

**VIRGINIA COOPERATIVE GYPSY MOTH  
SUPPRESSION PROGRAM**

**2000 GUIDELINES FOR  
PARTICIPATION**

**AERIAL TREATMENTS**

**OCTOBER 1999**

Prepared by:  
VDACS/Office of Plant & Pest Services  
P.O. Box 1163  
Richmond, Virginia 23218

## TABLE OF CONTENTS

	Page
INTRODUCTION	
Introduction . . . . .	1
Summary of Important Provisions . . . . .	1
Agency Responsibilities . . . . .	2
FUNDING	
Items Eligible For Cost Share Reimbursement . . . . .	5
Breakdown of Costs . . . . .	6
ASSESSING THE NEED FOR TREATMENT	
Requirements of Qualifying Areas . . . . .	7
Predicting the Problem . . . . .	8
Biological Assessment . . . . .	9
Treatment Area Priorities . . . . .	11
About Spray Blocks . . . . .	12
PREPARING & SUBMITTING THE PROPOSAL . . . . .	13
AERIAL TREATMENT PROPOSAL FORM . . . . .	17
COOPERATIVE AGREEMENT . . . . .	22
PRE-TREATMENT ACTIVITIES	
Property Owner Notification . . . . .	24
Public Relations . . . . .	26
APPENDICES	
A: Egg Mass Survey Procedures . . . . .	28
B: Program Deadlines . . . . .	30
C: Favored Tree Species . . . . .	32
D: Sample Letters . . . . .	33
E: VDACS Regional Offices . . . . .	39

## **INTRODUCTION**

The purpose of this program is to protect contiguously forested areas from serious gypsy moth damage with priority to residential forested areas. This damage occurs as the result of severe tree defoliation and subsequent tree mortality. These Guidelines are specifically designed to apply to gypsy moth cooperative suppression programs. The Virginia Department of Agriculture and Consumer Services (VDACS) may cooperate, through written agreements, with any local government (The Cooperator) in suppression activities on private and local government-owned lands.

Suppression agreements may also be made with other State agencies for the treatment of publicly-owned lands provided the agency funds all costs not covered by USDA-Forest Service. Federal agencies may also enter into suppression agreements with VDACS for treatment of federally owned land provided the agencies pay 100% of treatment costs. Separate treatment arrangements with non-governmental bodies, private organizations or individuals will not be considered.

## **SUMMARY OF IMPORTANT PROVISIONS**

1. The program is for suppression of the gypsy moth in contiguously forested areas with priority to public recreational and residential areas.
2. Action must be initiated by the Cooperator by submitting a request for assistance described herein.
3. Localities will select the insecticide used for treatment from a VDACS approved list for control of gypsy moth.
4. Public relation activities are required, including individual notification of property owners in proposed treatment areas and buffer zones associated with aerial treatment areas (if buffers are assigned).
5. Localities have the option to require either total or voluntary participation in their locality for either all project blocks or part of the designated blocks within the locality.
6. If a voluntary program, the locality will determine if a buffer area around the treatment block and non-participant property is to be included, and if so, the size of the buffer area that will surround the treatment block and/or non-participant, up to 200 feet for rotary and 500 feet for fixed-wing aircraft.
7. Cost-sharing described herein is subject to State and Federal funding availability.
8. Cooperative Agreements with individual localities will be executed involving funding transactions and other pertinent provisions.

9. VDACS will provide technical assistance to enable the Cooperator to meet all provisions of these Guidelines.
10. The only expenditures which are eligible for federal cost share are those which are directly related to aerial treatments. (Egg mass surveys qualify for reimbursement only if the area being surveyed qualifies under VDACS' guidelines for an aerial treatment). Reimbursement can only be made on actual expenditures. To be eligible for Federal cost-share, localities conducting pre-suppression activities must provide documentation for all expenditures.

### **SUMMARY OF VDACS RESPONSIBILITIES AND ASSISTANCE PROVIDED TO COOPERATORS**

1. Train Coordinators in the procedures necessary to enable the Cooperator to comply with all aspects of this program.
2. Assist the Cooperator in public relations and educational efforts, including scoping session meetings, public meetings, and various handout materials.
3. Examine all areas proposed for treatment to determine adherence to Guideline provisions.
4. Prepare insecticide informational material and drafts of recommended notification letters for mailing by the Cooperator to property owners within spray blocks.
5. Provide the local government with an annual aerial survey map outlining areas with gypsy moth defoliation.
6. Serve as lead agency for the overall suppression operation.
7. VDACS will select a competent aerial application contractor. This aerial applicator will also be responsible for the purchase of all insecticides and additives used in the program.
8. After request approval, enter into agreement with local governments in which VDACS agrees to support the suppression program as outlined.
9. Ensure that all proposed spray treatments meet Federal (NEPA) and state environmental laws and regulations.

## **SUMMARY OF LOCAL GOVERNMENT RESPONSIBILITIES**

1. Appoint or hire a gypsy moth coordinator to handle the local workload and to coordinate activities with VDACS. The Coordinator's name, address, and telephone number should be submitted with the treatment proposal. This person should have the ability to conduct necessary field and map work of the type shown in these Guidelines. In addition, the Coordinator must obtain the appropriate Virginia Pesticide Applicator's Permit and comply fully with all applicable pesticide laws of the Commonwealth of Virginia.
2. Initiate a request for assistance in gypsy moth suppression by November 19 if action is desired in the upcoming year. This deadline is necessitated by time requirements for evaluations, recommendations, contracting, ordering supplies, other program work, and meeting USDA-Forest Service guidelines for receiving funds.
3. The request for aerial treatment must be accompanied by four (4) sets of a U.S. Geologic Survey 7.5' topographic maps, on which are designated the proposed boundaries of aerial treatment areas, spray block number, major bodies of water, potentially hazardous areas in spray block, and heliport or airport locations. Each proposed treatment area should only be large enough to protect the threatened resource. One set of maps should include points where egg mass surveys were conducted. Include a completed proposal form for each proposed aerial treatment block. This information is necessary to properly evaluate the request as outlined in the program guidelines.
4. Hold public awareness meeting (scoping session) to acquaint public officials and the general public of the overall objectives of the suppression program and solicit public input concerning suppression treatment options. This meeting should be held in the Fall, and is, in addition to the local treatment areas meetings, required once funding approval by VDACS is received by the locality.
5. If aerial treatments are proposed, notify VDACS by January 12 as to whether the project will be voluntary or mandatory. If participation is determined on a block by block basis, the Coordinator must document which proposed treatment blocks will be voluntary participation and which will require total participation.
6. For localities choosing a voluntary program, notify VDACS by January 12 if buffer zones around non-participants and/or treatment blocks are to be included, and if so, the size of the buffer that will surround non-participants property and spray blocks (up to 200 feet for rotary and 500 feet for fixed-wing).
7. Determine and notify VDACS by January 12 of the insecticides to be used in your locality. This should be documented on a block by block basis. Although insecticide choice should be included on the submitted proposal form, any changes to these submitted forms in regard to the insecticide used, must be submitted to the VDACS Richmond Office by January 12. Changes in the insecticide choice will be accepted after this date for the following reason: possible effect of insecticide on threatened or endangered species or other natural resource (as identified by the Virginia Division of Natural Heritage, the Department of Game and

Inland Fisheries, the U.S. Fish and Wildlife Service, and VDACS - Threatened and Endangered Species Program).

