



CHARLOTTESM
ENGINEERING & PROPERTY
MANAGEMENT

Fall Cankerworm Infestation in Charlotte

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City Arborist

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Aerial Spray Recommendation for 2015?

- Not at this time
- Based on health of the Tree Canopy
- Health is Good right now
- Continued monitoring of counts and environmental conditions

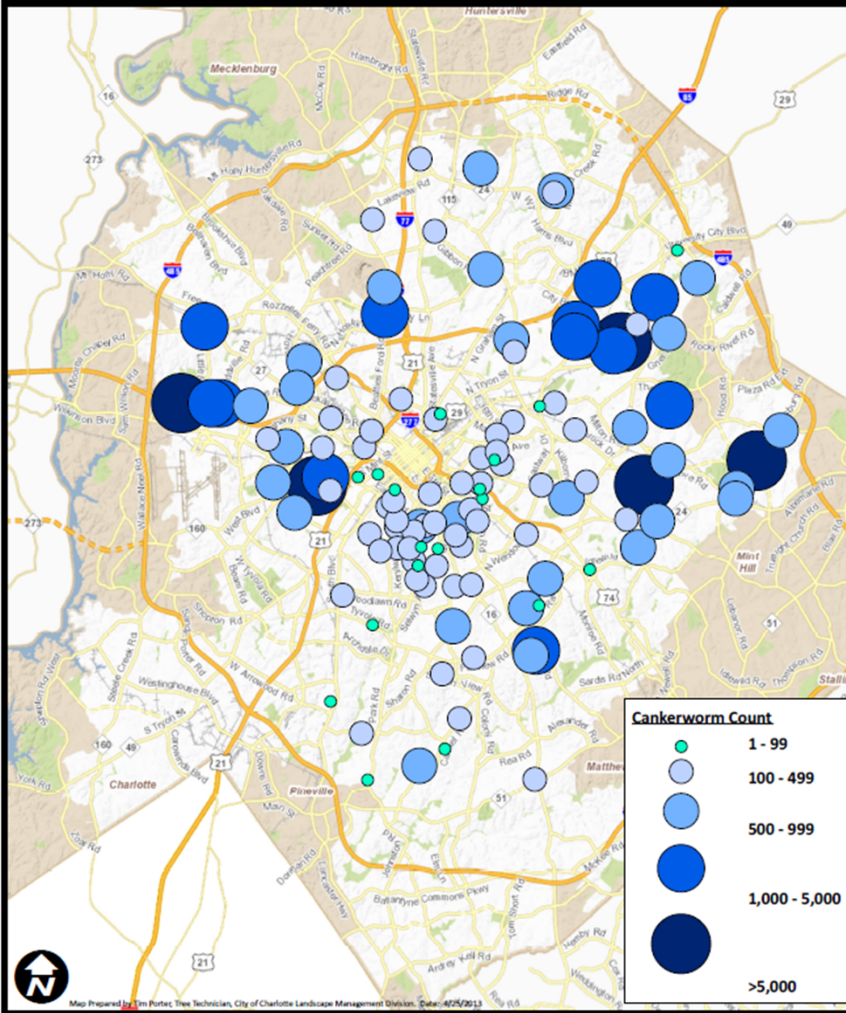




2013 Charlotte Cankerworm Monitoring



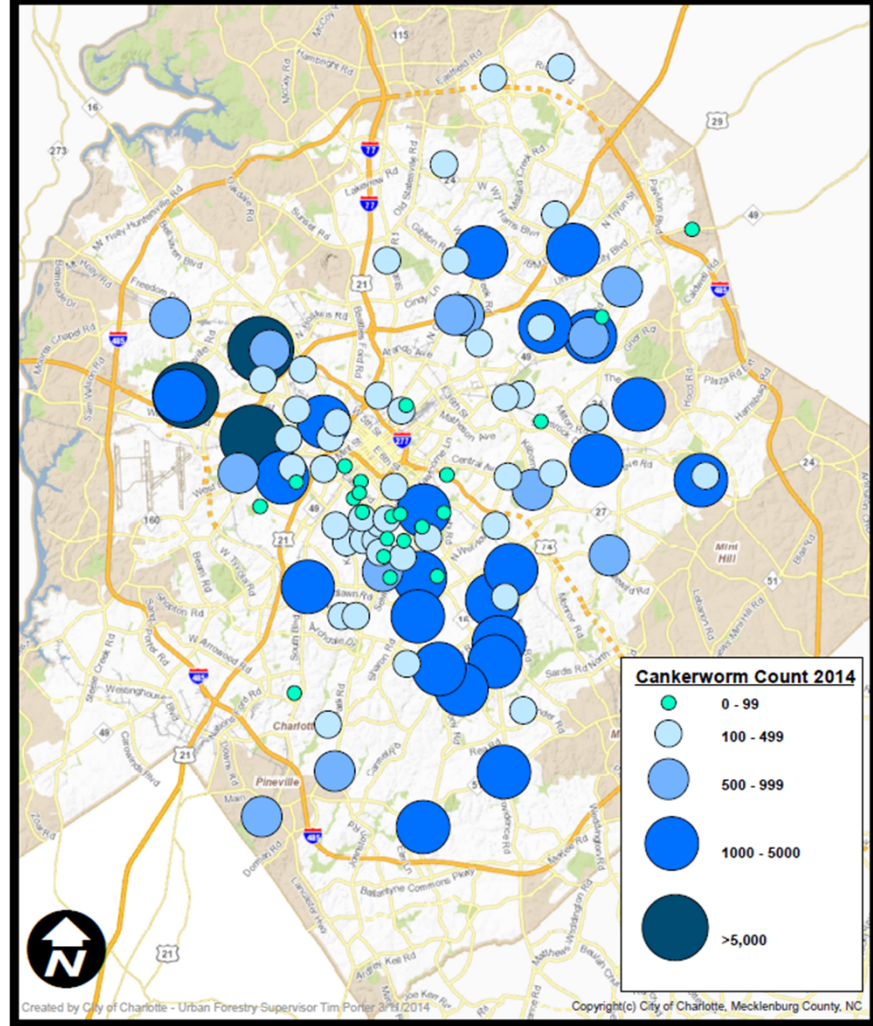
Landscape Management - April 2013



2014 Charlotte Cankerworm Monitoring



Landscape Management - March 2014



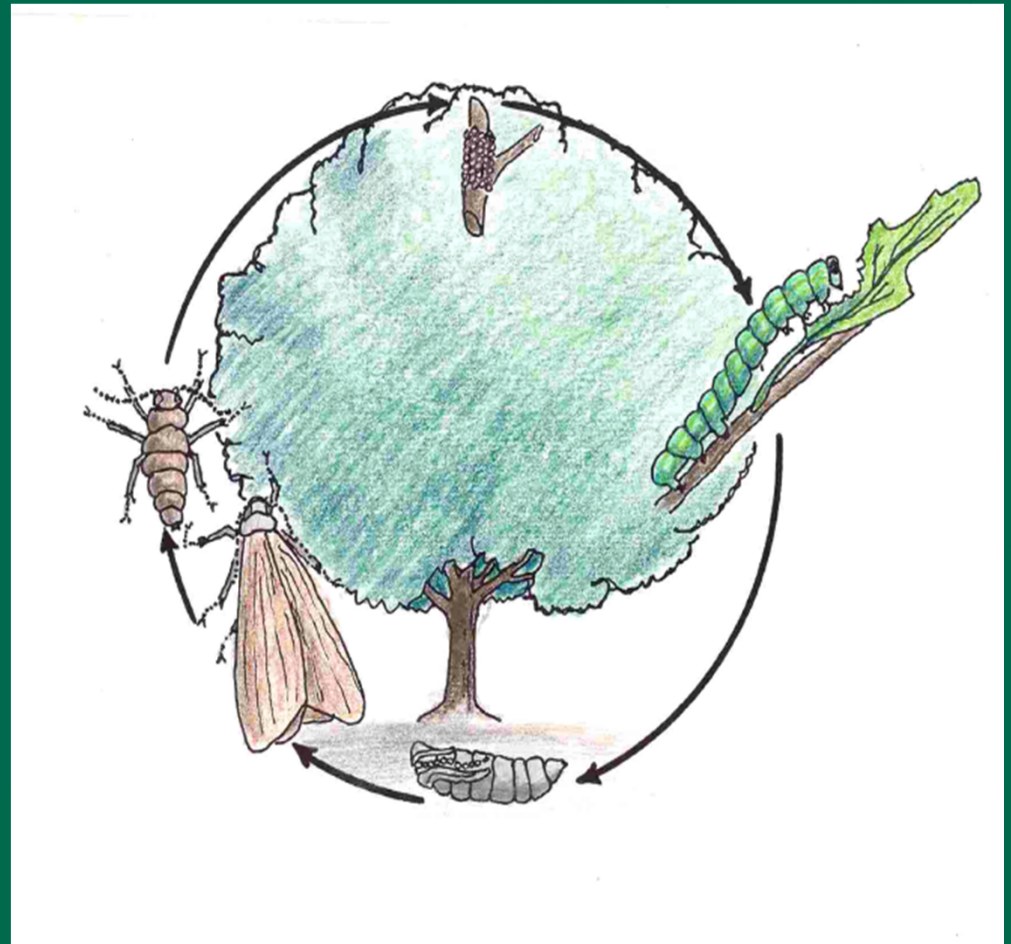
Created by City of Charlotte - Urban Forestry Supervisor Tim Porter 3/31/2014

