

*City of Alexandria, Virginia*

MEMORANDUM

DATE: FEBRUARY 22, 2007

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: JAMES HARTMANN, CITY MANAGER 

SUBJECT: CITY COUNCIL CONSIDERATION OF THE GYPSY MOTH SUPPRESSION PROGRAM FOR SPRING 2007

**ISSUE:** City Council consideration of the Gypsy Moth Suppression Program for spring 2007.

**RECOMMENDATION:** That the City Council approves the 2007 gypsy moth suppression program as recommended by staff with the following components:

1. Two aerial applications of "Gypchek" (subject to availability) over one spray block of approximately 75 acres that includes 319 properties located in the Beverley Hills community bounded by South Overlook Drive on the north, Old Dominion Boulevard on the east, Allison Street on the south and Wellington Road on the west (Attachment 1) in cooperation with the Virginia Department of Agriculture and Consumer Services (VDACS). The first application will be made on or about the 1st of May. The second application will be made three to five days later.
2. In the event that the United States Forest Service is unable to provide "Gypchek" to the State for Alexandria's spray program, one aerial application of Bacillus thuringiensis (Bt) will be made over the proposed 75 acre spray block.
3. Declaration that the aerial and ground spray programs are to be voluntary, that a 200-foot buffer zone will be maintained around the property of any resident or property owner objecting to the aerial application over their residence or property.
4. Notification of all residents and property owners within the proposed spray block and buffer area, and holding an open house to provide the public an opportunity to gather information and ask staff questions about the program.
5. Voluntary ground spray application of Bacillus thuringiensis (Bt) for susceptible tree species located on properties within the 200-foot buffer zone created by an objecting property.

6. Authorization for the City Manager to enter into an agreement with a private contractor for the ground spray application of Bt and execute all required paperwork related to the gypsy moth suppression program.
7. Implementation of other gypsy moth suppression measures to include the distribution of burlap for banding trees and educational materials in cooperation with VDACS.

**BACKGROUND:** Alexandria's gypsy moth suppression program began in 1988 with the spraying of 1,200 acres throughout the City. The suppression program was most intensive in 1989 when 1,800 acres were sprayed. Subsequently, spray areas varied from 400 acres in 1990 to 200 acres in 1991, 100 acres in 1992, 96 acres in 1993, 57 acres in 1994 and 44 acres in 1995. In 1998 two trees on the public right-of-way were treated by ground application. The steady reduction of the gypsy moth population during the past several years has been attributed to the development of beneficial fungal and viral diseases, as well as insect parasites that were able to suppress the growth of the population. The development and effectiveness of these naturally occurring controls is heavily dependent upon favorable environmental factors including temperature, and rainfall during critical periods of the gypsy moths development.

The egg mass survey conducted in the fall of 2001 identified two potential spray blocks consisting of 46 acres in the Seminary Valley area and 50 acres surrounding the Virginia Theological Seminary, however; the program was cancelled due to flight restrictions imposed by Federal Aviation Administration and Homeland Security for security reasons following September 11th 2001. The Transportation Security Administration (TSA) still maintains a 5-mile "Flight Restriction Zone" around Ronald Reagan National Airport and as a result, Alexandria will require a waiver from the TSA to spray within the restricted zone, in order to proceed with the aerial treatment.

A resurgence of the gypsy moth population has occurred throughout Northern Virginia; Fairfax County has reported that they propose to spray approximately 4,220 acres and Prince William County has reported that they propose to spray more than 5,000 acres in the spring of 2007.

In November 2006, City staff submitted a proposal to VDACS to participate in the 2007 Virginia Cooperative Gypsy Moth Suppression Program. The State requires that the spray block have a minimum of 250 egg masses per acre, the presence of primary and secondary host tree species, and the potential for additional infestation from adjacent communities (i.e. caterpillars being wind borne into the City from Arlington and Fairfax Counties). The City's proposed suppression Program meets these requirements, qualifying the City to participate in the program and receive federal funding for a portion of the program.

In the winter of 2006, City staff will submit a request the USDA Forest Service, Forest Health Protection to present a waiver request to fly inside the DC flight restriction zone. The waiver request requires specific information about the aircraft used, and the pilot, crew, and passengers.