8. Upon notification that VDACS has accepted the treatment proposals, (late January or early February), property owners within the aerial treatment areas and buffer zones, if designated, must be notified by the locality of the impending project in writing, and that a local public meeting will be held to explain the program. If a locality conducts a voluntary program, landowners/residents who do not wish to have suppression treatments conducted on their property must notify the Program Manager, VDACS/Office of Plant & Pest Services, in care of the Coordinator, in writing, no later than seven (7) days after the publication of a legal notice explaining the treatment program and method of requesting exclusion. Under a voluntary program, properties requesting non-participation will be suitably marked to permit their exclusion. There may be instances under a voluntary program that numerous or strategically located exclusions may make treatment of the area impractical, and an evaluation jointly between VDACS and the local coordinator may result in cancellation of treatment in particular blocks.
9. Hold a public meeting to explain the program and suppression strategy selected. This meeting should be held in late winter.
10. Agree to administer and coordinate the implementation of the suppression program, giving VDACS officials daily treatment progress reports. This includes securing and having on site for the operational program boundary markers (helium filled balloons) if necessary, helium, string, communications equipment, and ground personnel to assist in administering the daily treatment operations.
11. Execute a Cooperative Agreement with VDACS in which the local government agrees to support the suppression program as already outlined and to pay their share of the suppression program costs.
12. Pay locality's billed portion of aerial application costs by June 30.

It is mutually understood that approval for this suppression project is contingent upon  
(1) available appropriations from the government agencies (local, state and federal); and  
(2) priority by type of area.

# FUNDING

## ITEMS ELIGIBLE FOR COST SHARE REIMBURSEMENT

Localities should begin documenting expenditures that they wish to be reimbursed for under the cost share program on July 1, 1999. Cost share documentation should continue until completion of the actual treatment project. The following items are eligible for cost share reimbursement under this program only if aerial treatments are conducted.

**Pesticide application** - contractual services for a single aerial application of treatment insecticides.

**Pre-flights** - rental of aircraft to familiarize aerial observers with proposed spray blocks.

**Treatment supplies** - treatment supplies necessary for the aerial application of the insecticides. These could include helium, balloons, balloon clips, string, flagging tape, topographic maps (limit on cost share of maps to be 12 sets of U.S.G.S. 7.5' topo maps), nomex suits, weather monitoring items.

**Communication supplies** - rental of communication equipment used to coordinate the application of the insecticides. Cost share reimbursement for cellular phone service will be limited to the time frame of April 15 through June 1. Reimbursement can only be made for cellular phone expenses directly related to aerial treatments.

**Landowner notification supplies** - supplies and postage needed for the printing and mailing of notification letters.

**Toxicologist** - toxicologist fees (if used at a scoping session or public meeting). Total maximum amount of toxicologist fees to be cost shared on is \$2,000.00, i.e. \$1,000.00 Federal share, and \$1,000.00 locality share.

**Newspaper advertisements** - publication of a request for scoping comments and/or advertisement of scoping and public meetings in a local newspaper. Cost share reimbursement will be limited to two scoping/meeting advertisements in the Fall and two public meeting advertisements in the Spring, for a total of four advertisements for the entire year.

**Personnel costs** - Personnel expenses (salary/wage and benefits) for those areas that qualify under USDA-Forest Service policy are eligible for cost share reimbursement.

**Travel** - USDA-Forest Service guidelines limit cost share reimbursement to travel expenses that are directly related to suppression activities. Mileage accrued by vehicles used to conduct suppression activities is reimbursable.

Since requests for federal funds are estimates, should federal funds be inadequate, treatment costs will receive priority for payment over personnel, mileage, and lodging costs. All costs for which the Cooperator wishes cost share reimbursement must be submitted by July 15.

Cooperators wishing cost share reimbursement for items/services other than those listed above should put this request in writing to VDACS before the purchase is made. The locality will be informed in writing whether this request is accepted or denied. This request for cost share should be submitted before the purchase is made to insure that the item or service is acceptable for reimbursement.

### **BREAKDOWN OF COSTS**

- Aerial Application and Insecticide **50% Federal, 50% Locality**
- Authorized suppression supply items **50% Federal, 50% Locality**
- Personnel Costs (if federal funds are available) **50% Federal, 50% Locality**  
Limit placed on Federal share of personnel costs is \$18,000.
- Travel expenses **50% Federal, 50% Locality**

### **BILLING STATEMENT**

A billing statement will be sent to each participating locality by VDACS no later than June 1, listing the actual total cost of services or supplies and locality's portion of these costs. Payment of the locality's portion must be sent to the VDACS main office in Richmond by June 30.

### **COST SHARE SUBMISSION AND REIMBURSEMENT**

All requests for cost share of expenditures incurred by the locality during the aerial spray project should be submitted by July 15, 2000. Included in this submission should be a cover letter listing all the items and costs as well as any backup documentation for the expenditures (invoice copies, receipt copies, newspaper advertisement copies, hourly work sheets for personnel, travel documentation for mileage, etc.). No cost share reimbursement request will be accepted after July 15, 2000.

## **DOCUMENTATION OF EXPENDITURES**

Documentation for all expenditures should be submitted with the reimbursement request. Acceptable documentation would include:

**Personnel** - financial report issued by the localities financial office detailing expenditures, hourly work sheets, and/or canceled payroll checks for each employee.

**Travel** - daily mileage log which indicates the driver of the vehicle, miles driven that day, point of origin and destination, and nature of the travel. Motel receipts.

**Supply items and other services** - Copies of invoices or receipts for each item purchased or service received.

## **ASSESSING THE NEED FOR TREATMENT**

There are several survey tools that should be used to determine which areas have a gypsy moth problem that need to be addressed. Gypsy moth defoliation surveys, which are conducted from mid-June to early July, can be used to identify areas that will require subsequent egg mass surveys. After new egg masses are laid in July and August, potential problem areas for the next year can be determined by relatively simple egg mass counts (Refer to Appendix A for egg mass sampling procedures). Tentative treatment blocks can be drawn at the same time. Another method that can be used to identify potential problem areas is landowner reports. The coordinator can visit the residence of the homeowners, count egg masses and if the area meets VDACS criteria, determine suitable treatment blocks. Other methods may involve gathering requests at public meetings. Public meetings are encouraged to serve as informational sessions and to obtain public input on any proposed treatment. VDACS personnel are available to assist at public meetings.

