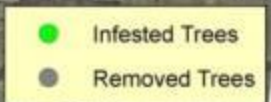
Initial Detection

BETHEL

Stonelick Removes
December 2012



Amelia Detections
February 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: February 2013

East Fork State Park

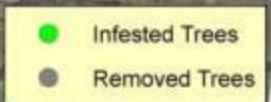
Initial Detection

BETHEL

Stonelick Removals
December 2012



Amelia Detections
February 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: March 2013



East Fork State Park

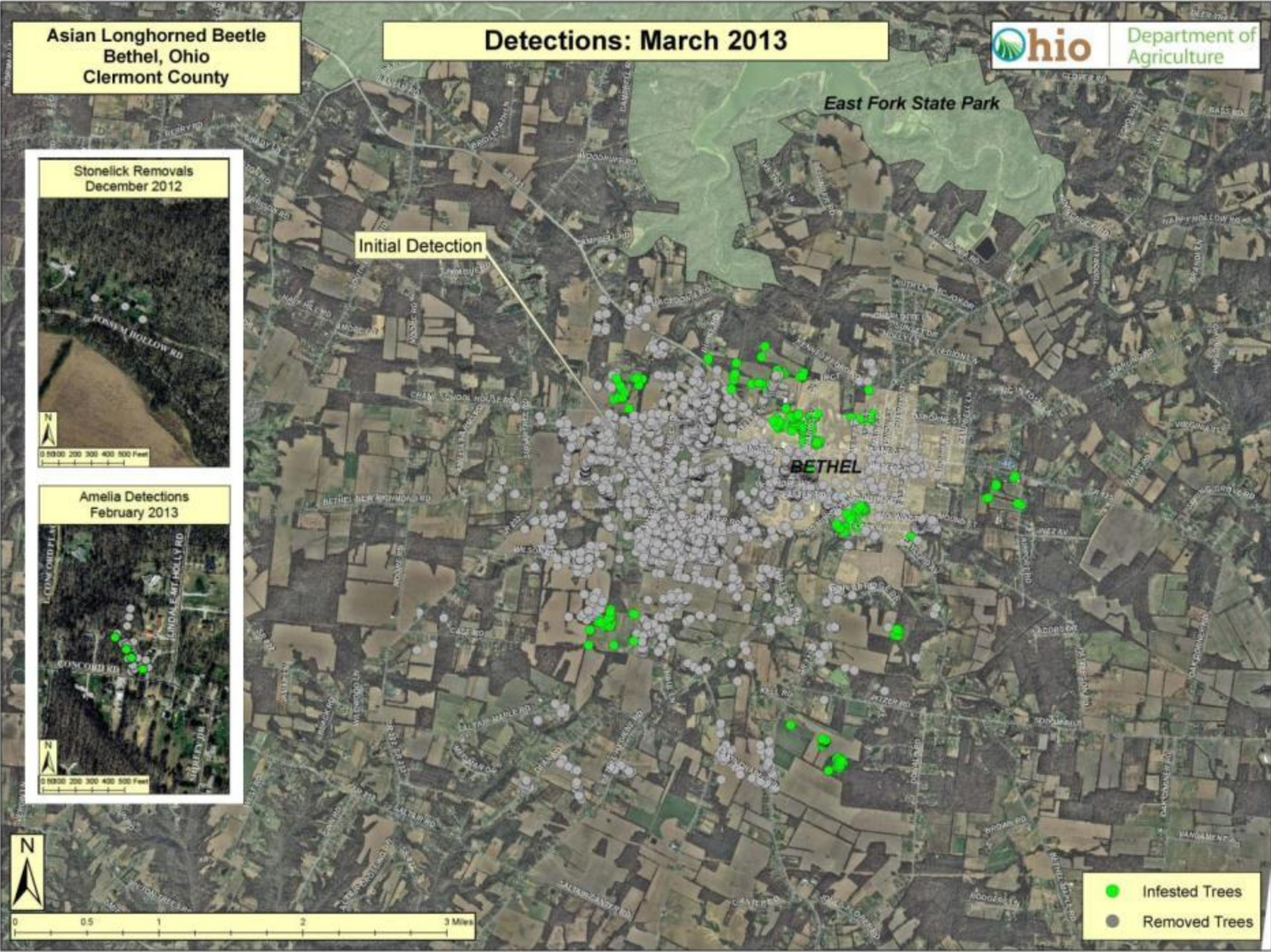
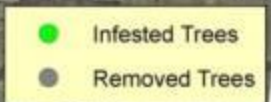
Initial Detection

BETHEL

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December 2012



Amelia Detections
February 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: March 2013



East Fork State Park

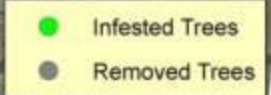
BETHEL

Initial Detection

Stonelick Removals
December 2012



Amelia Detections
February 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: April 2013



East Fork State Park

Initial Detection

BETHEL

Stonelick Removes
December 2012



Amelia Detections
February 2013



- Infested Trees
- Removed Trees

Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: April 2013



East Fork State Park

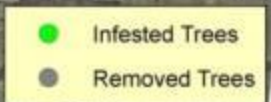
Initial Detection

BETHEL

Stonelick Removals
December 2012



Amelia Removals
April 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: May 2013



East Fork State Park

Initial Detection

BETHEL

Stonelick Removes
December 2012



Amelia Removes
April 2013



- Infested Trees
- Removed Trees



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: May 2013



East Fork State Park

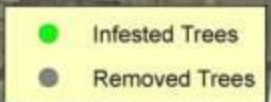
Initial Detection

BETHEL

Stonelick Removals
December 2012



Amelia Removals
April 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: June 2013



East Fork State Park

Initial Detection

BETHEL

Stonelick Removes
December 2012



Amelia Removes
April 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: June 2013



East Fork State Park

Initial Detection

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December 2012



Amelia Removals
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: July 2013



East Fork State Park

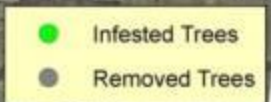
Initial Detection

BETHEL

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December 2012



Amelia Detections
July 2013



Asian Longhorned Beetle
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Clermont County

Removals: July 2013



East Fork State Park

Initial Detection

BETHEL

Stonelick Removals
December 2012



Amelia Removals
July 2013



- Infested Trees
- Removed Trees



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: August 2013



East Fork State Park

Initial Detection

BETHEL

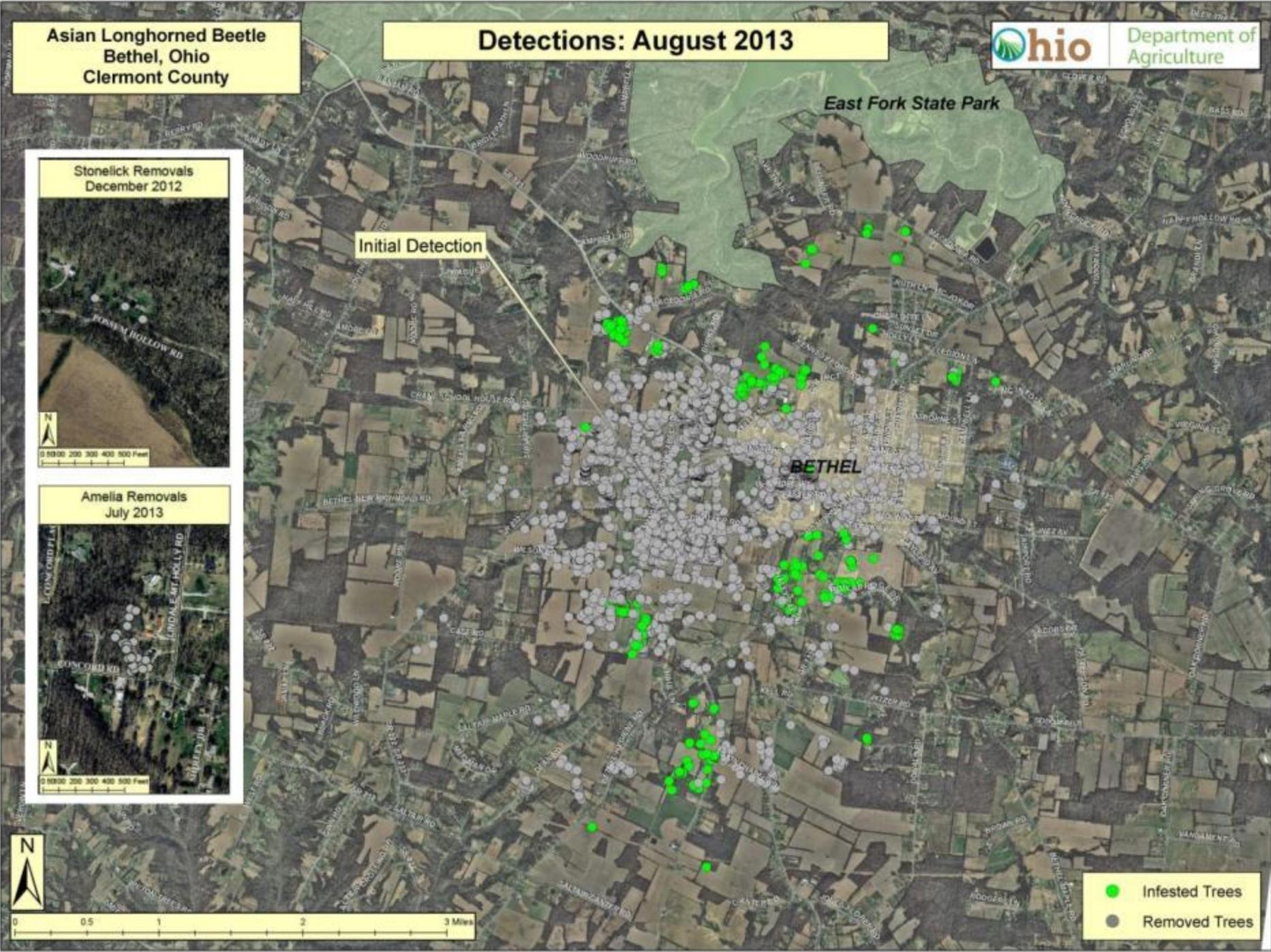
Stonelick Removes
December 2012



Amelia Removes
July 2013



- Infested Trees
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: August 2013

East Fork State Park

Initial Detection



BETHEL

Stonelick Removals
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Amelia Removals
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: September 2013