The Transportation Security Administration will review the request and will approve or deny the request in spring 2007 when the State signs a contract with a qualified aerial applicator company. On December 12, 2006, staff brought forward for consideration by City Council a recommendation for the 2007 Gypsy Moth Suppression Program that included a single aerial application of Bt over a 75 acre block of the Beverly Hills community. Council scheduled the proposed program for public hearing and consideration on January 20, 2007, and asked staff to provide additional information on what effect Bt might have on birds within the spray block.

An open house was held at the Charles Barrett Recreation Center on January 16 from 7:00 p.m. until 9:00 p.m. to provide residents and property owners with information about the proposed gypsy moth suppression program. All residences and property owners within the spray block and the surrounding buffer area were notified by mail. Only one resident attended the open house.

On January 20, 2007, staff presented information to City Council indicating that there was no evidence that Bt had any direct effects on birds but that there was evidence that food resources for birds within the spray block could be reduced as a result of non-target caterpillars being affected by the Bt. City Council heard from three members of the community who cautioned against the use of Bt because of the reduction in the food supply for birds, particularly those migrating through the area when application would be completed. In addition to these concerns, questions were raised about the accuracy of the survey methods used to determine the predicted gypsy moth population, and whether the application of alternative or no control measures, and the timing of the pesticide application were given any or adequate consideration. One speaker recommended that the aerial application of pesticides be postponed until later in May or early June, most of the migrating birds have vacated the area. D. Michael Fry, Ph.D. of the American Bird Conservancy specifically suggested that staff consider the use of viral and/or fungal pesticides that he believed to be commercially available for application.

In response to the concerns raised at the public hearing City Council deferred a decision on the proposed 2007 Gypsy Moth Suppression program, and asked staff to provide additional information on alternative treatments.

**DISCUSSION:** Staff considered each of the concerns raised by the public, and after further discussion with Dr. Fry and the other speakers following the public hearing, and an investigation of alternative treatments staff came to the following conclusions and developed the alternative recommendations presented:

- The survey methods used to predict the gypsy moth populations for the purpose of determining spray blocks that qualify for treatment under the State program are prescribed by the VDACS. While there has been much discussion about the accuracy of the survey method and its utility in urban areas, no alternative survey methods have been developed or adopted by the VDACS.
- Postponing the application pesticides to control the gypsy moth population until

the end of May or later is not practical because during the delay, the gypsy moth larva would continue to develop into its later life stages that would not be effectively controlled by Bt or "Gypchek", and as a result would require the use of more toxic chemicals

- The only alternative pesticide currently in use that is specific to gypsy moth (does not affect other lepidopteron larval stages) is "Gypchek." "Gypchek" is a labeled and registered pesticide produced by and for the exclusive use of the United States Forest Service (USFS). "Gypchek" is produced in limited quantities and is reserved first for application over public land where any threatened and/or endangered species are present. Surplus pesticide may be made available for use in State programs upon the request of State agencies. "Gypchek" contains a virus that is suspended in solution and applied at a rate of one gallon per acre. Two aerial applications are recommended at an interval of three days. An official of the USFS indicates that "Gypchek" is most effective when the level of gypsy moth infestation is high and that 60 to 80% control of the population could be expected when using the product on early development stages of the larva. Anecdotal information about the use of "Gypchek" suggests that its effectiveness is inconsistent.
- Staff was not able to find any information about a pesticide available to control gypsy moth that contains a fungus specific to gypsy moth. The literature confirms the effectiveness of the fungus *Entomophaga maimaiga* in having a substantial effect on gypsy moth populations when weather conditions support the development and release of the fungal spores. The fungus was introduced into this area during an experiment to control gypsy moth and has now become established. There are no products commercially available to distribute this or any other fungus for the control of gypsy moth.

Staff contacted the USFS and VDACS to discuss the possibility of applying "Gypchek." The U.S. Forest Service does not and will not know if they will have enough material available for our use until they are able to tally all of the acres to be sprayed that are known to have threatened and/or endangered species. They are willing to provide the material to the state for our purposes if there is a surplus. VDACS has agreed to request "Gypchek" for use in our program, and has agreed to make one application of the pesticide in lieu of the proposed Bt application provided that the City pays for the material. In order to apply "Gypchek" as recommended, the City will have to contract and pay for a second application to be made three days after the first. If the USFS is not able to provide "Gypchek" for the City's gypsy moth suppression program, the state has agreed to apply Bt as recommended in the original program.

Burlap for banding trees and educational materials will be available to the public in May and June at the Lee Center located at 1108 Jefferson Street; the Jerome "Buddie" Ford Nature Center located at 5700 Sanger Avenue; and Fire Station No. 53 located at 2801 Cameron Mills Road.