## **REQUIREMENTS FOR QUALIFYING AREAS**

Several factors must be taken into consideration when determining if an area qualifies for treatment under the Virginia Cooperative Suppression Program. Keep in mind that the local Coordinator's evaluation is the first critical step in this determination. A conscientious effort on her or his part saves a lot of time and expense later by eliminating areas that obviously do not qualify.

## AREAS THAT QUALIFY

Proposed treatment areas must fall in one of the following three categories to be considered:

- **Forested recreational** - includes public parks, public picnic areas, and roadside rest stops.
- **Forested residential** - includes communities, roadside strips with dwellings, zones around threatened communities, and individual permanent or seasonal dwellings.
- **Uninhabited or sparsely inhabited areas** - includes uninhabited and undeveloped forested areas which do not qualify under another category.

## PRIVATE LANDS EXCLUDED

The following areas will not be considered for treatment:

- Areas where a biological collapse of the insect population can be expected so that serious tree defoliation and public nuisance problems will not result. Biological collapse can be expected where most of the egg masses are about the size of a dime or a thumb nail.
- Localities which allow voluntary participation, and as such, some property owners do not wish to participate in the treatment program.
- Any area where the physical risk to conducting a safe aerial spray operation is deemed unacceptable by VDACS, the aerial contractor or the Cooperator.
- Any area where the effect of spraying non-target organisms or any ecosystem component is determined to be unacceptable or where such spraying is precluded by insecticide label restrictions or any applicable statutes.
- Yard and street trees including villages, communities on other areas where the trees are scattered. Such areas and areas containing trees planted primarily for shade or ornamental purposes are not considered forested unless they meet the definition of a forest (See page 9 for definition of a forest).

## PREDICTING THE PROBLEM

The gypsy moth situation in any area should fall into one of three problem categories--light, moderate, or severe. These are defined as follows: (See Biological Assessment for more information).

1. Light Problem - non-qualifying area:
  - Unfavorable tree species composition  
or
  - Less than 250 egg masses per acre  
or
  - No heavy infestations on nearby ridges within ½ mile

2. Moderate Problem - qualifying area:
  - Mostly favored and moderately favored host trees  
or
  - 250-1000 medium or large egg masses per acre  
or
  - Heavy infestations on nearby ridges within 1/2 mile
  
3. Severe Problem - qualifying area:
  - Mostly favored and moderately favored host trees  
and
  - More than 1000 large, healthy egg masses per acre  
and
  - Moderate or heavy infestation nearby  
and
  - Increasing gypsy moth population

## **BIOLOGICAL ASSESSMENT**

A simple count of egg masses in an area is not a reliable indicator of the problem to expect. There may be insignificant defoliation with over 1000 egg masses per acre or heavy defoliation with fewer than 500. Other important indicators include egg mass age, egg mass size, larval blow-in potential, egg mass viability, forest composition, and parasite conditions.

### **EGG MASS AGE**

It is imperative that the Coordinator's estimate of egg mass numbers be based upon new, current year egg masses. Familiarity with the previous season's population density, knowledge of any over-winter mortality of last year's eggs, and touching egg masses are essential in this assessment. Touch is perhaps the most definitive technique for separating old from new egg masses. Remember, old egg masses are soft and spongy to the touch and may be discolored, while new egg masses are hard or firm when touched and normally darker in color than old egg masses.

When evaluating an area that contains a two year old or older infestation, the Coordinator must touch as many reachable egg masses as possible and determine the ratio between old and new masses. This ratio can also be applied to egg masses that are visible but out of reach, thereby providing an accurate estimate of new egg masses for the blocks.

### **EGG MASS SIZE AND HEALTH**

U.S. currency coins are used as approximate size comparisons but since few egg masses are round, look primarily at the large end of the egg mass. Egg masses are sized in the following groups: Small - approximately the size of a dime or thumb nail; Medium - larger than a dime but smaller than a quarter; Large - larger than a quarter. When the vast majority of new egg masses observed are smaller than dime size, chances are the population is stressed and subject to collapse the following year from a naturally occurring virus. This should be noted on the proposal form. Normally, healthy building or static populations will have egg masses which

range in size from a nickel to a quarter or larger. As a general rule, the larger the egg mass, the healthier the population.

### **BLOW-IN POTENTIAL**

Sources of wind dispersed larvae are generally recognized as being heavy building populations on higher elevations within one half (½) air mile of the proposed block. The potential for blow-in should be determined by examining nearby ridges within ½ mile of the block. If there is potential for significant dispersal of newly hatched caterpillars from nearby heavily infested (greater than 3000 egg masses per acre) areas into the proposed spray block, this should be indicated under the Remarks section of the proposal form. This assessment must be supported with egg mass counts made in the nearby area or by current year's defoliation data. A determination of actual blow-in will be made jointly by VDACS and the locality at the time the blow-in is taking place. If larval blow-in is observed and it is determined that it may result in significant defoliation, treatment in that block will then be authorized.

### **FOREST DEFINITION**

Any spray block proposed for treatment under this program must contain an area that meets the following definition of susceptible forest. A susceptible forest is a wooded area where the trees are 25 feet or more in height and 50% or more of the surface area, when viewed from above, is covered by the tree crowns of moderately or highly susceptible hardwood tree species. Any block that does not contain a forested area as defined will not be accepted for treatment under this program. Residential or other qualified properties with only scattered ornamental trees and shrubs or only a few large shade trees are not acceptable. However, residential or other qualified properties, even if they do not contain trees directly around them, are acceptable if they are less than 200 feet from a susceptible forest.

### **TREE SPECIES COMPOSITION**

A determination of the tree species composition is important for qualifying purposes. Consider the percentage of the canopy involved rather than the percentage of stems.

**Highly susceptible area** - 33% or more of the trees are oak, the remainder consisting of trees such as apple, aspen, basswood, willow, boxelder, hawthorn, gray, white & river birch, and witchhazel.

**Moderately susceptible area** - less than 33% oak, the remainder consisting of trees such as maple, hickory, yellow or black birch, walnut, sourwood, cherry, sassafras, elm, butternut, hackberry, pear, sweetgum, blackgum, cottonwood, hemlock, pine and spruce.

**Non-susceptible area** - oak generally absent and two-thirds or more of the trees consisting of ash, catalpa, American holly, juniper, mulberry, spicebush, tulip poplar, dogwood, eastern red cedar, locust, striped maple, and sycamore. Conifer plantations also fall into this category.

## TREATMENT AREA PRIORITIES

In areas where the aerial application of insecticide is anticipated, egg mass density is to be determined by the local Gypsy Moth Coordinator using a survey method approved by VDACS.