East Fork State Park

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Clermont County

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East Fork State Park

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Clermont County

Detections: October 2013



East Fork State Park

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Clermont County

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East Fork State Park

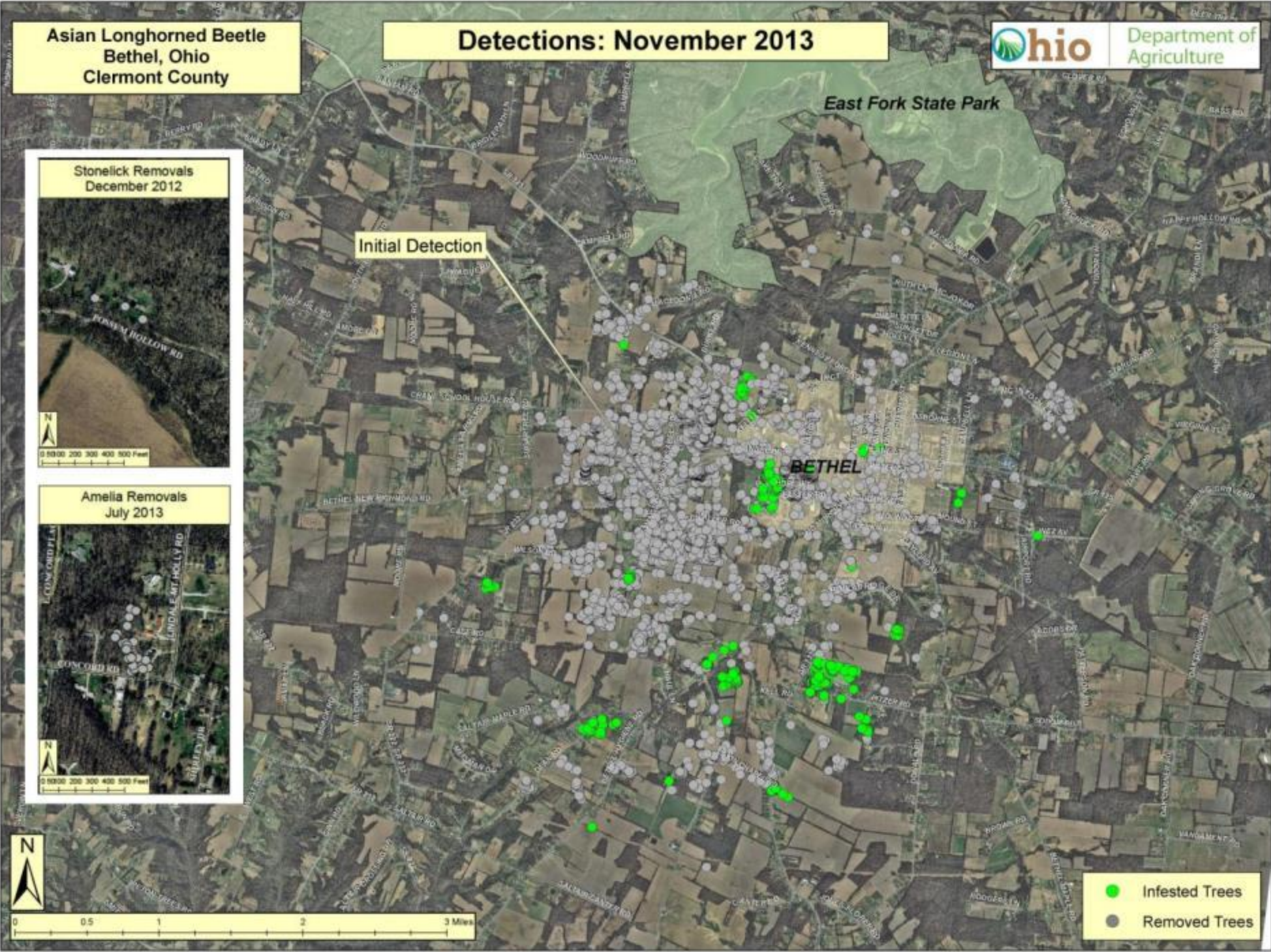
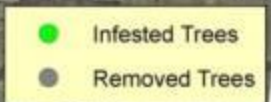
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Asian Longhorned Beetle
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Clermont County

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East Fork State Park

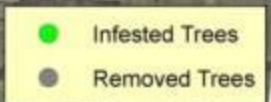
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East Fork State Park

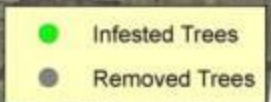
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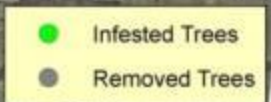
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Asian Longhorned Beetle
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Clermont County

Detections: January 2014



East Fork State Park

BETHEL

Initial Detection

Stonelick Removals
December 2012



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Bethel, Ohio
Clermont County

Removals: January 2014



East Fork State Park

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December 2012



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Bethel, Ohio
Clermont County

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East Fork State Park

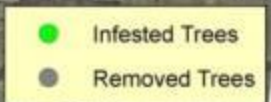
BETHEL

Initial Detection

Stonelick Removals
December 2012



Amelia Removals
July 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: February 2014

East Fork State Park

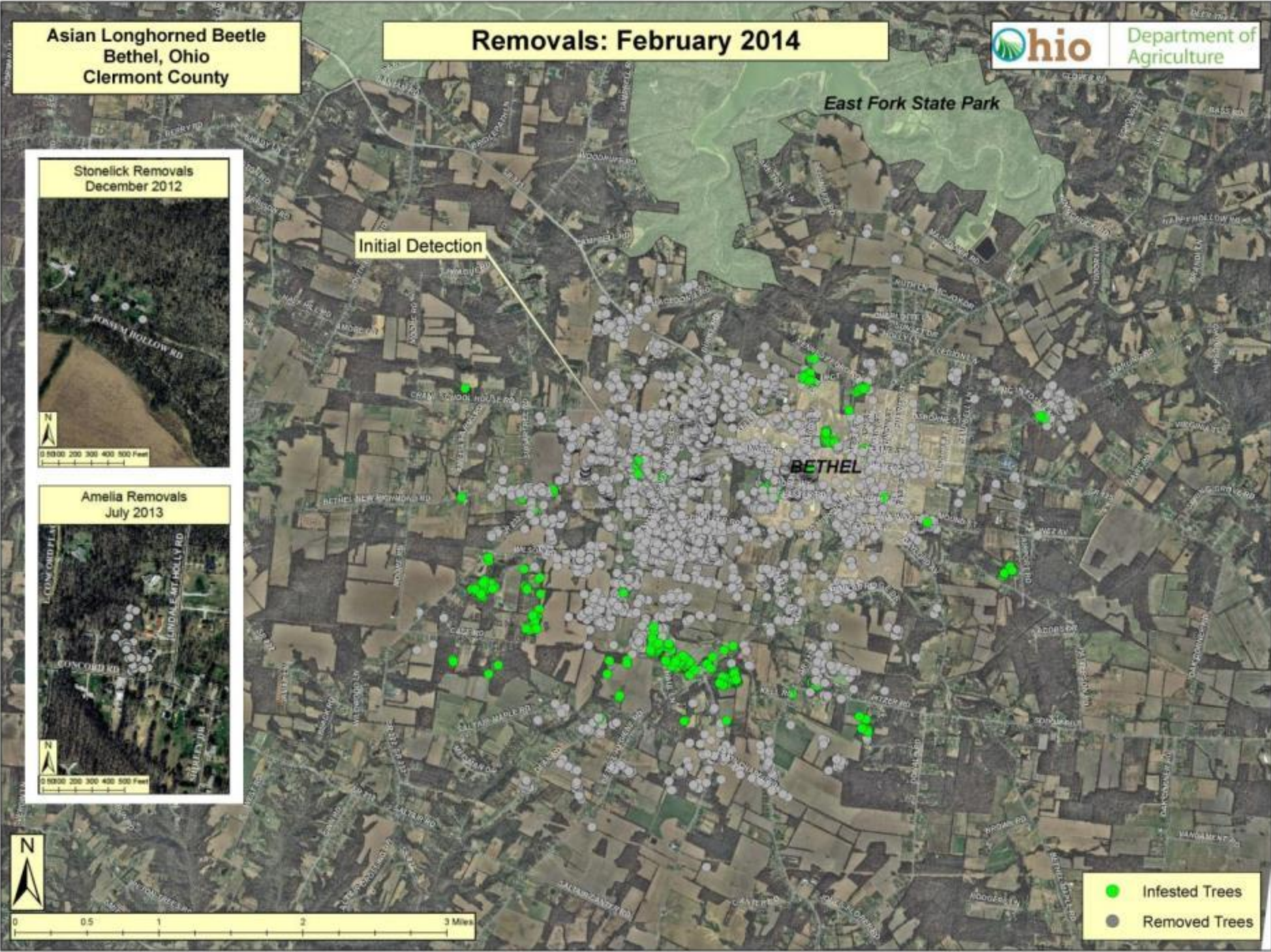
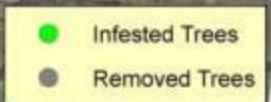
BETHEL

Initial Detection

Stonelick Removals
December 2012



Amelia Removals
July 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: March 2014



East Fork State Park

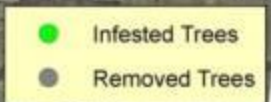
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Asian Longhorned Beetle
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Clermont County

Removals: March 2014



East Fork State Park

Initial Detection

BETHEL

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July 2013



- Infested Trees
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: April 2014



East Fork State Park

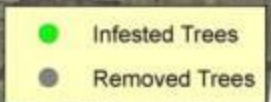
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December 2012



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Asian Longhorned Beetle
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Clermont County

Removals: April 2014



East Fork State Park

Initial Detection

BETHEL

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December 2012



Amelia Removals
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: May 2014



East Fork State Park

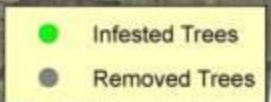
Initial Detection

BETHEL

Stonelick Removes
December 2012



Amelia Removes
July 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: May 2014



East Fork State Park

Initial Detection

BETHEL

Stonelick Removals
December 2012



Amelia Removals
July 2013



- Infested Trees
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0 0.5 1 2 3 Miles

Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: June 2014



East Fork State Park

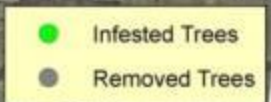
Initial Detection

BETHEL

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December 2012



Amelia Removes
July 2013



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: June 2014



East Fork State Park

Initial Detection

BETHEL

Stonelick Removals
December 2012



Amelia Removals
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: July 2014



East Fork State Park

Initial Detection

BETHEL

Stonelick Removals
December 2012



Amelia Removals
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: July 2014



East Fork State Park

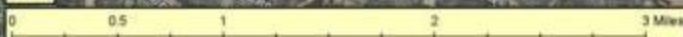
Initial Detection

BETHEL

Stonelick Removals
December 2012



Amelia Removals
July 2013



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- Removed Trees

Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: August 2014



East Fork State Park

Initial Detection

BETHEL

Stonelick Removes
December 2012



Amelia Removes
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: August 2014

East Fork State Park

Initial Detection



BETHEL

Stonelick Removals
December 2012



Amelia Removals
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: September 2014



