

Frequently Asked Questions About the Fall Cankerworm

2015

A Fairfax County, VA. Publication.



Why and When - Program Initiation

In the mid 1990's, Fairfax County experienced an ongoing fall cankerworm problem, primarily in the south-east area.

Forestry staff first identified the problem in the spring of 1996 by observing defoliation of numerous trees, and receiving calls from residents who reported defoliated trees on their properties.

During the winter of 1997-98 staff began informally monitoring for fall cankerworm and established cankerworm monitoring stations in the Mount

Vernon area.

Employees of the Forest Pest Program monitor for fall cankerworm by utilizing a U.S. Forest Service recommended method that relies on the use of "sticky bands."

The adult female cankerworm moth is wingless and must crawl up the tree to mate and lay eggs.

Use of the sticky bands prevents the cankerworm from crawling up trees. The number of captured female moths seen on the bands

serves as a predictor of cankerworm populations.

A capture of 90 female moths or greater indicates a large cankerworm population and a good chance of heavy defoliation. The results of the 1997-98 survey indicated a growing cankerworm population.

In the spring of 1998 county staff determined that approximately 500 acres were moderately to severely defoliated.

County officials were alerted to the impending cankerworm problem and took action.

The Goals of the Program

During the winter of 1998-99 a more intensive cankerworm survey was put in to effect. Results indicated a larger infestation. During the previous winter's survey,

approximately five percent of the survey bands produced counts in excess of 100 female moths. The 1998-99 survey results showed that 55 percent of the

bands produced counts of several hundred female moths. Several survey bands producing counts in excess of 1000 female moths. The Mount (continued page 2)

Why and When	1
Monitoring	3
Sticky Bands	4
Alternatives	4
Park Service	5
Bt Impact	5
When to Spray	6

Additional Points of Interest:

Goals	1 - 2
Management	2
Other Work	2
Tree Deaths	3
Staff Time	3
Tree Action Plan	4
Notes	6

Program Goals (continued from page 1)

Vernon area experienced wide spread defoliation during the spring of 1999.

A defoliation survey showed 3,400 acres of moderate defoliation (30 to 60 percent defoliation) and 1,700 acres of severe defoliation (more than 60 percent defoliation).

That year's cankerworm outbreak was featured on local television news and in local and regional newspapers.

Due to public concern and the severity of the 1999 fall cankerworm infestation, the Fairfax County Board of Supervisors tasked the Forest Pest Program (formerly the Gypsy Moth Program) to provide a suppression program for fall cankerworm.

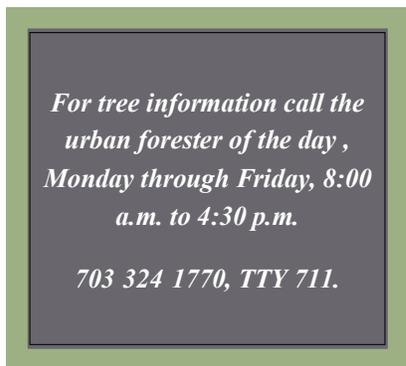
In the spring of 2000 the county conducted its first fall cankerworm aerial suppression program of approximately 6900 acres.

No measurable defoliation was documented in the spring of 2000.

The ultimate goal of the fall cankerworm program is to prevent wide-scale tree defoliation, which may lead to tree decline and mortality.

A secondary benefit of the program is the alleviation of the resulting severe nuisance problems associated with high cankerworm populations in a semi-urban environment.

Program Management



The fall cankerworm program is carried out by the Forest Pest Branch of the Fairfax County Urban Forest Management Division. The cankerworm program, along with others carried out by the Forest Pest Program, is annually approved by the Fairfax County Board of Supervisors.



Other Work by Urban Foresters

The Forest Pest Branch is tasked by the Fairfax County Board of Supervisors to monitor for, provide control of (when necessary and possible) and to provide outreach and education about a number of forest insect pests and diseases.

