

Integrated Pest Management Program

Lines of Business

LOB #292:

FOREST PEST PROGRAM

Purpose

The Fairfax County Forest Integrated Pest Management Program identifies forest insects and diseases within the county that have the potential to cause tree defoliation and tree mortality. Once identified, the Forest Integrated Pest Management Program develops an appropriate management plan to minimize the impacts of the insects or diseases on the county's urban forest resources. The program monitors for various forest insects and diseases as approved by the Virginia Department of Agriculture and Consumer Services. The program is effective because staff has the technical knowledge to manage the forest threats in the most environmentally sound manner as possible, including the spot treatment of outbreak populations of gypsy moth and fall cankerworm caterpillars. During outbreak phases of gypsy moth and fall cankerworm, infestations can be extensive. A government program can treat these large infestations at a cheaper cost than individual homeowners due to economies of scale while using only the most environmentally sound insecticides available. All citizens and businesses in Fairfax County benefit from this program since public and private lands throughout the county are monitored for forest insects and diseases and appropriate management plans are developed as needed. Through citizen outreach and education, organizations, businesses and individual citizens are educated as to the importance of maintaining a healthy urban forest.

Description

In the early 1980s, the Board of Supervisors (BOS) directed urban forest management staff to address the emerging issue of the gypsy moth caterpillar. The mission of this program was to reduce gypsy moth populations to below defoliating levels and to minimize the environmental and economic impacts of the pest by limiting the amount of tree mortality and use of pesticides in the environment. Other forest insects and diseases have emerged and have been added the program's mission since its inception.

The Forest Pest Program monitors and or manages forest insect pests and diseases as approved by the Virginia Department of Agriculture and Consumer Services.

- Gypsy moth
- Fall cankerworm
- Emerald ash borer
- Hemlock wooly adelgid
- Thousand cankers disease of walnut
- Asian longhorned beetle
- Sudden oak death

The Forest Pest Program provides outreach and education on forest health to:

- School aged children
- Professional education targeting industry and other natural resource professionals
- Civic groups
- County residents

Integrated Pest Management Program

The Forest Pest Program follows the principles of Integrated Pest Management (IPM) and includes:

- An ecological, cost effective approach to pest control
- A desired goal of reducing pest populations to acceptable levels
- Methods that are practical and environmentally sound

The Forest Pest Program provides monitoring and control activities for Forest pests and are:

- Conducted annually to determine pest population levels
- Critical in developing management strategies
- Are based on federal, state and scientific guidance
- The basis for the annual submission to the Fairfax County Board of Supervisors

This LOB is performed with 5/5.0 FTE positions including 1/1.0 FTE Urban Forester III and 4/4.0 FTE Urban Foresters II.

A countywide tax levy financially supports Fund 40080 activities and this levy is subject to change annually due to funding requirements based on the level of infestation. Since FY 2001, the Board of Supervisors-approved tax rate has been \$0.001 per \$100 assessed value and has provided support for both the Forest Pest and the Disease-Carrying Insects Programs.

Benefits

The results of a Forest Pest Program provide multiple benefits to the environment and to the residents of Fairfax County. A healthy urban tree canopy is essential to a healthy ecosystem.

Environmental benefits of a healthy urban forest system include:

- The removal of atmospheric pollutants
- The improvement of water quality
- The prevention of soil erosion and stormwater runoff
- The preservation of native tree species
- Providing habitat for wildlife
- Maintaining a high quality of life for county residents
- Reducing the amount of harmful pesticides used by homeowners

As a branch in the Urban Forest Management Division (UFMD) the Forest Pest Program is aligned with the mission of Stormwater Services as it strives to improve water quality and stormwater management through tree conservation. Tree canopy and forest soils contribute significant levels of water pollution and stormwater runoff mitigation services. Recent analysis has estimated that the County would need to invest \$1.9 billion dollars in infrastructure to match the level of stormwater management that is provided by its tree canopy during a ten-year storm event.

UFMD works directly with other Stormwater Services programs to incorporate urban forest management into regulatory requirements and processes such as Total Maximum Daily Load (TMDL) water quality planning and the Municipal Separate Storm Sewer System permit process.