East Fork State Park

Initial Detection

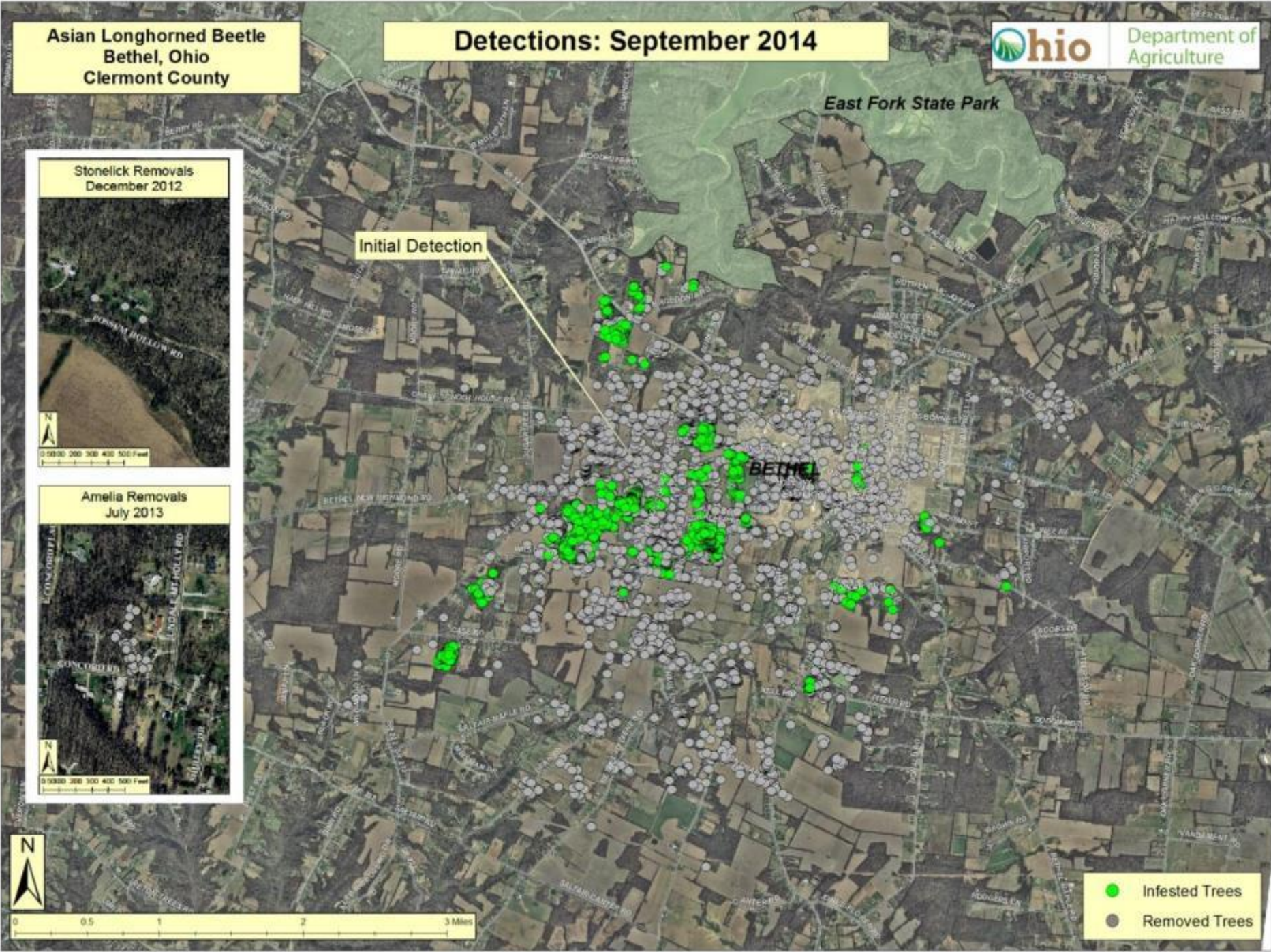
Stonelick Removes
December 2012



Amelia Removes
July 2013



- Infested Trees
- Removed Trees



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: September 2014



East Fork State Park

Initial Detection

Stonelick Removals
December 2012

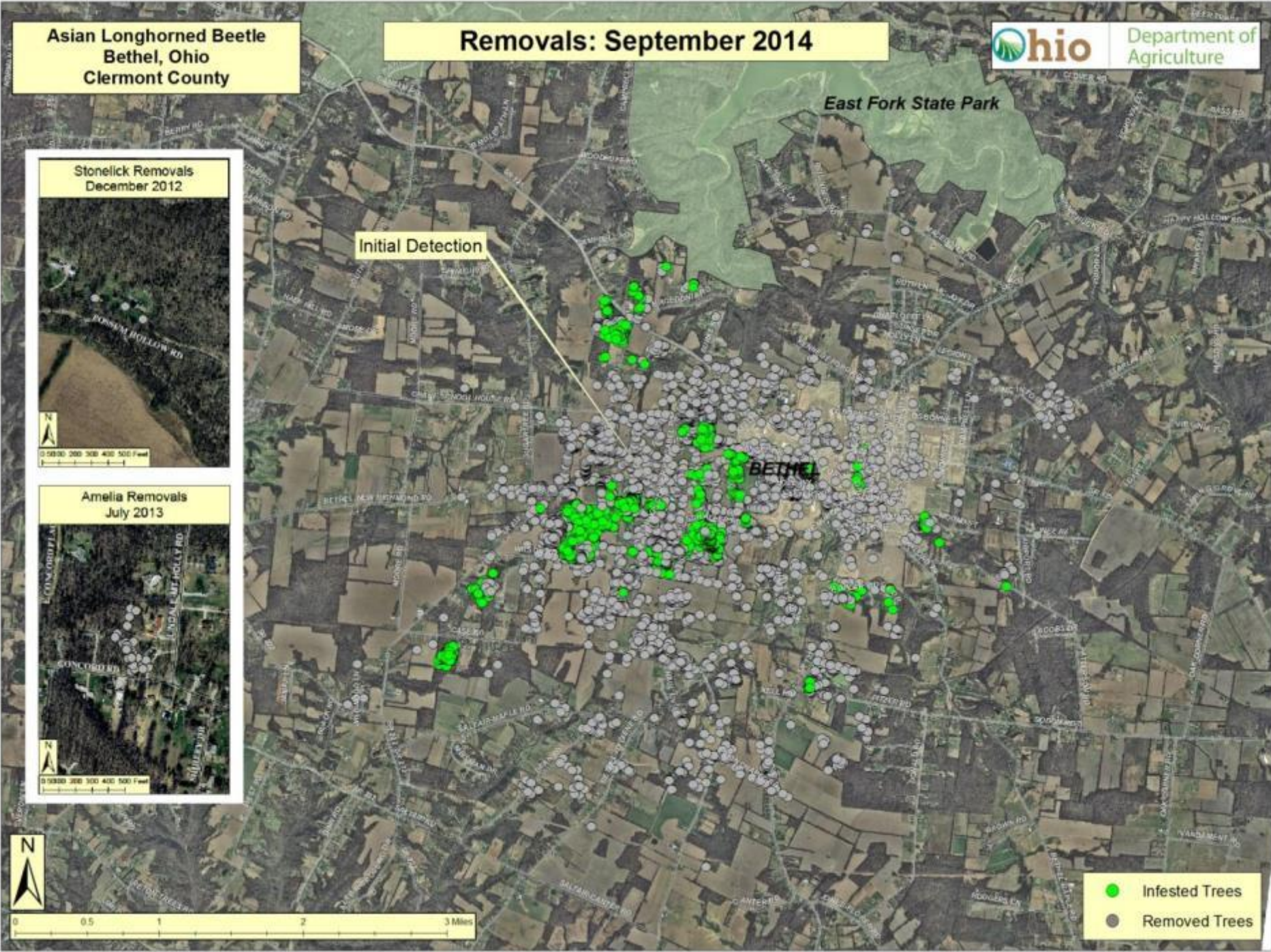


Amelia Removals
July 2013



0 0.5 1 2 3 Miles

- Infested Trees
- Removed Trees



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: October 2014



East Fork State Park

Initial Detection

Stonelick Removes
December 2012

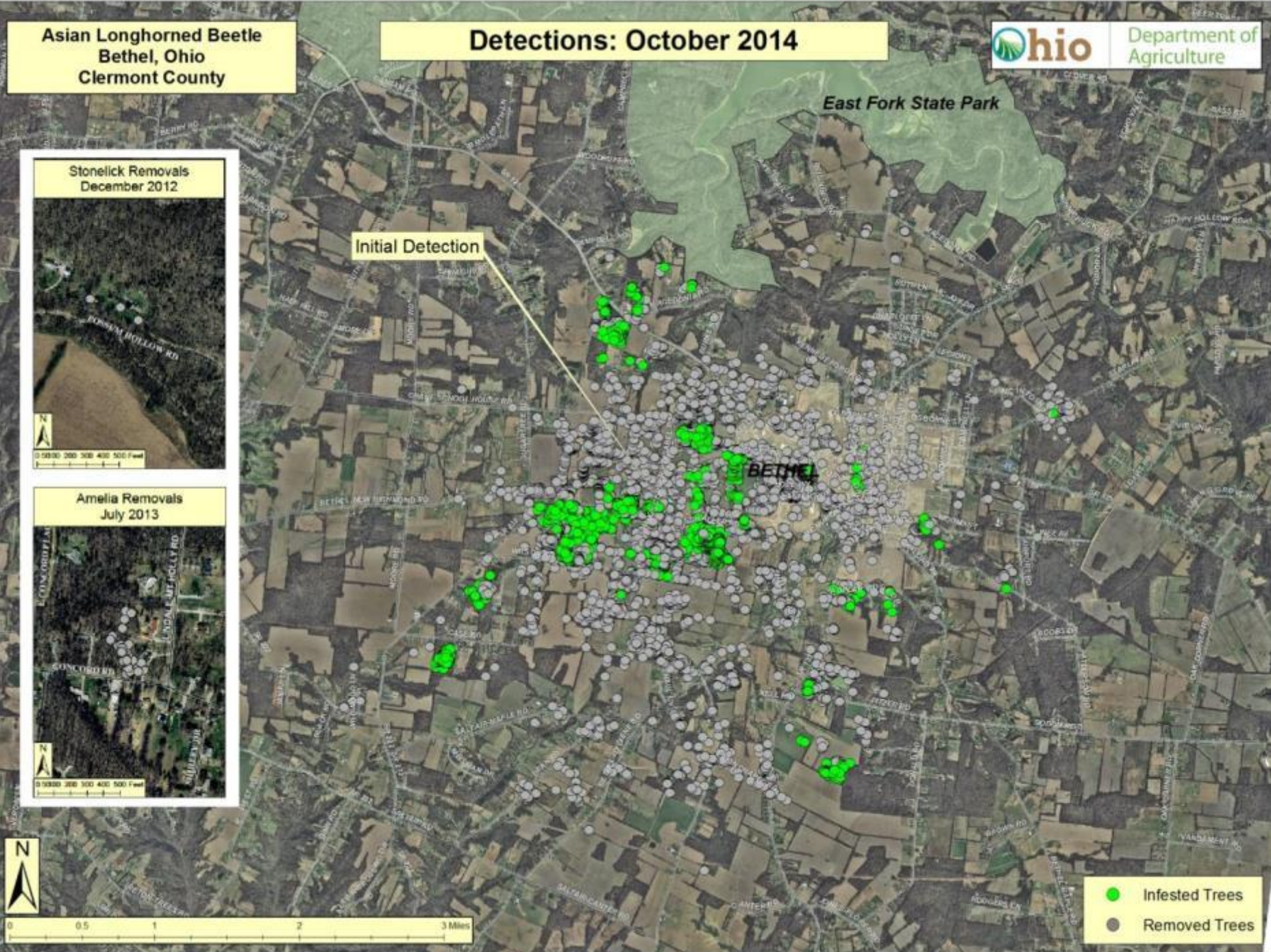


Amelia Removes
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: October 2014