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Biology of the Fall Cankerworm

- Native insect of Eastern North America from Canada to Texas
- As a native insect and there are natural controls in the environment
- Entomologists do not know why Charlotte's population has stayed so high for 25 years
- 1 Generation per Year





Adult Moth

- Emerges from the ground in late November – early December
- Lives 3 to 4 days
- Male is a tan colored moth
- Female Moth is wingless
- Has to climb trees to lay eggs





Egg Stage

- 100 eggs
- Laid on the uppermost twigs and branches
- Over-winter in this stage (4 months)





Caterpillar

- Hatch in early Spring as buds are swelling
- Can “balloon” to other trees
- Feeding occurs about four weeks
- Drop to ground to go into pupal stage





- Development into adult over 7 months
- Impenetrable covering





- **Trapping**
- **Tree sprays by private arborists**
- **Aerial Sprays**
 - Based on health of the tree canopy
 - Approval of City Manager & City Council
 - Approval of EPA, FAA, N.C. Department of Agriculture
 - Bt (*Bacillus thuringiensis*) is an organic insecticide that only kills leaf feeding caterpillars for 48 hours





Banding as a Control

- **Banding traps the female as she tries to climb the tree**
- **Cultural Control – No Insecticides**
- **Highly effective if widely used and maintained**



Tanglefoot Band

- More trapping material
- Captures the most females
- Least expensive
- Component system
- Vulnerable to Leaves





Bug Barrier Band

- Timing Less Critical
- Less Vulnerable to Leaves
- All-In-One system
- More Expensive
- Squirrel Damage





Aerial Spray in 1992

- 1992
- 1,300 acres sprayed
- Helicopter used
- Cost \$50,000
 - \$38.47/acre





Aerial Sprays

- 1998
- 5,580 acres sprayed twice
- Airplane used
- Cost \$200,000
 - \$17.93/acre





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Aerial Spray in 2008

- 2008
- 67,000 acres Sprayed
- 5 Airplanes Used
- Cost \$1.5 M
- \$23.08/acre





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Tree Health – Marsh Road

**Complete
defoliation**

30 days later





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Tree Health – Tuckaseegee Road

Almost complete
defoliation

30 days later





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Tree Health – Tuckasegee Road

Complete defoliation

30 days later



- Last winter the City banded over 6,000 Willow Oaks in the right of way
- Neighborhood Development helped 7 neighborhoods with \$16,908 in matching grants
- Banding was inconsistent on private property
- Some traps were overwhelmed in heavily infested areas



Why is it important to control Fall Cankerworms?

- Repeated defoliation can jeopardize tree canopy when coupled with drought
- Potential negative environmental and economic impact
- Cost of removal of dying trees is very high



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Questions and Answers

Photo Credits

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Bartlett Tree Research Laboratory
University of Georgia**

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