Any insects or diseases for which the Forest Pest Branch provides services must first be approved by

the Virginia Department of Agriculture and Consumer Services and placed on the list of insects and diseases that can be controlled with funds collected by local service or tax districts. To date, the insects and diseases on this list are gypsy moth, emerald ash borer, asian longhorned beetle, thousand canker disease of walnut trees, hemlock wooly adelgid, sudden oak death,

and fall cankerworm. In addition to these services, the Forest Pest Branch conducts an active outreach/public education program targeting school and civic groups, and the public at large to promote the benefits of healthy trees and forests.

Monitoring the Fall Cankerworm

Fall cankerworm is a hardwood defoliator that is found from Canada to Georgia and west to Colorado.

Adult moths begin emerging from the ground in late November, usually following a hard freeze. The wingless female moth climbs a nearby tree to mate and deposit her eggs.

The fall cankerworm program follows an integrated pest management approach which includes strict monitoring of insect populations prior to

treatment. The most reliable sampling method for estimating cankerworm populations uses the “sticky band” that is recommended by the U.S. Forest Service (see page 1). Beginning in mid-November, urban foresters set up monitoring stations.

Historically, it has been the south-eastern portion of the county that has experienced high cankerworm populations. The trees selected for a survey band are wrapped with a narrow piece of tarpaper and taped to the tree.

A tacky, weather resistant gel called Tanglefoot® is applied to the tarpaper. The gel entraps the female moths as they climb the tree. From December through mid-January, the survey bands are checked weekly and the female moths are counted and removed.

Trap counts of 90 or more per band indicate a high cankerworm population and probable defoliation. Survey bands were placed on 462 trees in Mount Vernon and Lee Districts during the winter of 2014.

Tree Deaths from Cankerworm

Fall cankerworm is an early - season defoliator of hardwood trees. Typically, trees defoliated early in the season will re-leaf by mid-summer and suffer only moderated growth loss.

Successive defoliations combined with other environmental stressors commonly found in an urban/ suburban environment may lead to dieback and eventual death.

Trees weakened by repeated defoliations may be more susceptible to secondary pests. It is difficult to determine how many trees in Fairfax County have died due to cankerworm.

Staff Time Spent on Fall Cankerworms

Monitoring for fall cankerworm takes place in late fall, towards the end of November, and lasts through early January.

Once the survey bands are in place they are monitored once a week.

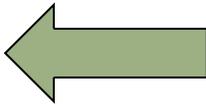
Approximately seven percent of staff time is spent on monitoring for fall cankerworm during the Forest Pest Program’s annual cycle.

If surveys indicate a suppression program is needed for fall

cankerworm, staff time increases considerably. Approximately 15 to 20 percent of staff time can be spent preparing for and conducting a suppression program for fall cankerworm.

The Tree Action Plan

Fairfax County's Tree Action Plan (TAP) is a 20 year strategic plan to conserve and manage the county's urban forests.



Pictured on the left is light insect damage from fall cankerworm.

The TAP does not address any specific forest pests by name, other than to cite two examples of exotic forest pests.

One of the core recommendations of the plan is to use ecosystem management to improve and sustain the health and diversity of the urban forest.

A key strategy to accomplish this goal is to implement a comprehensive and proactive forest pest and invasive species management program.

It is essential that the Forest Pest Program identify forest insect pests and diseases and formulate control strategies to minimize their effects.

Data on the Use of "Sticky Bands"

The United States Forest Service published a paper entitled "Sticky Trap Survey to Predict Fall Cankerworm Defoliation" (J.H Ghent and C.L. Morris). In this paper, predicted defoliation levels are stated based on the number of adult female cankerworms captured per sticky band. Zero

to 45 female moths indicate light defoliation, 46 to 90 indicates moderated defoliation and counts of 91 female moths or greater indicate heavy defoliation is possible. The science behind this article was based on an article in the Journal of Economic Entomology written by J.D. Kegg, titled

"Sampling Techniques for Predicting Fall Cankerworm Defoliation."



A typical sticky band. Fairfax County Photo.

Alternatives to Spraying for Cankerworms

A property owner or resident may 'opt out' of the program and decline to have their property treated. In such cases, urban foresters offer alternative actions.

For more information about alternatives to spraying, call the

Forest Pest Branch at 703-324-5304 or visit www.fairfaxcounty.gov/dpwes/environmental/fallcankerworm/ UFMD staff is reviewing the feasibility of establishing a community-wide cankerworm banding program, which may be

useful in protecting individual landscape trees.