East Fork State Park

Initial Detection

Stonelick Removals
December 2012

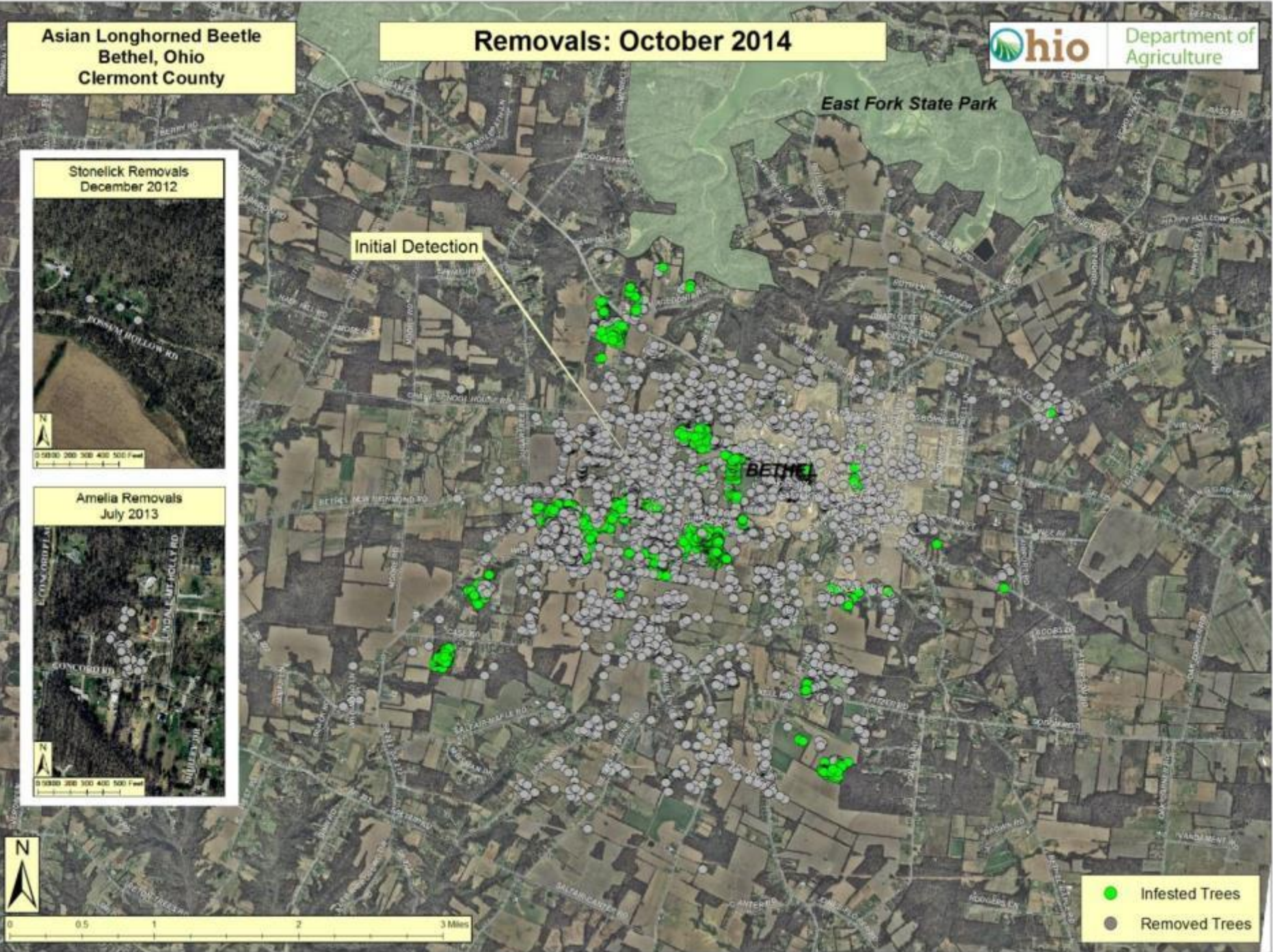


Amelia Removals
July 2013



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Bethel, Ohio
Clermont County

Detections: November 2014



East Fork State Park

Initial Detection

Stonelick Removes
December 2012

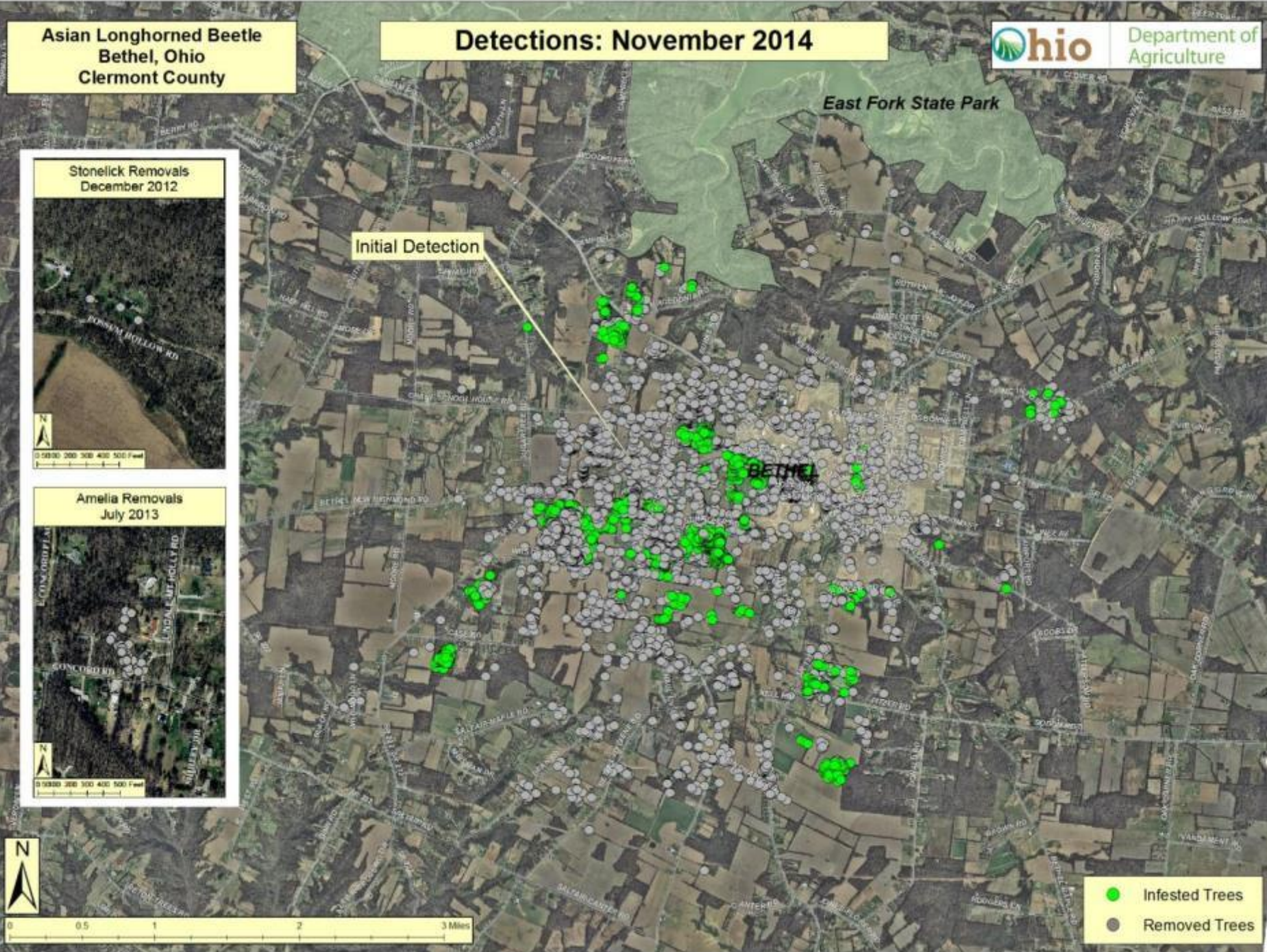


Amelia Removes
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: November 2014