VDACS will compile the total aerial treatment acreage under each priority and compare this figure with treatment costs and available funding to determine if reductions are necessary. If funding is insufficient to meet all requested needs, the Department will consider aerially treating additional areas of lower priority if the Cooperator funds, in advance of aerial treatment, 100% of the Department's aerial treatment costs.

Some areas may receive a "no treatment" recommendation if conditions do not warrant treatment based on the factors specified in the categories.

### LOW LEVEL INFESTATIONS

VDACS will not cost-share on low level aerial treatments.

### MODERATE TO HIGH LEVEL INFESTATIONS

Under the moderate to high level infestations category, all proposed aerial treatment areas must have at least 50% moderately or highly susceptible hardwood crown cover. The Area Type for each proposed aerial treatment block is required to be indicated on the Gypsy Moth Aerial Treatment Proposal/Site Specific Analysis Form.

The Area Types, under the high level category, are (in decreasing priority):

**Area Type A** - Publicly owned forested recreational areas. The proposed treatment area must have at least 250 egg masses per acre to qualify for treatment.

**Area Type B** - Forested residential communities with at least one inhabited house per one acre. The proposed treatment area must have at least 250 egg masses per acre or a high potential for larval blow-in to qualify for treatment.

**Area Type C** - Forested residential communities with at least one inhabited house per five acres. The proposed treatment area must have at least 250 egg masses per acre or a high potential for larval blow-in to qualify for treatment.

**Area Type D** - Forested residential community with at least one inhabited house per 15 acres. The proposed treatment area must have at least 500 egg masses per acre or a high potential for larval blow-in to qualify for treatment.

**Area Type E** - Sparsely inhabited, uninhabited and undeveloped forested areas. The proposed treatment area must have at least 750 egg masses per acre or a high potential for larval blow-in to qualify for treatment. VDACS recommends treatment of uninhabited areas be done after consultation with a forest management specialist.

If further categorization becomes necessary within the Area Types, the policy will be to treat those areas where the most good for the most people can be obtained.

## ABOUT SPRAY BLOCKS

### SIZE

Because of the economics and application limitations involved in aerially applying insecticide, an aerial treatment block must contain a minimum of 15 forested acres (Exceptions may be made upon review by VDACS).

### LOCATION

Because of the expense and additional logistics involved in treating isolated spray blocks, a single block of 15 acres or less located more than five air miles from other spray blocks does not qualify for the program. However, the Coordinator should check with neighboring Cooperators before dropping an isolated block, it is possible that they have proposed blocks in the vicinity. In addition, any area that is inaccessible by ground, regardless of its block size, does not qualify for the program.

### BUFFERS

It is up to each locality to determine buffer sizes around both non-participants and blocks themselves. These buffers must be determined and submitted in writing by January 12, with up to 200 feet when rotary-wing aircraft are used, and up to 500 feet when fixed-wing aircraft are employed.

A buffer zone of 500 feet is required around all naturally occurring open bodies of water that are in or near Dimilin treatment blocks. *A Buffer zone of at least 200 feet is required around man-made ponds.* No Dimilin will be applied within this buffer area. Btk may be applied in the buffer area (up to the waters edge) providing the Btk buffer area meets the definition of a spray block as described in these guidelines. All Btk buffer areas should be submitted as a separate spray block (a site specific analysis form for each Btk buffer is required). Open bodies of water are defined as any surface water, present at the time of spraying, that does not have a canopy directly over the water. This would include, but not be limited to, natural or manmade impoundments, swamps, bogs, streams, or rivers.

### MARKING OF TREATMENT BLOCK BOUNDARIES

Localities using DGPS - *The marking of treatment spray block corners will not be necessary when the locality uses a spray aircraft that is equipped with a functioning Differential Global Positioning System (DGPS).*

Localities not using DGPS - All spray block corners must be marked using helium filled balloons suspended above the tree canopy or by an acceptable natural landmark that can be clearly seen by the spray pilot. No other means of marking spray block corners will be acceptable. Due to safety and environmental concerns, no block will be treated that is not properly marked.

White balloons should be used to mark spray block corners and yellow balloons to mark non-participants and other sensitive areas. The minimum acceptable balloon diameter is 30 inches. Due to the unique nature of ballooning in highly urbanized areas, those localities in northern Virginia that use rotary wing spray aircraft will be permitted to use ballooning procedures developed during past spray projects.

The locality must have sufficient numbers of staff on hand to mark balloon points in a timely manner so the project is not delayed. Ground crews must remain in the vicinity of the treatment block to allow for servicing of downed or missing balloons and to also provide weather updates to the aerial observer.

## **PREPARING & SUBMITTING THE PROPOSAL**

The Cooperator's spray program proposal must be submitted to the appropriate regional VDACS/Office of Plant and Pest Services on or before November 19, 1999 (See Appendix for Regional Office addresses). All items listed below must be submitted with your treatment proposal.

### **COVER LETTER**

A letter from the responsible gypsy moth coordinator or his/her superior stating the following:

- desire to participate in the program
- total number of acres proposed for aerial treatment
- total number of spray blocks proposed

### **SPRAY BLOCK LIST**

Using the following as column headings, prepare a list of all spray blocks proposed.

- block number
- category priority assignment
- number of acres proposed
- egg masses/acre
- insecticide choice

### **TOPOGRAPHIC MAPS**

All proposals must include four (4) sets of original topographic maps. If more than one proposed aerial treatment block is on the same topographic map, these may be placed on a single map. All proposed aerial treatment blocks must be clearly defined as to its assigned block number. Proposed spray blocks must be drawn on new, unused United States Geological Survey (USGS) 7.5 minute topographic quadrangle maps which have forest cover delineated in green. Photocopies and blue line copies of these maps will not be accepted. Smaller or larger scale topographic maps are also not acceptable. Previously used, photocopied, or other such maps will be returned and can be resubmitted only at the discretion of VDACS. Four sets of maps are required to allow review by Virginia Natural Heritage Program, the Virginia Department of Game and Inland Fisheries, U.S. Fish and Wildlife Service and VDACS for threatened and

endangered species in proposed treatment blocks. In addition, one set will be used by the USDA-Forest Service to produce a composite spray block map. Topographic maps may be obtained at many local vendors including the U.S.G.S. office in Northern Virginia. Their street address is 12201 Sunrise Valley Drive, Reston, VA 22090; (703-648-6892). You must bring a purchase order or official documentation on local government letterhead stationary stating that the maps are to be used for government work. This will allow you to purchase the maps at wholesale cost. You may also contact the Western Distribution Branch, U.S. Geological Survey, Box 25286, Federal Center, Denver, Colorado 80225 to purchase the maps through the mail.