Integrated Pest Management Program

The UFMD, including the Forest Pest Management Branch, Practices Environmental Stewardship by protecting and encourages the protection of the urban forest and other natural resources of the county, the county's green infrastructure, in order to maximize the environmental, economic and social benefits of these resources, including water quality and quantity management. This is accomplished through partnerships with the development industry, nonprofits, and other county and state agencies; public education; and direct management of urban forest resources, including the monitoring and limited suppression of forest pests.

The Forest Pest Program is responsible for residential, commercial and publically owned land within the County. All citizens benefit from this program since parks and common areas are monitored and maintained. The program relates to the County vision elements by protecting our natural resources, providing a service that is economically sound, and encourages the protection of our natural resources.

Mandates

This Line of Business is not mandated.

Trends and Challenges

Forest insect and disease trends are very difficult to predict in the long term. All insects and many diseases exhibit population cycles. Populations will be high for a period of years, then drop for a period, only to rise again. For example, in the early to mid-1990s, annual treatment requirements for the gypsy moth fluctuated from 3,000 to 45,000 acres. This fluctuation was due to the normal population cycle of the insect and not the control provided by the program. The goal of the program is to suppress the negative effects of the insects and diseases such as defoliation and mortality.

This program was initiated in response the gypsy moth caterpillar. Over time new insects have been added to the program's mission and include:

- Fall Cankerworm which is a native insect that prefers many tree species in the County. Populations for this pest are cyclic and require annual monitoring.
- Emerald ash borer which is an insect introduced from Asia and feeds on all ash (*Fraxinus* spp.). Ash trees are quickly disappearing from the Fairfax County landscape. This insect is lethal to ash trees. Staff has developed a treatment program for county owned trees and an outreach program for homeowners for privately owned trees. Large scale treatment of wild ash stands is not possible for this insect.
- Asian longhorned beetle which is an insect introduced from Asia and feeds on many tree species. This insect is not known to be present in Fairfax County however is has potential to cause serious environmental and economic effects should it be found here. Staff will continue to monitor for this pest and be prepared to act quickly should it be found.
- Hemlock woolly adelgid which is an insect introduced from Asia and feeds on eastern hemlock. Staff monitors native hemlock stands and provides control for this pest when necessary.
- 1000 cankers disease of walnut which is an insect (and a diseased it carries) introduced from the western United States and feeds on walnut trees. This insect has been found to cause walnut mortality in other parts of the United States. Staff has confirmed that his insect is present in the County and is monitoring walnut health.
- Sudden oak death is a disease found in the western USA and has caused widespread oak mortality where is known to exist. Staff is assisting the Virginia Department of Agriculture and Consumer Services in monitoring for this disease and is prepared to act if need be.

It is impossible to predict if and when new insects and diseased will become a problem for the trees of Fairfax County. Diligent monitoring and cooperation with State and Federal agencies is critical in maintaining the natural ecosystem of the County.

Integrated Pest Management Program

Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
LOB #292: Forest Pest Program			
FUNDING			
<u>Expenditures:</u>			
Compensation	\$490,006	\$481,316	\$475,246
Benefits	196,367	208,687	154,963
Operating Expenses	146,807	119,220	499,405
Total Expenditures	\$833,180	\$809,223	\$1,129,614
<u>Transfers Out:</u>			
Transfer Out to General Fund	\$65,039	\$65,039	\$66,453
Total Transfers Out	\$65,039	\$65,039	\$66,453
Total Revenue	\$889,941	\$890,476	\$824,187
POSITIONS			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	7 / 7	6 / 6	6 / 6
Total Positions	7 / 7	6 / 6	6 / 6

Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Percent of forest defoliated	1%	1%	< 1%	< 1%	< 1%

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The goal of the Forest Pest Program is to suppress the negative effects of insects and diseases such as defoliation. The only true measure of the effectiveness of this program is the amount of defoliation in a particular year. Ideally defoliation should be kept to below 1 percent of the County's total canopy (staff estimates that 53 percent of the County is currently canopy covered).