East Fork State Park

Initial Detection

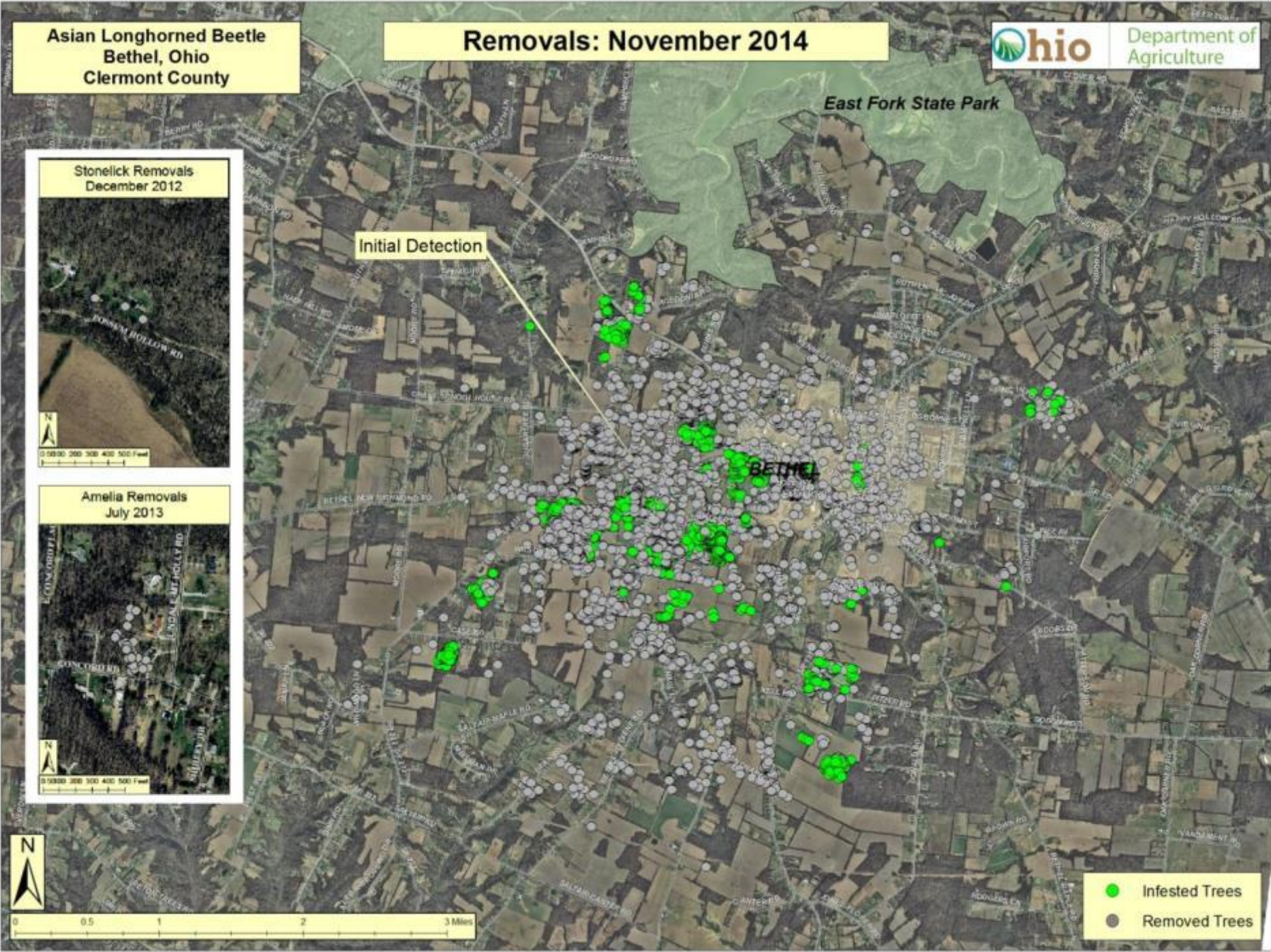
Stonelick Removals
December 2012



Amelia Removals
July 2013



- Infested Trees
- Removed Trees



Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: December 2014

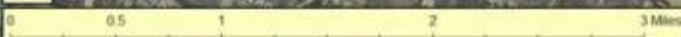
East Fork State Park

Initial Detection

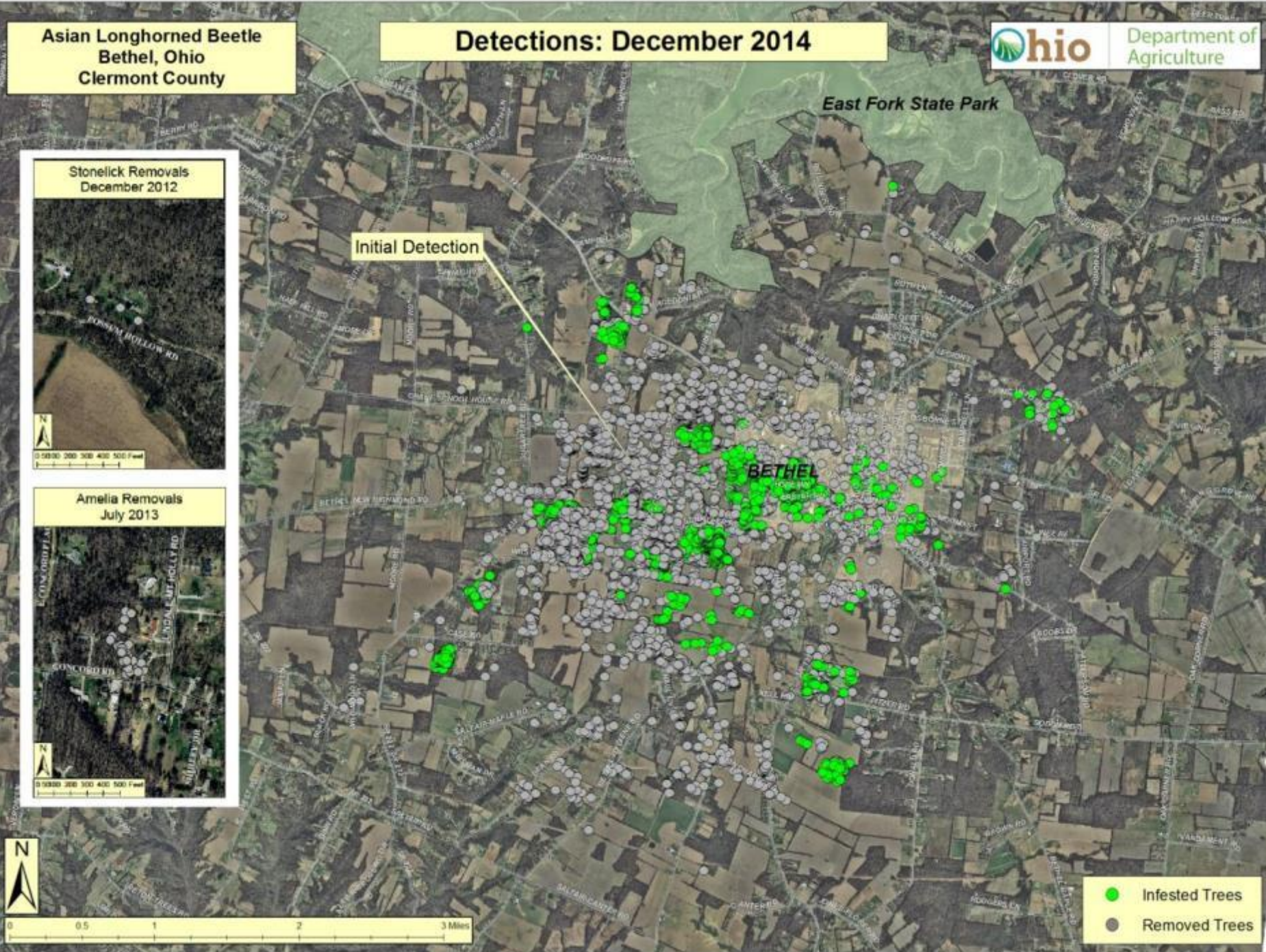
Stonelick Removes
December 2012



Amelia Removes
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: December 2014



East Fork State Park

Stonelick Removals
December 2012



Initial Detection

Amelia Removals
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: January 2015



East Fork State Park

Initial Detection

Stonelick Removes
December 2012

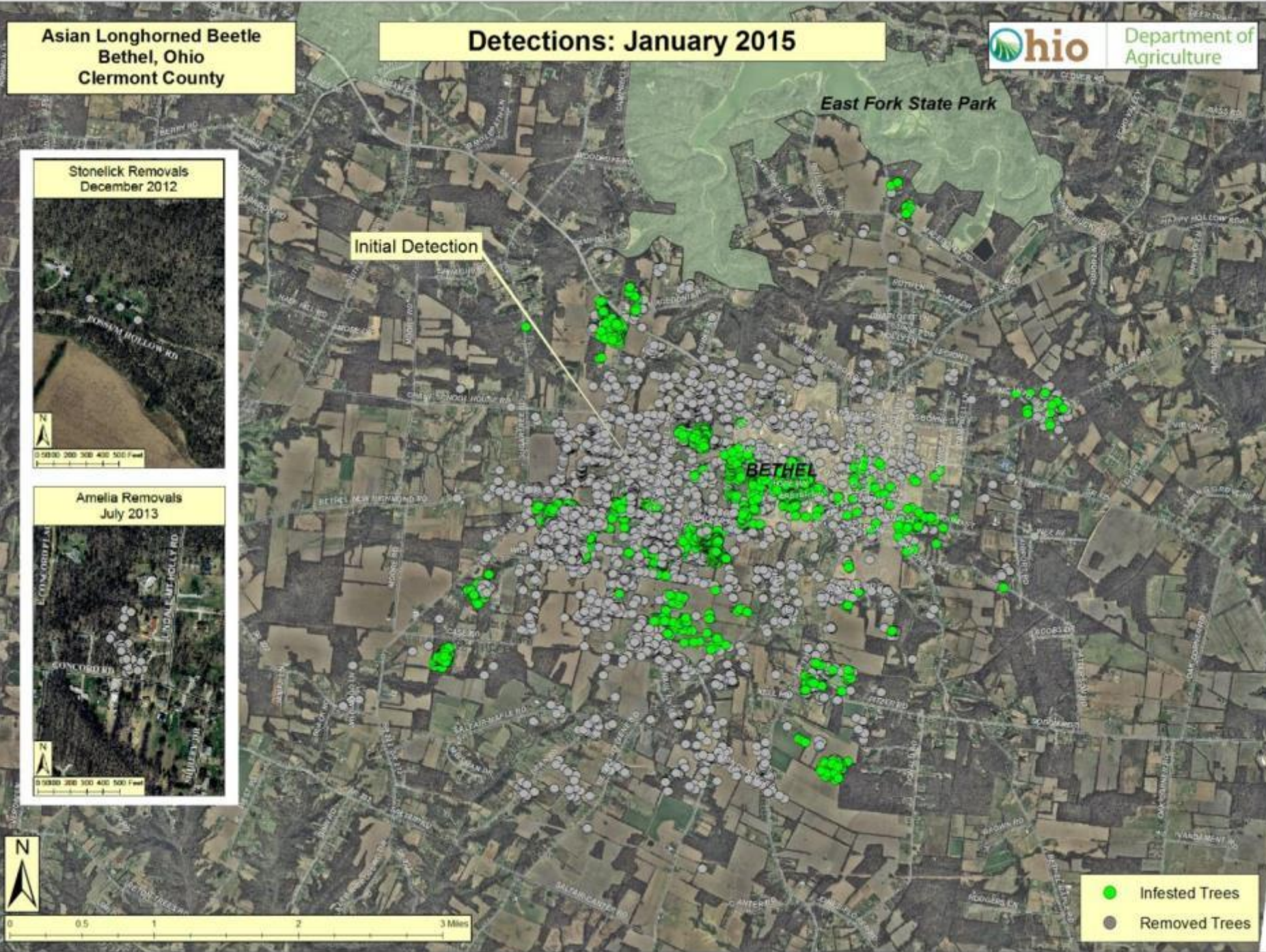


Amelia Removes
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: January 2015



East Fork State Park

Initial Detection

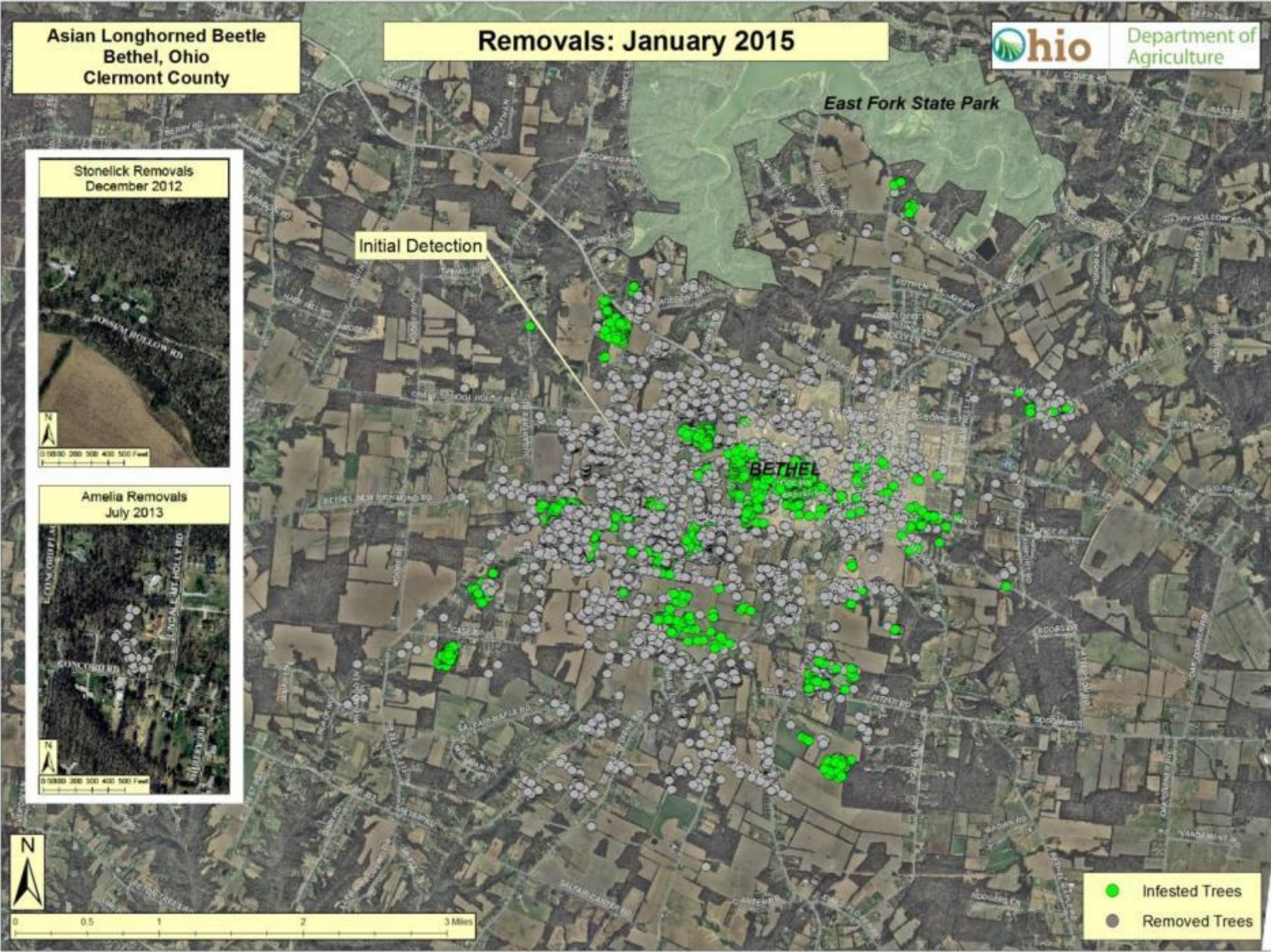
Stonelick Removals
December 2012



Amelia Removals
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: February 2015