### **MAP UPDATING**

When making your field surveys, take along a green pencil and well sharpened black and blue pencils or fine tip pens to note any changes in the topographic map. Use the green pencil to shade in areas that are shown as white open areas on the map, but now contain trees. White open spaces on the map that actually contain trees and houses may not be treated unless they are shaded in green because the proposed treatment block boundaries are determined from the green shaded area on the map. Likewise, if a green area is no longer forested, indicate this with a dashed boundary line using the lead pencil or fine tip pen. Identify this area with the word "clearing" on the map.

Mark the location of any additional dwellings with a small black dot. Long lanes to a new dwelling or new roads which do not appear on the map must be accurately plotted and added to the map using black pencil or fine tip pen and the style line consistent with those used on the map for similar class roads.

Any major streams, rivers, lakes, ponds, swamps, marshes, or other large bodies of water, which are not designated on the map, should be drawn in with blue pencil or fine tip pen.

### **EGG MASS COUNT LOCATIONS**

It is important that you mark the location where egg mass counts were made on one set of topo maps submitted. Place a small "o" where you made each of your egg mass counts. If the egg mass count is greater than 250 egg masses per acre, place a small "x" over the "o". Indicate the egg mass count (actual 40th acre count) at each survey location by penciling in the count next to the "o" or the "x". This is most important in areas with borderline populations which were proposed because of a few known "hot spots" of higher density within the treatment areas. This high density spot could be in someone's lawn who contacted you, and you made an on-site inspection.

## **DRAWING THE BLOCK**

Spray blocks must be designed so that the spray aircraft can fly in linear line of flight in a safe and efficient manner. The blocks should be rectangular in shape and contain four (4) distinct corners. Avoid making aerial treatment blocks triangular to circular in shape. Avoid block corners with angles of less than 90 degrees. Use natural landmarks such as roads, intersections of roads with streams, wood edges, pipelines, rock outcroppings, etc., for corner locations.

*The usefulness of the Global Positioning System (GPS) will be enhanced if the boundaries of the treatment blocks are straight. Aerial treatment blocks that follow the gradual curve of a road or stream should be avoided. Where many roads are close together, try to group them into a large rectangular block rather than narrow individual blocks along each road.*

Draw the aerial treatment boundary on the map in ink or colored pencil (not green). *To ensure accurate digitizing of the spray blocks, a fine tip pen or pencil must be used. Do **not** use thick magic markers or highlighter pens to mark spray block boundaries. Do not obliterate details such as secondary roads with boundary lines. Any potentially hazardous areas such as electric lines, high towers or functional public reservoirs should be designated with a red pencil or fine tip pen.*

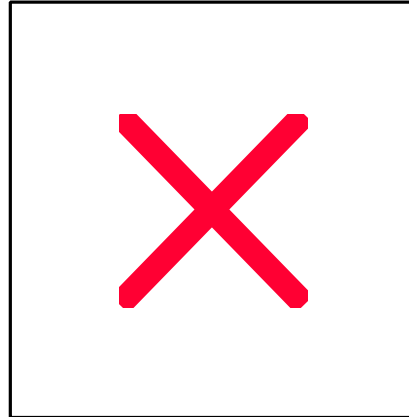
Although it is not necessary to label block corners on maps submitted with proposals, you may if you wish. It is imperative, though, that the maps given to the aerial applicator have this information on them. Letter the corners of the aerial treatment block in consecutive order beginning with A for each aerial treatment block, i.e. Block 25, corners A,B,C,D; Block 26, corners A,B,C,D. This will assist in identifying corners in communications.

Possible helispot or airport location(s) should be indicated on the topographic maps. Include the name and address of the site. If the helispot is on a topographic map without any proposed aerial treatment blocks, submit a separate map with the helispot or airport location.

This may also be a good time to begin looking for emergency landing areas for aircraft, which will be needed for the Federal Aviation Administration's required Congested Area Plan. Although emergency landing areas do not have to be designated on the maps submitted to VDACS, you should make note of possible areas for use once the aerial contractor is determined. The final determination of whether an area can be used as an emergency landing site will depend on which type of single or multi-engine fixed-wing aircraft that is used.

## NUMBERING THE BLOCKS

Lay out all 7.5 minute topographic maps containing proposed spray blocks according to their geographic distribution (see sample below). Refer to an index map for proper position. *An Index to Topographic and Other Map Coverage for Virginia* is available free from the U.S. Geological Survey at the address given above.



Starting with the westernmost map on the bottom row, number the spray blocks on that map moving west to east and up as shown on the sample on the next page. When finished with the first map move right to the next map in the row. If there is no additional map in that row, move up and left to the westernmost map in the next row. Continue consecutively numbering west to east and up on the second map. Repeat with all additional topographic maps.

Number any blocks that occur on two or more maps according to the appropriate number on the first map on which it appears. Be sure to number it on each map on which it occurs. Number the spray blocks on the map using black ink. Use a stroke which can be readily seen. Place the number where it will not hide map features or be confusing as to which block it refers. Draw a circle in black ink around this number. Also enter the number on the appropriate proposal form.

## CALCULATING ACREAGE

Calculate the acreage to be sprayed (green + forested areas only) within each proposed spray block with the use of a dot grid or planimeter. Dot grids are inexpensive and readily available from vendors specializing in forestry or engineering supplies.

Record the acreage calculations for a block in black pencil within the block boundaries on the topo map. Also enter this calculation on the appropriate proposal form in the **Forest Acres** subsection.

Contact the Office of Plant & Pest Services for additional help in drawing spray blocks and for examples of properly drawn spray blocks. The Office of Plant & Pest Services may redraw any cooperator proposed spray block when, in its opinion, such redrawing will facilitate aerial application or improve property protection. The Office of Plant & Pest Services will return all or any portion of a proposal that is not properly prepared or is incomplete. Additional time to correct a proposal must be negotiated with VDACS and is at the discretion of the responsible Regional Supervisor.

## **GYPSY MOTH AERIAL TREATMENT/SITE SPECIFIC ANALYSIS FORMS**

Detailed instructions for completing the Gypsy Moth Aerial Treatment/Site Specific Analysis Form is found in the next section of this manual.

### **PESTICIDE CERTIFICATION**

A current copy of the Pesticide Applicators Permit (category 2, 9 or 10) should be submitted with the aerial treatment proposal.

### **CONGESTED AREA AUTHORIZATION LETTER**

A letter from the appropriate local governing official giving approval for aerial treatments to be conducted in locality. This is a requirement of the Federal Aviation Administration under Federal Aviation Regulation Part 137, as part of a Congested Area Plan. Acceptable governing body representatives include: Mayor, City Manager, Sheriff, Chief of Police, City Council, County Board of Supervisors, City or County Commissioner, and City or County Administrator. An example of this letter can be found in the Appendix.