This is not an efficient method of control in forested or forested-residential situations as the bands serve primarily as a population monitoring tool.

The National Park Service (NPS)

The objective of the county's cankerworm suppression program is to prevent defoliation of trees on residential, county and regional parkland.

As a general rule NPS does not permit management of a native pest on their lands. However, NPS does allow for management of native species when a species interferes with management objectives or presents a threat to human health.

When necessary, NPS sprays for fall cankerworm and recommends Bt (*Bacillus thuringiensis*)* which is the same material used by the county.

The management objectives of Fairfax County's cankerworm program targets primarily residential properties.

This differs greatly from the management objectives of NPS.

Fairfax County recognizes and respects these management differences and therefore has not approached the NPS to participate in an aerial spray program targeting fall cankerworm on National Park Service land that lies within the borders Fairfax County.

**Rapid Response to Insect and Disease and Abiotic Impacts 2010"*

The Impact of Bt on Non-Targeted Insects

All pesticides must go through an exhaustive review process conducted by the U.S. Environmental Protection Agency (EPA) before they are registered for use in the United States. As part of the review, the impacts that a pesticide may have on humans and non-target organisms is examined thoroughly. In addition, Bt has been extensively studied for use in forested and residential forested areas primarily as it pertains to the control of the gypsy moth caterpillar. Below are links to Bt studies as it pertains to non-target organisms:

- http://www.bt.ucsd.edu/bt_history.html
- <http://www.fs.fed.us/foresthealth/technology/pdfs/btmanage.pdf>
- http://www.fs.fed.us/foresthealth/technology/pdfs/BtkNontargetStudy_v7.pdf
- http://na.fs.fed.us/pubs/misc/seis/gm_ineviro_n_impact_statemnt_draft.pdf
- <http://www.jstor.org/discover/10.2307/3061151?uid=3739936&uid=2&uid=4&uid=3739256&sid=21104665909203>



The Fall Cankerworm

Notes:

- Fall cankerworms feed on a wide range of hardwoods, favoring maples, ash, oaks, hickories, beech and cherries. All of these are found in abundance in the Mount Vernon area of Fairfax County.
- Arlington County, has not sprayed for cankerworm as it has not been necessary. According to Arlington County Urban Foresters, although they face many threats to their urban forests, they have not witnessed the cankerworm outbreaks that have been experienced in Fairfax County.
- Trees that suffer early season defoliation frequently grow a second flush of leaves by mid-summer. Trees tolerate the defoliation and re-foliation cycle fairly well. However, trees found in the urban/suburban setting are enduring many environmental stress factors such as compacted soil, limited root zone, air pollution and drought. These trees tend not to recover from the additional stress of defoliation. Successive defoliations can weaken the tree which can lead to dieback and eventual mortality. In addition, weakened trees are more vulnerable to secondary pests, such as borers and various diseases.



The Fall Cankerworm

When and Where to Spray

High cankerworm populations in residential areas can be a nuisance, but this is not a factor in determining where and when to spray. The number of female moths captured during monitoring is the determining factor.

The primary goal of the suppression program is to lower the pest population to prevent defoliation.

The Forest Pest Program follows guidelines set forth in the Virginia Department of Agriculture and Consumer Services (VDACS), “Virginia Cooperative Gypsy Moth Suppression Program Guidelines for Participation.” Although

VDACS does not participate in Fairfax County’s suppression program for cankerworm, the guidelines set forth are applicable for the purpose of cankerworm suppression.

For an area to qualify for aerial suppression, the trees in the treatment area must be at least 25 feet in height and 50 percent or more of the surface area must be covered by the tree crowns of moderately or highly susceptible hardwood species.

To be considered for aerial treatment, an area must contain at least ten contiguous acres. If fewer

than ten acres require treatment, a truck with hydraulic spray equipment is used.

The cankerworm suppression program is voluntary.

To be removed from the spray area contact the urban foresters at 703-324-1770, TTY 711 or PestMail@FairfaxCounty.gov or write to UFMD, 12055 Government Center Parkway, Fairfax, VA 22035.

A 200 foot buffer area is established around the “no spray” property to further prevent that property from receiving the spray .