East Fork State Park

Initial Detection

Stonelick Removes
December 2012

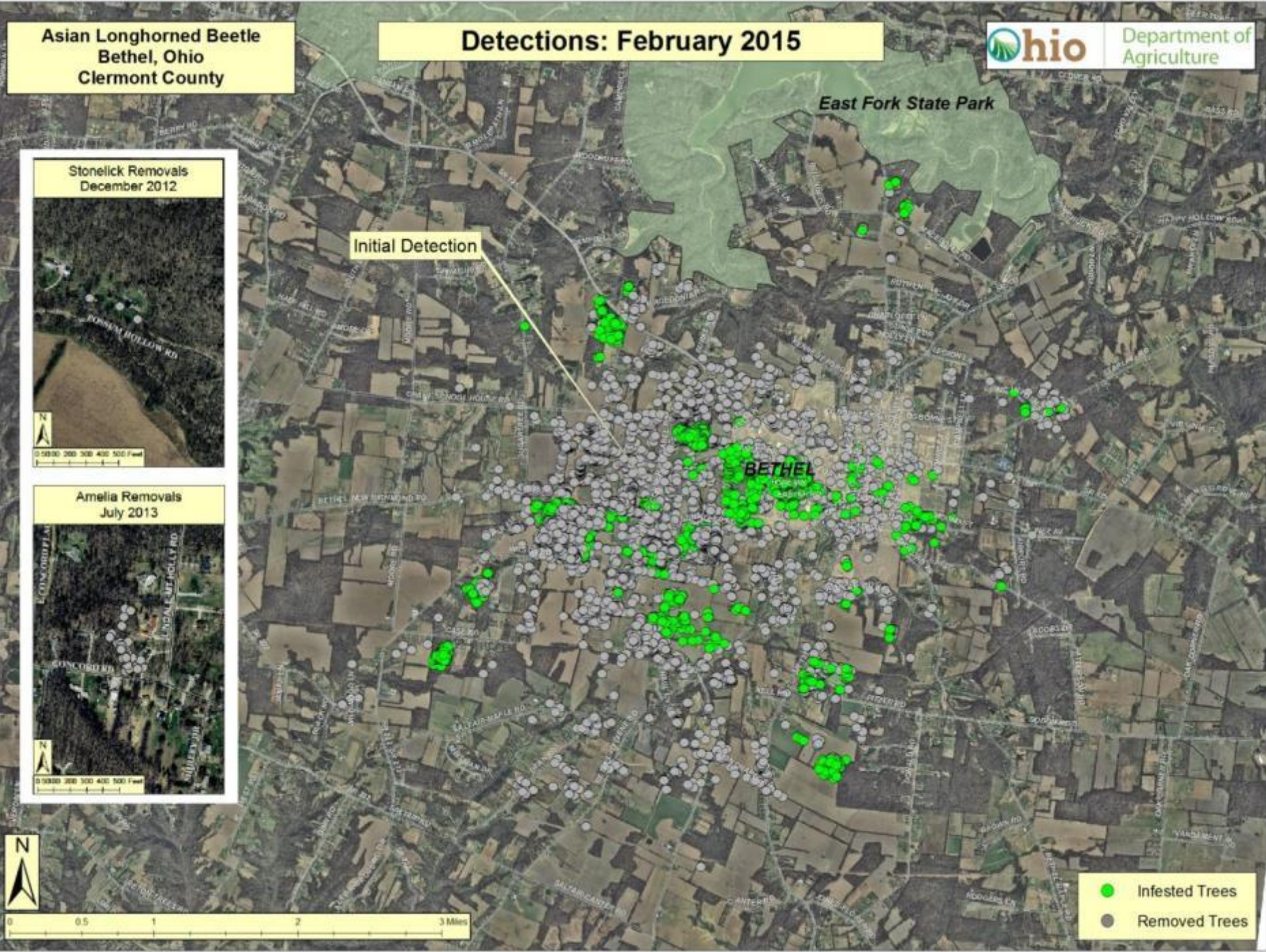


Amelia Removes
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: February 2015



East Fork State Park

Initial Detection

Stonelick Removals
December 2012

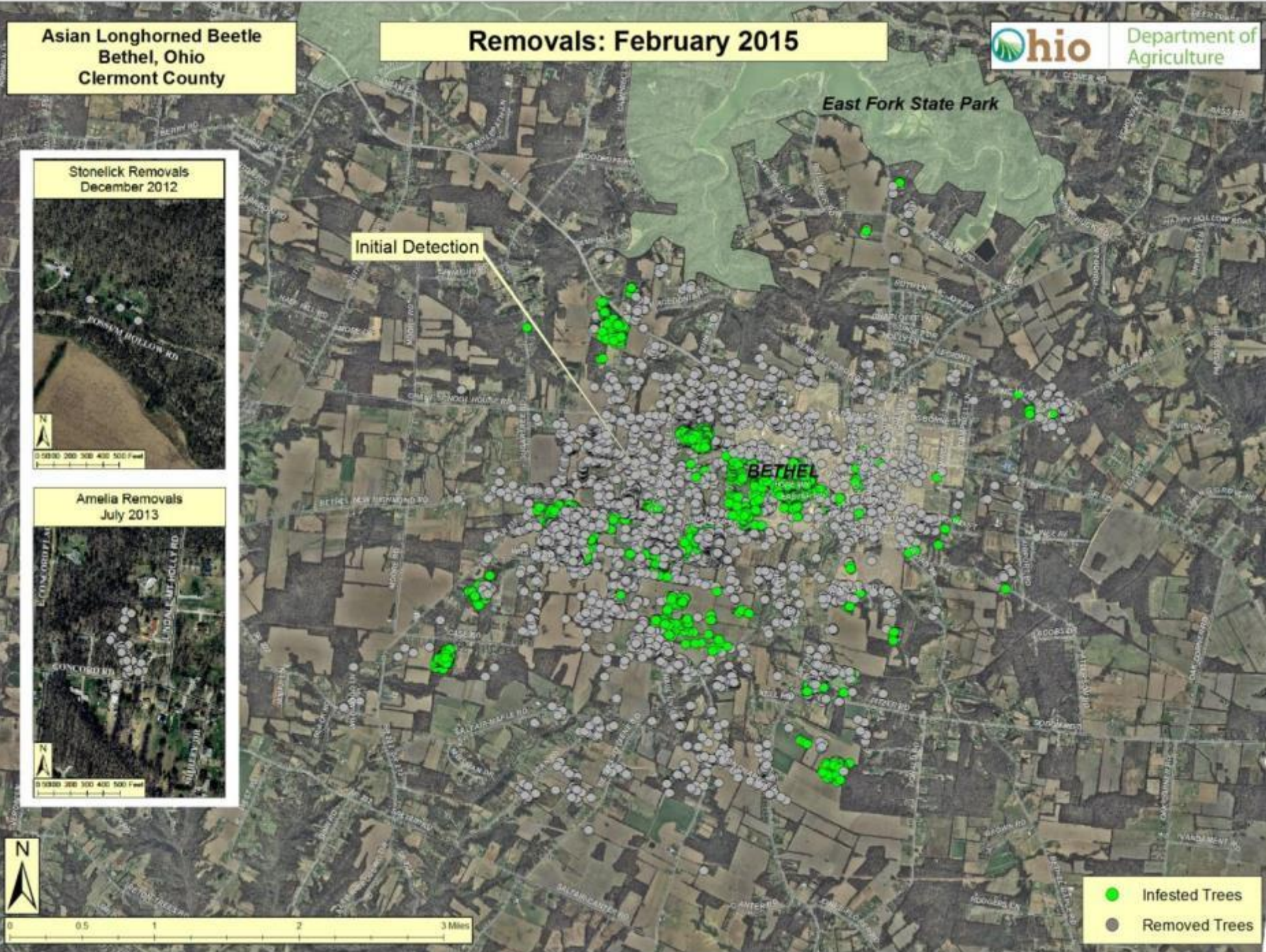


Amelia Removals
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: March 2015