**Note:** If any changes are made to a treatment block, a new proposal form should be submitted to the Office of Plant & Pest Service Regional Office documenting such a change. In addition, a copy of the block change delineation on the topo map should also be submitted. Block revision documentation should be submitted as soon as changes are made.

### **AERIAL TREATMENT PROPOSAL FORM**

The following is information pertinent to the proper completion of the **GYPSY MOTH AERIAL TREATMENT PROPOSAL/SITE SPECIFIC ANALYSIS FORM**.

These forms are available from the Office of Plant & Pest Services main office in Richmond, or from regional offices located throughout the state (see Appendix for addresses of regional offices).

A sample copy of the proposal form is included in this section. One form must be prepared for each separate spray block proposed for treatment. In addition, if spray block changes are made, a new proposal form must be completed and submitted to the VDACS Regional Office documenting such changes. In addition, either a new topo map or a copy of the section of the topo map showing the redrawn block should be submitted. Fill in all required information on the form as explained below. Make sure that the blank spaces as well as the op-scan "bubbles" are filled out completely. Use a #2 pencil, and fill in the bubble entirely.

## **BLOCK INFORMATION**

Date - date form filled out by Coordinator.

County - Use the County Code Sheet provided in the guidelines. When entering the county FIPS code number, pad the left side with zeros to get a digit number. For example, Middlesex of Connecticut would be 007. A list of County FIPS codes can be found in the Appendix.

Block No. - Prior to submitting a proposal, number the proposed spray blocks on the maps according to the system described under the section, **Numbering the Blocks**. At that time, enter the appropriate block number in this space. This number should be a unique block reference number. It will be used to track the block throughout the project. Use numbers only. Do not use letters or decimal points.

Quad - Enter the Quad Number where the treatment block is located. Use the Quad Name found on the U.S.G.S. topo map and cross reference with the quad Number Reference Sheet which has been provided to you. If the block is located in more than one quad, list the quad number where the majority of the block is located.

Ownership - This variable is tracked for record keeping purposes only. If block is multiple ownership, report acreage separately using two forms.

## **PRE-TREATMENT SURVEY**

Was Block Treated Last Year - This is used to monitor the effectiveness of treatment over time. If more than 50 percent of the block was treated last year, indicate "yes", if less than 50 percent of the block was treated last year, indicate "no".

EM/ACRE - Enter average number of egg masses based on 1/40 acre plot surveys conducted in proposed treatment area. Pre-treatment egg mass density must be collected using 1/40th-acre plots distributed within the treatment block. *Procedures for determining egg mass density are discussed in Appendix A.*

Egg Mass Size - Self-Explanatory. Helps determine growing or declining population.

Egg Mass Length (optional) - Measure (in mm) 10 egg masses at random per block and record the average length. Measure only new egg masses.

1/40 Acre Plots - Indicate the number of plots within the spray block. Suggested minimum survey plot sites for various acreage is given in the section, **Egg Mass Survey**.

## **SITE SPECIFIC ANALYSIS**

Forested Acres - Enter the number of acres of forested area within the proposed block that is to be sprayed. This is the acreage we will use in our calculation of acres to be sprayed. Methods of calculating acreage are explained under the section, **Calculating Acreage**.

Percent Cover - Enter the percentage of host canopy cover. Refer to Section **Forest Definition** for information pertaining to percent host canopy required to qualify for this program.

Percent Preferred Host - Self-explanatory. See **Appendix C** for list of major host species.

Total Number of Dwellings - Enter the number of permanent and/or the number of seasonal dwellings which are contained within the proposed spray block. Population of the spray block should be estimated based on permanent dwellings present.

No. of Permanent Dwellings - Total number of dwellings minus those used on a seasonal basis.

Elevation - Self-explanatory. Is important in determining possible treatment time.

Open Water in Block - Y if Yes, N if No, UNK if unknown. Areas of water in proposed treatment block which will not have a canopy cover during treatment time. These should also be designated on the submitted map outlining the treatment block. If not, mark in with blue pencil or fine tip pen.

Open Water Adjacent to Block - Y if Yes, N if No, UNK if unknown. Areas of water adjacent to proposed treatment block (within 500 feet) which will not have a canopy cover during treatment time. These should also be designated on the submitted map outlining the treatment block. If not, mark in with blue pencil or fine tip pen.

Aspect - With the slope to your back, the aspect is the direction you are facing. If the block does not have an aspect, do not fill out anything in this section. The development of foliage and larvae depends on heat. Those areas with southern and western aspects develop sooner than those with northern or eastern aspect. Foliage and larval development are important in the timing of effective insecticide application.

Proximity of a School - Self-Explanatory. A school is considered adjacent to a proposed treatment block if it is within 500 feet of the block. Designate any new schools which are not depicted on the topo map.

Proposed Insecticide - Insecticide (choose from Dimilin or Bt) proposed at time of form submission. Per block insecticide changes will be accepted until January 12. No changes will be accepted after this date.

Aircraft Hazards - Self-explanatory. An aircraft hazard is considered adjacent to a proposed treatment block if it is within one (1) mile of that block. Mark any potential hazard areas with red pencil or fine tip pen on the submitted topo map.

#### **AREA LEVEL AND TYPE DESIGNATION**

Fill the bubble which pertains to the proposed block. Select and enter only one category which best describes the situation for the entire proposed spray block. See Section **Treatment Area**

**Priorities** (pg. 11) for detailed description of each category and for definitions of low level and moderate to high level infestations.

## **COMMENTS**

Use this section for additional information which may prove useful in the further evaluation of the block such as blow-in potential or for details on any of the above requested pieces of information. Make sure you bubble in "y" following the word "Comments" if you put comments in this section.

Form Prepared By (Initials) - Self-Explanatory.

## **ON-SITE MONITORING**

Material (insecticide being used) - Dimilin, Bt, other

Code (*This is important*) - Use 0-9 to differentiate between formulations (0=Dimilin 4L at .50 oz AI per acre, 1=Dimilin 4L at .25 oz AI per acre, 2=Foray 48B, 3=Dipel 6AF, Thuricide 48LV, 5=Gypchek).

If Bt - Diluted means with any amount of water. Undiluted Bt is sometimes referred to as Neat.

B.I.U. - List the actual B.I.U./acre applied to the block. B.I.U., billions of international units, reflects the potency of the Bt product.

Application Rate Oz/Ac - Refers to total application rate in ounces per acre.

Application Start Date - Month, Day and Year.

Most of Application Occurred During - Time of day application took place. If treatment took place morning and evening, check all day. If treatment occurs on more than one day, use separate forms for subsequent days' treatment. Indicate State, County, block number, and complete all of Section C on these additional forms.