Banding trees with burlap helps monitor gypsy moth larvae and determine levels of infestation. Residents who band their trees will be reminded that they must inspect the bands and remove larvae on a regular basis for this program to be effective.

Based upon the additional information gathered about alternative pesticides, staff considered the following options when making their recommendation:

1. Application of no pesticides and the distribution of burlap banding and educational materials to the public.
2. One aerial application of *Bacillus thuringiensis* (Bt.) over one spray block, combined with the distribution of burlap banding and educational materials to the public. The qualifying area consists of approximately 75 acres that includes 319 properties bounded by South Overlook Drive on the north, Old Dominion Boulevard on the east, Allison Street on the south and Wellington Road on the west. This program would be voluntary, and a 200-foot buffer "no aerial spray area" will be established around any property where the owner and/or resident objects to the aerial spray application. No ground spray applications of pesticides would be offered to treat those properties located within buffers zones created by objectors.
3. Aerial application of Bt over one spray block, combined with the distribution of burlap banding and educational materials to the public. The qualifying area consists of 80 acres that includes 319 properties bounded by South Overlook Drive on the north, Old Dominion Boulevard on the east, Allison Street on the south and Wellington Road on the west. This program would be voluntary, and a 200-foot buffer "no aerial spray area" will be established around any property where the owner and/or resident objects to the aerial spray application. Properties located within a 200-foot buffer created by an objector will be eligible for ground spray application of Bt on susceptible tree species by a City contractor. Properties within the 200-foot buffer will be required to request to be ground sprayed or "opt-in" to be eligible for the ground spray application.
4. Two aerial applications of Gypchek in one spray block, combined with the distribution of burlap banding and educational materials to the public. The qualifying area consists of 80 acres that includes 319 properties bounded by South Overlook Drive on the north, Old Dominion Boulevard on the east, Allison Street on the south and Wellington Road on the west. This program would be voluntary, and a 200-foot buffer "no aerial spray area" will be established around any property where the owner and/or resident objects to the aerial spray application. Properties located within that 200-foot buffer will be eligible for the ground spray application of Bt. by a contractor hired by the City. Properties within the 200-foot buffer will be required to request to be ground sprayed or "opt-in" to be eligible

for the ground spray application.

Staff recommends that City Council approve option four; two aerial applications of "Gypchek" over the qualifying spray block, the voluntary ground spray application of Bt. within the buffer areas of objecting properties, and the distribution of burlap bands and educational materials to the public. If the USFS is not able to provide "Gypchek" for the City's program, staff recommends that City Council permit staff to adopt Option 3 which includes a single aerial application of Bt, voluntary ground spray application of Bt. within the buffer areas of objecting properties, and the distribution of burlap bands and educational materials to the public.

**FISCAL IMPACT:** The total cost for the each aerial application of "Gypchek" (if available) is estimated to be \$4,500. The State program will pay for half the cost of the first aerial application, approximately \$1,875, not including the cost of the "Gypchek". The City will have to pay for all of the material \$750 per application, half the cost of the first aerial application \$1,875 and the total cost of the second aerial application \$3,750. The total estimated cost to the City will be approximately \$7,125 (Attachment 2). Actual costs for the program will not be known until the State has executed contracts with selected applicators.

**ATTACHMENTS:**

Attachment 1. 2007 Gypsy Moth Suppression Program Spray Block Map

Attachment 2. Comparative Estimated Costs for 2007 Gypsy Moth Suppression Program With Gypchek or Bt.

**STAFF:**

Michele Evans, Deputy City Manager

Kirk Kincannon, Director, RPCA

Roger Blakeley, Deputy Director, RPCA

John Noelle, City Arborist, RPCA

Jerry Dieruf, Arborist/Gypsy Moth Coordinator, RPCA

2007 GYPSY MOTH SUPPRESSION PROGRAM SPRAY BLOCK



**Comparative Cost Estimates for 2007 Gypsy Moth Suppression Program  
With  
"Gypchek" or Bt.**

<b>AERIAL SPRAY SUPPRESSION PROGRAM</b>	<b>FEDERAL SHARE</b>	<b>CITY SHARE</b>
<b>Two Aerial Applications of "Gypchek"</b>		
First aerial spray application (75 acres @ \$50/acre) "Gypchek" (\$10.00 /gallon, 1 gallon/acre)	\$ 1,875.00	\$ 1,875.00 \$ 750.00
Second aerial spray application (75 acres @ \$50/acre) "Gypchek" (\$10.00 /gallon, 1 gallon/acre)		\$ 3,750.00 \$ 750.00
	<hr/> \$ 1,875.00	<hr/> \$ 7,125.00
 <b>One Aerial Applications of Bt</b>	 <b>\$ 1,875.00</b>	 <b>\$ 1,875.00</b>