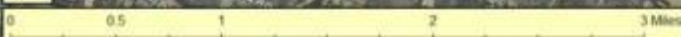
East Fork State Park

Initial Detection

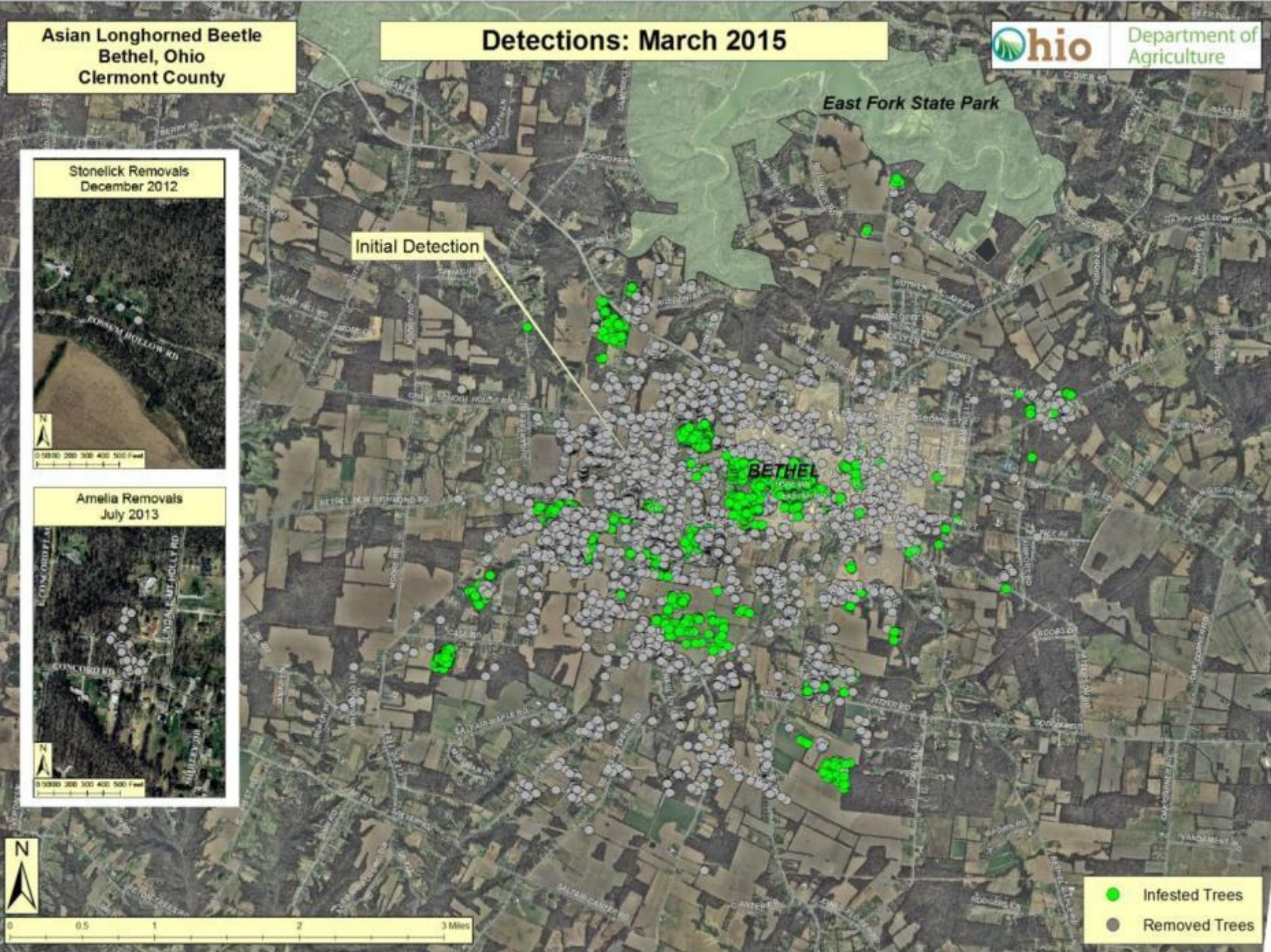
Stonelick Removes
December 2012



Amelia Removes
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: March 2015



East Fork State Park

Initial Detection

Stonelick Removals
December 2012

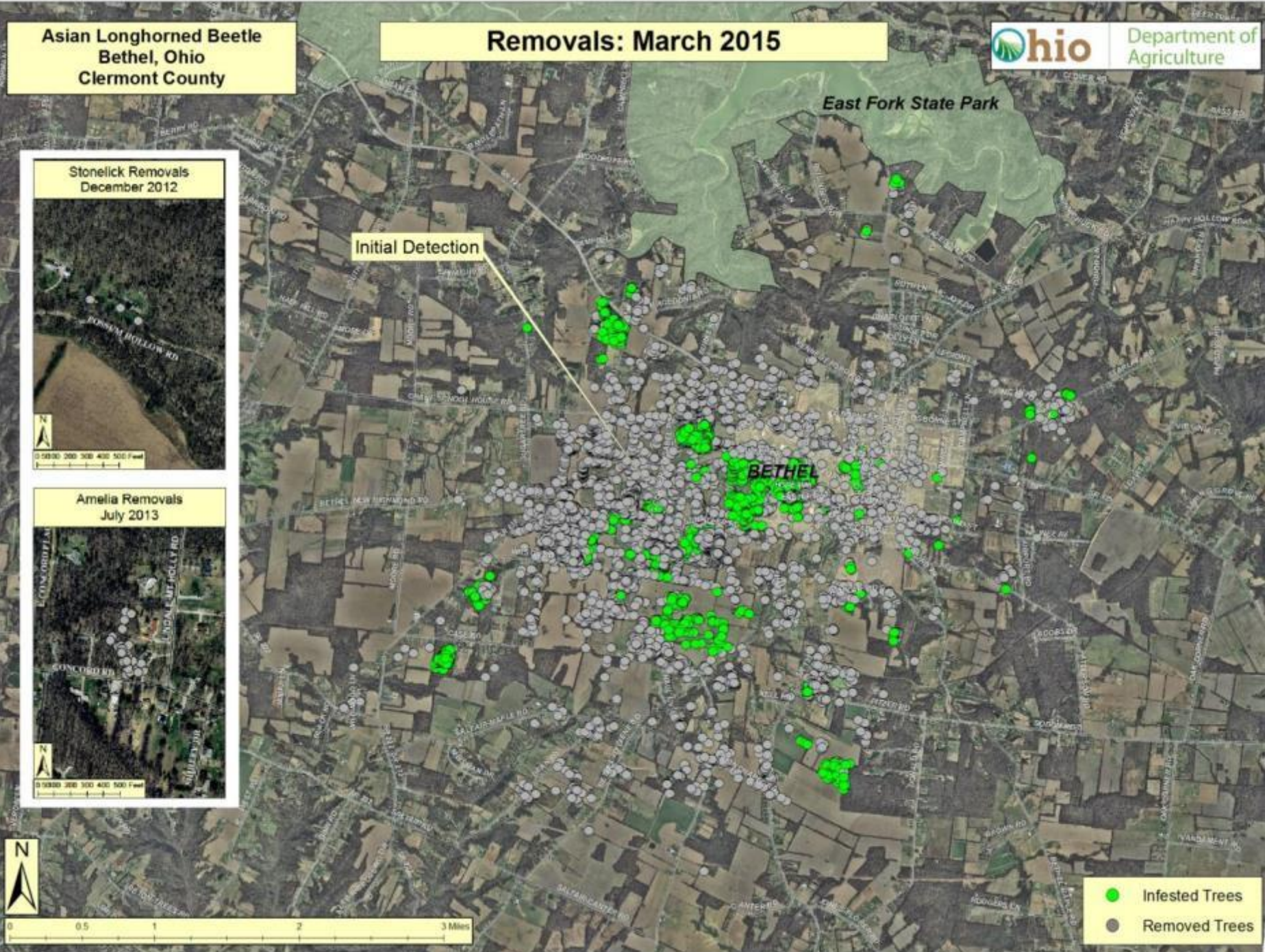


Amelia Removals
July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: April 2015



East Fork State Park

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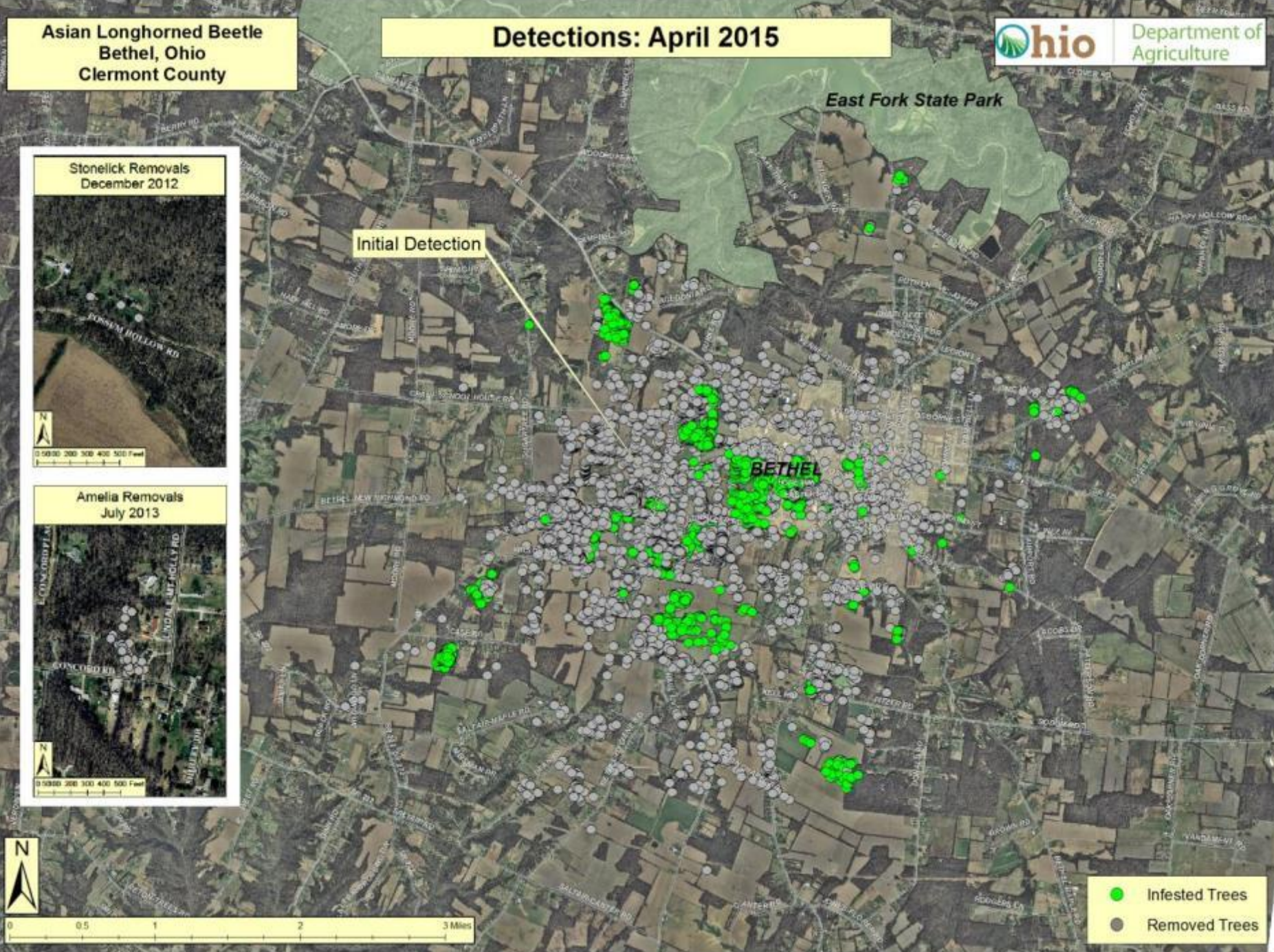


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July 2013



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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: April 2015



East Fork State Park

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December 2012

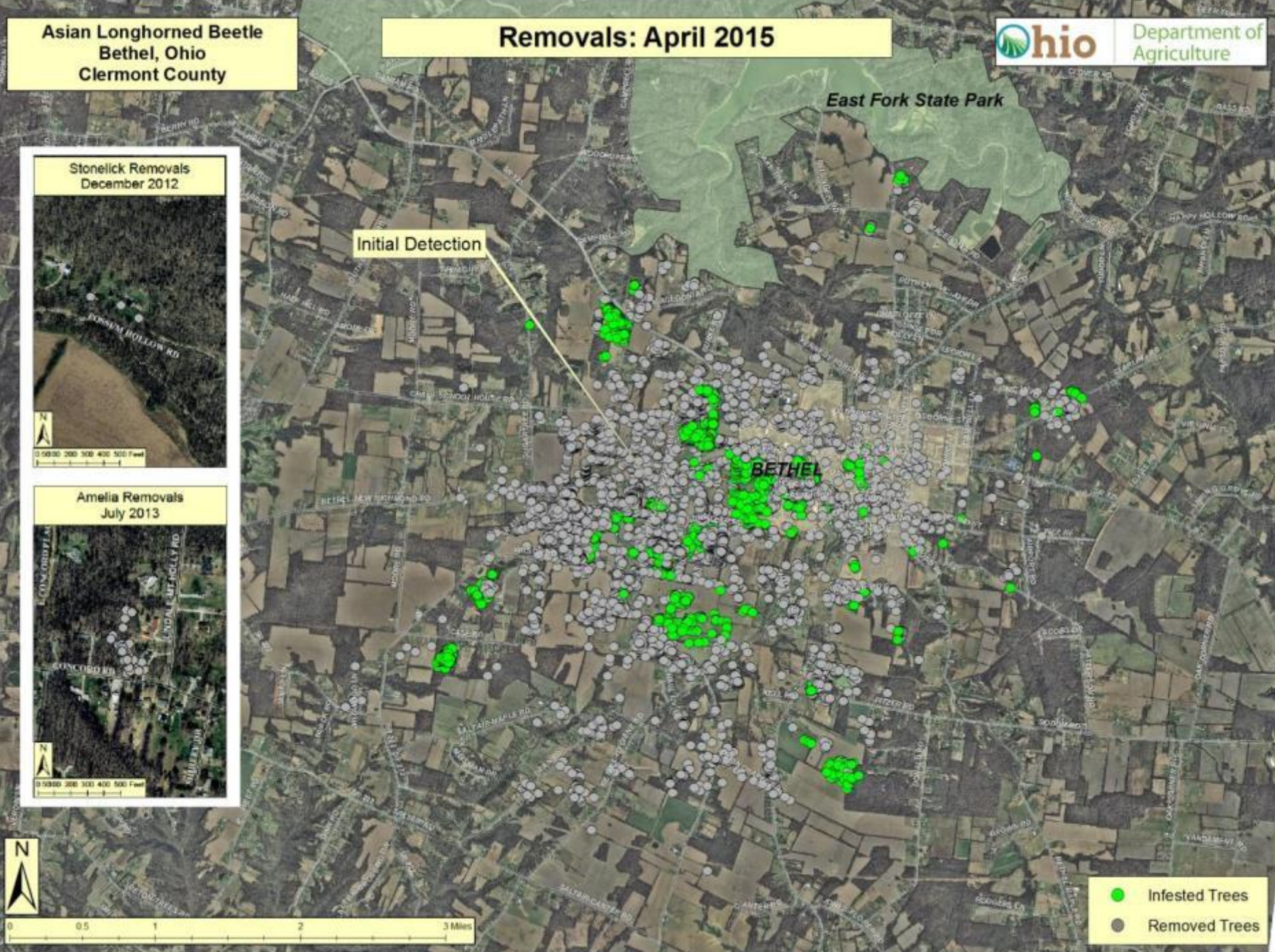


Amelia Removals
July 2013



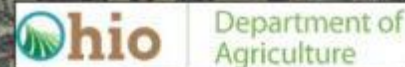
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Detections: May 2015