Aircraft Tail Number - FAA tail number of aircraft(s) conducting the application. This tail number will be cross-referenced with an aircraft calibration data form that provides specific information about the type and configuration of the aircraft. Use both tail number code entries if two different aircraft are included in the block. Add any additional tail numbers in the comments section.

Percent Defoliation on Principle Species (optional) - Enter percent defoliation on target species at the time of application. The value of interest here is the average percent defoliation across the block. It is not the percent of trees defoliated, but the average percent defoliation of trees within the block.

Percent Foliage Expansion - Refers to oak (red or white) foliage expansion at the time of treatment. Use an average of leaf expansion conditions. Observe some at the top of trees as well as some at the lower crown.

Foliage Condition -

Wet - If foliage is dripping wet or if water can be easily shaken from leaves.

Dry - If foliage is moist from dew, it is still marked dry.

Unk - If the actual block conditions at the time of treatment cannot be determined.

Predominant Larval Instar - Visually inspect 10 larvae. Indicate the predominant larval instar. Select one! Use the guide found in the Appendix.

Wind Speed - Average wind speed should be estimated using the Beaufort wind scale. This can be found in the Appendix. Review the publication, "A Guide to Weather and Gypsy Moth Spray Operations in the East". Note: wind speed is estimated for tree tops. Use the mid-point of the wind scale or the wind speed that represents the average wind speed during treatment. Estimate wind speeds at or near the block.

Temperature in Degrees F. - Temperature readings should be taken at or near the blocks. Refer to the Publication, "A Guide to Weather and Gypsy Moth Spray Operational in the East", found in the Appendix. Use the average temperature during treatment.

Percent Relative Humidity - Relative humidity should be estimated at or near the block. Use the average relative humidity during treatment of the block. The sling psychrometer should be used for relative humidity estimates. See "A Guide to Weather and Gypsy Moth Spray Operations in the East".

Spray Deposit observed to be - Use a minimum of 10 water-sensitive cards placed within the block. Cards should be placed at least 20 feet apart and preferably dispersed across the block. Refer to "Field Guide for Treatment Monitoring" in the Appendix for examples of deposit. Use 10 drops/cm<sup>2</sup> as "good" and below that as poor.

More than ½" of Rain Within 24 hours - Rainfall should be monitored after treatment. If rain is in the geographic area, the block should be checked from time to time to observe if rainfall occurs. Indicate "yes" only if certain the block experienced rain of the least ½ inch.

## **POST-TREATMENT**

Defoliation - Indicate the defoliation category. Note that categories are none, light (1-30 percent foliage missing), moderate (31-59 percent of foliage missing), and heavy (greater than or equal to 60 percent of foliage missing). Show the percent of block acres defoliated. Note that percentages must total 100 percent.

Survey type - Survey type must specify whether the defoliation estimates were made using aerial sketch map surveys, ground visit to the block, or the use of aerial photography.

Block Boundaries - If one or all of the spray block's boundaries can be distinguished from adjacent non-treated areas, mark "one or all distinct." If all sides of the treated block cannot be distinguished from adjacent non-treated areas, mark "all indistinct." Though subjective, this provides some measure of the effectiveness of the treatment in comparison to surrounding areas.

## **COOPERATIVE AGREEMENT**

Important and binding commitments in these Guidelines will be incorporated into a Cooperative Agreement between VDACS and the locality. This Agreement will be sent out by March 1st to the localities who requested participation in the fall. It must be signed and returned to the Richmond office before any treatments will occur, but no later than April 1st. Below is an example of how the Agreement may read. Please note that each Cooperative Agreement is designed to fit a particular locality's method of participation.

"This agreement is between the Virginia Department of Agriculture and Consumer Services, hereinafter referred to as the Department, and Metropolis County for the purpose of providing a cooperative gypsy moth suppression program in the said County, hereinafter referred to as the locality. In consideration of the promises and mutual covenants herein obtained, the parties do hereby agree as follows:

A. The Department agrees to cost share with the locality, as provided in Section B, on the services and supplies listed on the proposal forms submitted by the locality and approved by the Department.

B. For aerial treatments and insecticide, the cost share formula shall be 50% Locality and 50% USDA-Forest Service, when aerial treatments qualify under the USDA-Forest Service criteria. Supplies required to conduct the aerial treatment program as stated on Pages 5 and 6 of the Virginia Cooperative Gypsy Moth Suppression Program Aerial Treatment Guidelines shall be cost shared at the formula 50% USDA-Forest Service, 50% locality. Approved personnel costs will be reimbursed on a 50/50 matching basis, (50% locality, 50% federal) up to maximum reimbursement to the locality of \$18,000.

C. A billing statement will be sent by VDACS by June 1, listing the locality's portion of services or supplies. Payment of the billing statement is due from the locality within 30 days of billing date, but no later than June 30. Payment must be made directly to VDACS at P.O. Box 526, Richmond, Virginia 23204.

D. Localities should document their expenses to be cost shared beginning July 1 and continue until completion of program. Request for cost share of expenditures incurred by the localities should be submitted by July 15 and include a cover letter listing all items and costs as well as backup documentation of expenditures (i.e. invoice copies, receipt copies, hourly work sheets). Cost sharing is to be based on actual expenses. Approved cost share items other than those listed on the proposal forms are given in the Virginia Cooperative Gypsy Moth Suppression Program 2000 Guidelines for Aerial Treatment Participation. No other items other than those listed will be cost shared on unless written approval is received from the Department.

E. Before exceeding estimated cost by 10% or additional supplies are requested, both parties must agree in writing to the change.

F. Both parties agree to the agency responsibilities as outlined in the Virginia Cooperative Gypsy Moth Suppression Program 2000 Aerial Treatment Guidelines published by the Virginia Department of Agriculture and Consumer Services and dated December 7, 1999.

This agreement shall be effective immediately after signed by all parties.

County of Metropolis

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Date)

Virginia Department of Agriculture and Consumer Services

This agreement has been reviewed by staff of this Department. Its substantive terms are appropriate and sufficient funds have been obligated for its performance.

Reviewed and approved by:

\_\_\_\_\_  
Program Manager, Office of Plant & Pest Services

\_\_\_\_\_  
Director, Division of Consumer Protection"

# **PRE-TREATMENT ACTIVITIES**

## **Property Owner Notifications**

### **PROPERTY OWNERS IN A TREATMENT AREA**

All property owners within VDACS approved treatment areas must be individually notified of the proposed treatment in writing, regardless of whether the locality's program is voluntary or mandatory. Notification must be done by the locality and not a third party. A reasonable attempt must be made to contact all property owners, which is defined as making at least two efforts by either mail, telephone, or personal service. Failure to do so may lead to cancellation of the Cooperative Agreement.

### **PROPERTY OWNERS NEAR A TREATMENT AREA**

All property owners adjacent to an aerial treatment block must also be individually notified in writing. It is the locality's option whether they wish to contact other nearby homeowners not immediately adjacent to the spray block. The purpose of this notification is to inform adjacent and nearby landowners of the aerial treatment project in their immediate area.