2-27-07

\* submitted by  
John Neale

# GYPSY MOTH SUPPRESSION PROGRAM Spring 2007



## **Where we are in the process.**

- Presentation to North Ridge Civic Association December 11<sup>th</sup>, 2006.
- First legislative session December 12<sup>th</sup> 2006.
- Public Open House held at Charles Barrett Recreation Center January 16<sup>th</sup>, 2007.
- Public hearing and City Council action January 20<sup>th</sup>, 2007.

## **Before you tonight.**

- Staff response to issues raised at the public hearing.
- Amended Recommendation for the 2007 Gypsy Moth Suppression Program for consideration and action.

## **Issues Raised at the Public Hearing**

- The accuracy of the survey method used to predict the level of the gypsy moth infestation.
- The timing of the proposed spray application and its potential effect on the food resources for resident and migrating birds.
- The use of alternative pesticides that are specific to gypsy moth.

## **The survey method.**

- 1/40<sup>th</sup> acre plots are surveyed in locations that have historically been the most likely to support gypsy moths.
- The method employed is prescribed by the Virginia Department of Agriculture Consumer Services (VDACS).
- This survey method has been used since Alexandria began to participate in the State program in 1988.
- The survey method, originally developed for use in forestry operations has its shortcomings when applied in urban areas; however, no alternative methods have been developed or adopted.

## **Timing of Application**

- Pesticide applications must occur during the early stages of caterpillar development, within approximately three weeks of caterpillar hatch.
- Timing of the pesticide application is based on caterpillar development and leaf expansion; it usually occurs on or about May 1<sup>st</sup>.
- The suggestion to delay aerial pesticide application until after most of the bird migration is complete, June 1<sup>st</sup> or later, would render the application of Bt or other environmentally benign pesticides ineffective.

## **Alternative Pesticides**

- D. Michael Fry, Ph.D. Director of the Pesticides and Birds Program of the American Bird Conservancy spoke about alternative commercially available pesticides made from a fungus and/or a virus that are specific to gypsy moth and would not harm other caterpillars that provide a source of food for resident and migrating birds.
- Follow-up discussions and research were unable to find any pesticides derived from a fungus for gypsy moth control.

# Gypchek

- Gypchek is a pesticide that contains a nucleopolyhedrovirus that is specific to gypsy moth.
- Gypchek is a registered pesticide produced in limited quantities exclusively for the U.S. Forest Service.
- Gypchek is not available commercially.

## **Limited Availability**

- The Forest Service reserves Gypchek for its own use to treat government properties and other public lands that are infested with gypsy moth and are known to have Threatened or Endangered species of lepidoptera and other animals.
- Availability for use in Alexandria depends upon the quantity produced, and the number of acres that the Forest Service will have to treat. This information will not be available until late March or April.

**Amended Recommendation:  
2007 Gypsy Moth Suppression Program**

1. Two aerial applications of Gypchek over one spray block approximately 75 acres including 319 properties. Applications are made 2 – 4 days apart.
2. In the event that the U.S. Forest Service is unable to provide "Gypchek" for Alexandria's spray program, one aerial application of *Bacillus thuringiensis* (Bt) will be made over the proposed 75 acre spray block.
3. Other program components as originally proposed.

## **Pros and Cons of Gypchek**

### **■ Pros**

- Gypchek is specific to gypsy moth.
- No other non target moths or butterflies are affected; therefore, the native food sources for birds should not be affected.

## **Pros and Cons of Gypchek**

### **■ Cons**

- Gypchek requires two aerial applications to achieve effective control. Applications are made two to four days apart.
- VDACS will share the cost of one application of Gypchek. The City will have to pay for the pesticide and the second application.
- There is no guarantee that the Forest Service will make Gypchek available for our use.
- Gypchek is not commercially available.