East Fork State Park

Initial Detection

Stonelick Removes
December 2012

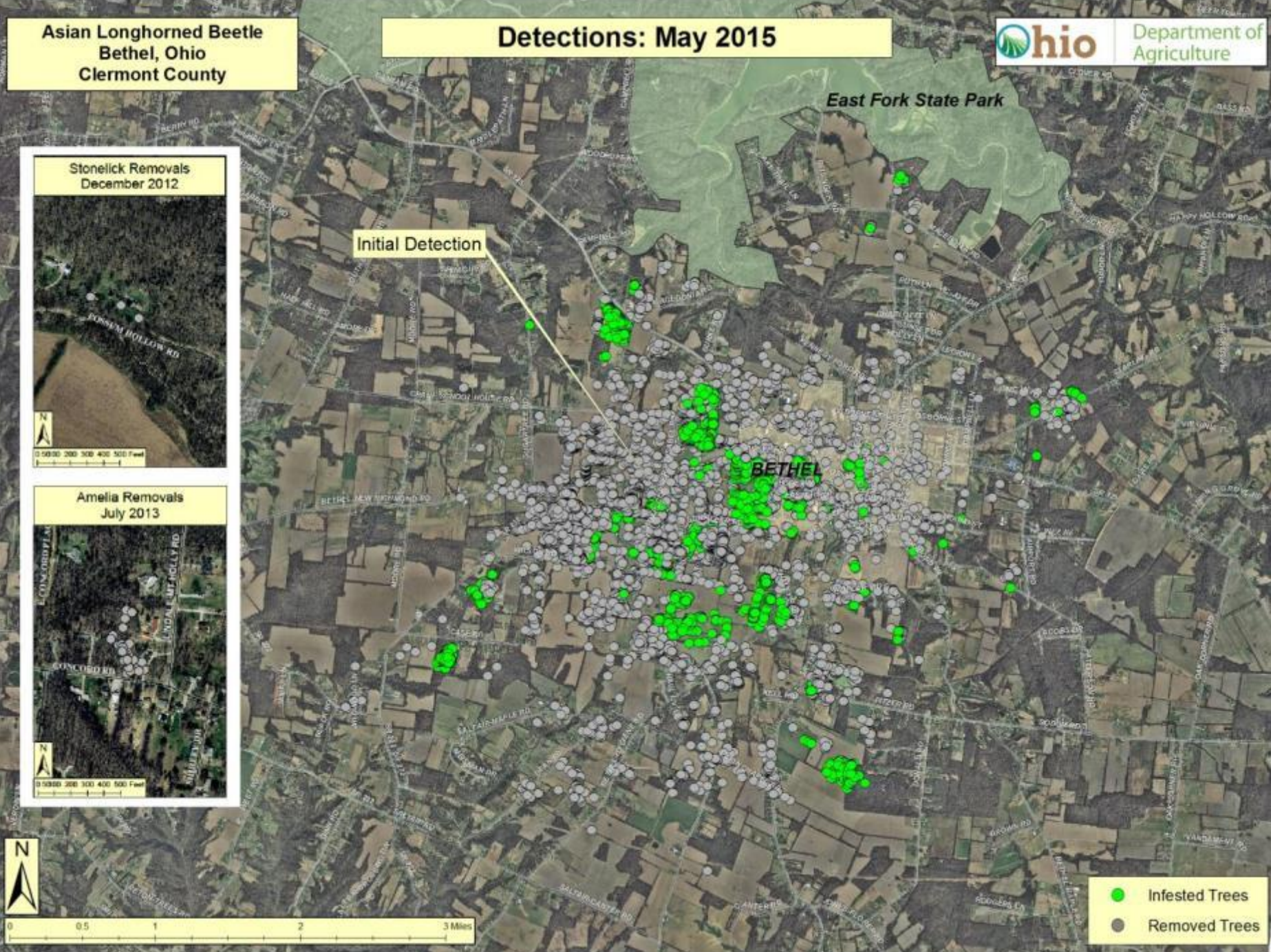


Amelia Removes
July 2013



0 0.5 1 2 3 Miles

- Infested Trees
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Asian Longhorned Beetle
Bethel, Ohio
Clermont County

Removals: May 2015

East Fork State Park

Initial Detection

Stonelick Removals
December 2012

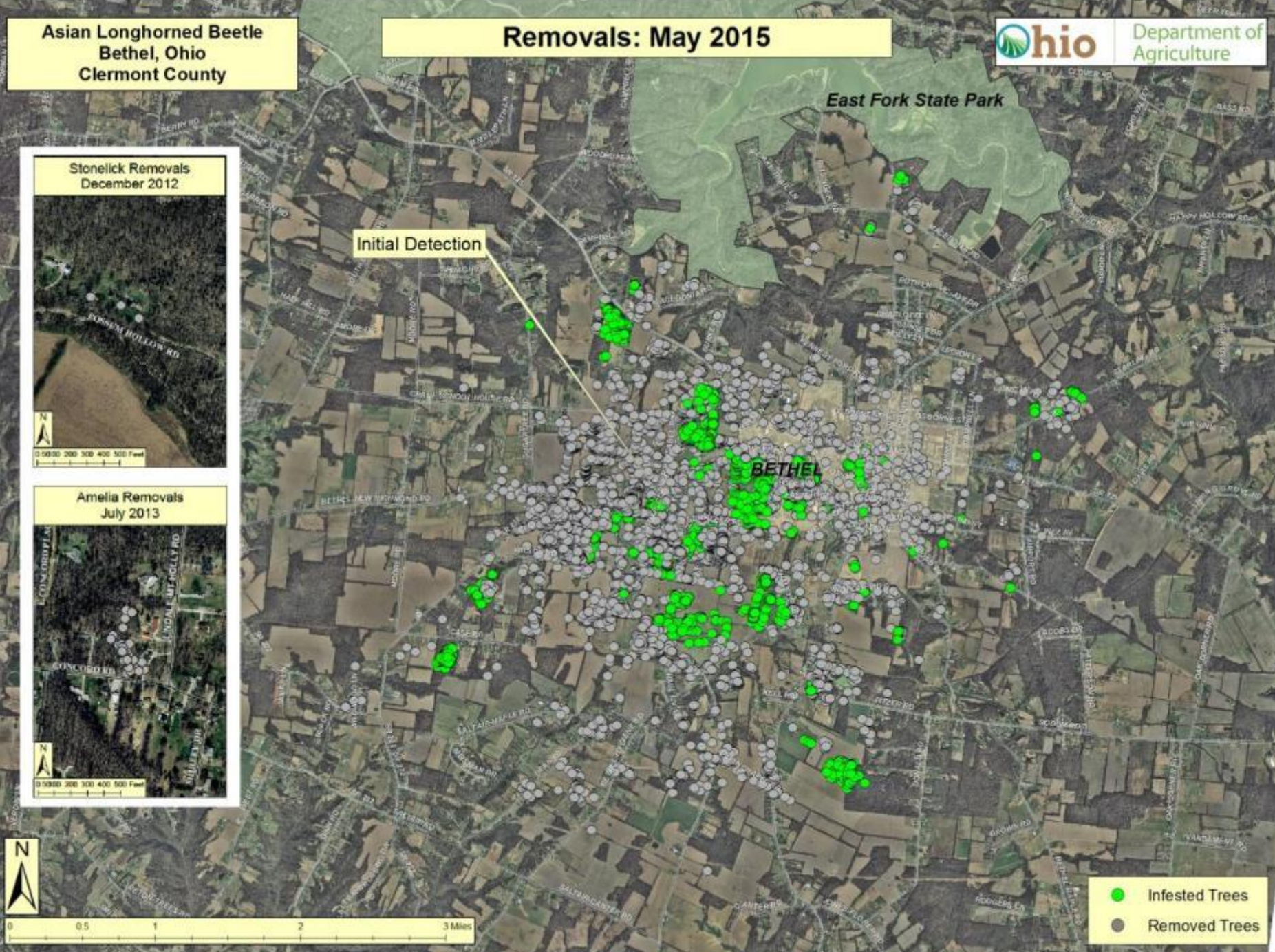


Amelia Removals
July 2013

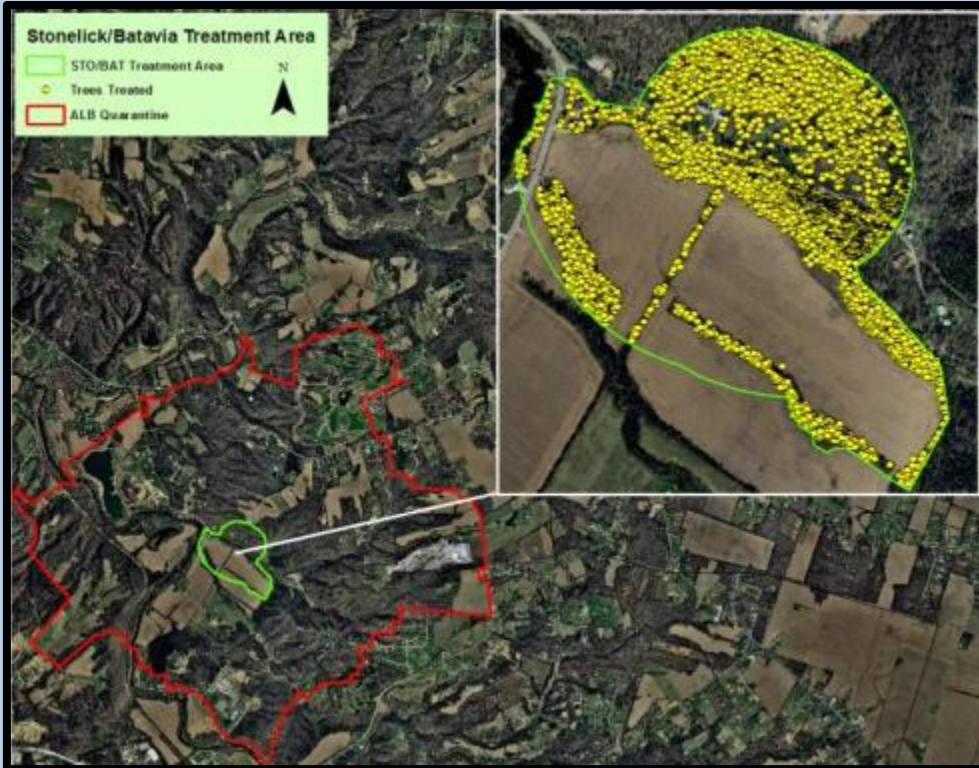


0 0.5 1 2 3 Miles

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Eradication strategy – Chemical treatments

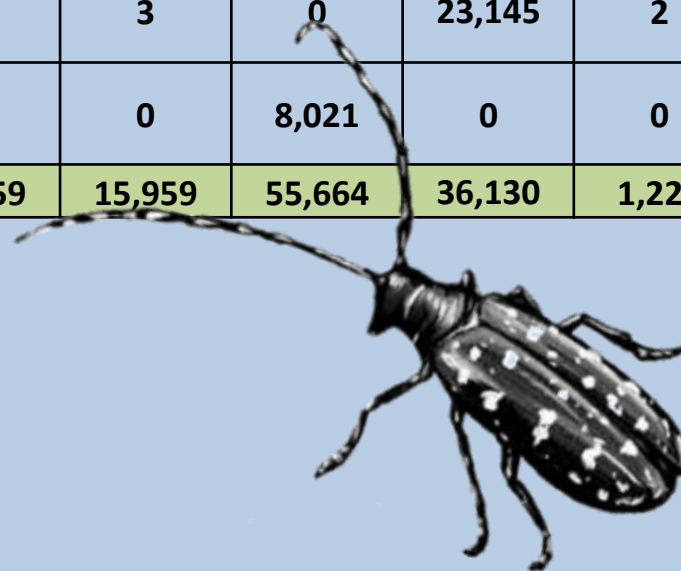


OH ALB Program Numbers

As of 09/05/2015

| | | | Infested Trees | | High-Risk Host Trees | | | |
|-------------------|-----------------------|-------------------|------------------|---------------|----------------------|--------------------|-----------------|--------------|
| Area | First Detection | Surveys Conducted | Detected | Removed | Removed | Chemically Treated | Trees Replanted | |
| Clermont Co. Ohio | Tate Twp | 6/2/2011 | 1,349,255 | 16,809 | 15,909 | 46,505 | 0 | 1,199 |
| | Monroe Twp | 8/24/2011 | 61,245 | 47 | 47 | 1,138 | 12,985 | 28 |
| | Batavia/Stonelick Twp | 7/20/2012 | 81,713 | 3 | 3 | 0 | 23,145 | 2 |
| | Other Areas* | N/A | 111,825 | 0 | 0 | 8,021 | 0 | 0 |
| TOTAL | | | 1,604,038 | 16,859 | 15,959 | 55,664 | 36,130 | 1,229 |

* Includes East Fork Recreational Area



Credits

Individuals:

John Burch, USDA APHIS PPQ SPHD Ohio

Josie Ryan, USDA APHIS PPQ ALB National Operations Manager

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Organizations:

USDA APHIS PPQ

USDA APHIS CPHST

USDA Forest Service

Ohio Department of Agriculture

Ohio State University Extension

Ohio State University Department of Entomology

ODNR, Division of Forestry

Clermont County

USACE



Thank You



<http://hungrypests.com/>

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