"Michael Fry"  
<mfry@abcbirds.org>

02/27/2007 02:46 PM

Please respond to  
<mfry@abcbirds.org>

To <John.Noelle@alexandriava.gov>

cc "George Fenwick" <gfenwick@abcbirds.org>,  
<gwallace@abcbirds.org>, "Fenwick, Rita"  
<rferwick@abcbirds.org>, "Perry Plumart"

bcc

Subject RE: Follow up on Gypsy Moth Program. Fw: Saturday follow-up

18  
2-27-07  
Submitted by  
John Noelle

Thank you very much John.

I have been out of the country (Bolivia) doing pesticide regulation work to try and reduce kills of US migratory birds in South America.

I want to thank you very much for your willingness to try and protect migratory birds and their feeding resources by altering your spraying schedule. I missed your first e-mail, and I really appreciate receiving it again.

You are correct in assuming I could not find any useful information on availability of a fungal derivative to spray for gypsy moth. I am heartened by your willingness to try and obtain and use gypchek, and sincerely hope it will be effective in protecting the trees in Alexandria. If you are successful in using it, and it performs well, it would be really good to spread the word to other cities and counties. Perhaps American Bird Conservancy could be of help in publicizing the excellent work of the City of Alexandria. We would certainly work with the US Forest Service to try and increase the production of gypchek for future years.

After the Saturday meeting in January, I drove throughout the area to be sprayed, and was amazed at the large number of trees in those neighborhoods. I can see why there needs to be a modification of the assessment procedure for urban forests, as the area certainly qualifies as a forest. I hope this year is not a good year for gypsy moths, and that your efforts in getting gypchek are successful. If it is not available from the USFS, I would hope this year Alexandria could avoid spraying Bt, and I will work with you to encourage the USFS to make gypchek available to Alexandria next year.

Sincerely,  
Michael Fry  
Director, Pesticides and Birds Program  
American Bird Conservancy

-----Original Message-----

From: John.Noelle@alexandriava.gov [mailto:John.Noelle@alexandriava.gov]  
Sent: Tuesday, February 27, 2007 10:09 AM  
To: mfry@abcbirds.org  
Subject: Follow up on Gypsy Moth Program. Fw: Saturday follow-up

Dr. Fry,

I will be going before the Alexandria City Council again this evening to present an alternative spray program including two aerial applications of Gypchek instead of Bt. Gypchek is produced in limited quantities by and for the exclusive use of the US Forest Service. We have requested a quantity of the material for our purposes through our State program. We

will not know if we will get the material until the state has determined if they have enough to spray their high priority properties that have threatened and endangered species. Alternatively, we recommending one aerial application of Bt. or no spray program at all.

I am forwarding a copy of an email that I sent to you in January. I assume that you received it and that you were not able to find any additional information about a pesticide made from a fungal derivative.

Thank you again for your input at our public hearing. I hope that the steps we have taken indicate a satisfactory good faith effort to implement some of the suggestions that were made when we last met.

Thank you again for your help.

John Noelle  
City Arborist

- Forwarded by John Noelle/Alex on 02/27/2007 09:42 AM -----

John Noelle/Alex

01/23/2007 10:01  
AM

MFRY@ABCBIKDS.ORG

To

cc

Subject

Saturday follow-up

Dear Dr. Fry,

First let me say thank you for your time on Saturday. It was a pleasure meeting you and talking to you about the problem at hand.

The purpose of this email is to make sure that we follow up on the suggestions that you made on Saturday and cover all of the bases before we go back before our City Council. I believe your primary points were the timing of the aerial application and the use of alternative pesticides, a fungus and a virus.

I think you and I agreed that adjusting the timing of the aerial application of Bt is not feasible. Delaying the aerial application to the end of May or into June will minimize the effectiveness of Bt and alternative pesticides against the later larval stages of the gypsy moth. I don't think that we will recommending this as an alternative.

I was confused on Saturday. I was under the impression that Gypchek is a fungal derivative. It is not It is a viral derivative. I spent a good deal of time yesterday investigating Gypchek; it is a registered pesticide produced exclusively by/for the Forest Service, and is produced in very limited quantities. I have established a contact with the Forest Service

to gather more information. We will be discussing possibilities of adding it as an alternative within the state program over the next few weeks.

I was not able to find any fungal control available for application. The literature is rife with information about *Entomophaga maimaiga* which is the fungus that is credited for knocking down the populations when the weather is right. Some research has been done in distributing the fungus, but I could not find any information about it being made available commercially for application. If you are aware of another fungus or product please let me know.

That is all I have for now. Please let me know if you had any other ideas that I missed.

Thank you again for your input.

John Noelle, City Arborist  
City of Alexandria, Virginia