### **MAILING LIST**

The Coordinator should begin compiling a property owner mailing list in sufficient time to allow for mailings by March 1. A subsequent 4 to 6 week period of time is needed to allow for non-participant response (for voluntary programs), to hold public meetings, to follow up on contacting property owners, and to finalize the program. This mailing list should be retained by the locality for at least a one year period and be available for inspection by VDACS upon request. If personal service is used to notify landowners, signatures of the contacted landowners, verifying that they have been contacted, must be maintained for one year at the locality's office and be available for inspection by a VDACS representative upon request.

### **NOTIFICATION LETTER**

Sample notification letters prepared by VDACS may be found in Appendix D. All the information contained in the sample letter is required, but the Cooperator may add any additional information deemed pertinent. The letter will (if the program is voluntary) contain instructions for property owners to have their property deleted from spraying. If the locality allows a buffer zone, a letter will be sent to inform the owner that his property may abut the treatment area and contain instructions to request a buffer. Whether the program is voluntary or mandatory, the contact letter will also contain a request that the property owner contact the occupant of the property, in the case of rental property, to inform the tenant of the proposed treatment. All notification letters will be reviewed by the VDACS/Office of Plant & Pest Services for content before final printing and distribution is made. The Cooperator must send two copies of all notification letters used to the VDACS/Office of Plant & Pest Services' Regional Office.

### **REQUESTING NON-PARTICIPATION**

In localities with voluntary participation, either the property owner or the tenant has the right to refuse treatment. Letters from property owners requesting non-participation are to be addressed to the Program Manager, VDACS/Office of Plant & Pest Services, in care of the local coordinator. In order to simplify this process and to allow sufficient time to digitize non-

participant landowners into GPS flight files, VDACS has set a mandatory April 1, 2000 cut-off date for non-participant letters to be received from the localities. Each locality conducting aerial treatments, with voluntary participation, should mail notification letters to the landowners well enough in advance to meet the April 1, 2000 deadline. Copies of all letters from landowners requesting non-participation should be sent to the VDACS/Office of Plant & Pest Services' Richmond Office. Non-payment of fees by a landowner to the locality does not constitute non-participation. Spray blocks will not normally be dropped due to non-payment of fees.

### **LEGAL NOTICE**

In addition to notification letters, the Virginia Pest Law requires the printing of a legal notice indicating the nature of the pest, method of proposed treatment, method of participation (voluntary or mandatory), designation of buffer zones (if applicable), and, if voluntary participation is allowed, instructions for property owners who wish to have their property deleted from treatment. If the locality program is voluntary, property owners have seven (7) days from the publication date of this notice to indicate, in writing, their desire not to participate in the project. This legal notice is prepared and submitted by VDACS to a local newspaper which serves the area to be treated (designation of the newspaper will be made by the local Coordinator). It will be printed in the newspaper of choice seven (7) days before the predetermined locality cut-off date for non-participants.

### **PERSONS IMPACTED BY NON-PARTICIPANTS**

Written notification must be provided by the Cooperator to all landowners who are dropped from an approved spray block because of the action taken to accommodate a non-participant. The local Coordinator must promptly notify VDACS of the locations of these non-participants. All original letters requesting non-participation, as well as a prepared list of the total number of non-participants, showing a breakdown of those objecting to treatment of Diflubenzuron, those objecting to treatment of Bt, and those objecting that are outside of a spray block, should be submitted to the VDACS Richmond Office two (2) weeks after the cutoff date for non-participation.

It is recommended that non-participants be visited by the Coordinator. Their non-participation may be related to a lack of knowledge of the program, its benefits, and its safety. Mailing of notification letters and publication of public notices should be coordinated to compliment each other.

## **Public Relations**

### **SCOPING SESSIONS/OPEN HOUSES**

Those localities that are conducting aerial treatment programs are required by VDACS to hold a public awareness meeting to acquaint public officials and the general public with the overall objectives of suppression programs and solicit public input on suppression strategies. This meeting may have a formal format (scoping meeting) or be held in an open house format. This meeting should be held in late fall, but no later than December 15. This will allow time for input from the public before final decisions on insecticides, buffer zones, and voluntary or mandatory programs are due in January. This meeting is in addition to the local treatment area meetings required once funding approval by VDACS is received by the locality.

In addition to the public awareness meeting, each locality conducting aerial treatments must place an ad in at least one local newspaper serving the general area to be treated, requesting input into the suppression program in their locality. The advertisement should be published sometime between November 1 and November 30. This ad may be two-fold in nature; it may advertise the public awareness meeting and at the same time solicit any comments on the program. When soliciting scoping comments through a written advertisement, please be sure to place your telephone number and address in the advertisement so that the reader will be able to contact you should they need additional information.

The ad should state that all written comments should be addressed to the Program Manager, VDACS/Office of Plant & Pest Services, in care of the local coordinator. The request for comments ad should also state that the cut-off for comments is December 15. A copy of this ad should be sent to the VDACS/Office of Plant & Pest Services' Regional Office. An example of such an ad may be found in Appendix D.

Copies of comment letters should be made by the local coordinator. All originals should be sent to VDACS/Office of Plant & Pest Services' Richmond Office immediately after the cut-off date. Those comment letters received before December 15 will be addressed in the next year's Environmental Assessment.

## **PUBLIC MEETING**

In addition to the scoping session meetings held in the fall, each locality conducting aerial treatments must also hold at least one public meeting. This meeting is held after final approval of treatment blocks has been made, and final decisions on insecticide, buffer zones, and voluntary or mandatory participation have been given. This meeting should be held in late winter, but no later than March 15. This meeting will be held to explain the suppression strategies to be implemented, and also to explain the procedure for requesting non-participation (in those localities conducting voluntary programs).

This public meeting may be advertised in the notification letters distributed. In localities conducting voluntary programs, the cut-off date for landowners/tenants to request non-participation should be stated in the notification letter and/or at the public meeting.

During March or April, in a further effort to promote good public relations, the local government should seek cooperation from the news media in releasing information on the program and areas proposed for treatment. During the actual treatment, daily news releases are necessary to advise the public of treatment schedules.

## **INFORMING LOCAL HEALTH CARE/EMERGENCY RESPONSE AGENCIES**

The locality should also contact appropriate local hospitals, emergency centers, fire stations, police departments, and emergency rescue squads to inform them of the spray activities to be conducted (including giving them dates, areas treated, copies of material safety data sheets and information sheets for Diflubenzuron and Btk etc.). These agencies may be contacted by residents concerning the activities. Keeping them up-to-date on the program will keep public relations open and problems down.

VDACS will notify the Federal Aviation Administration of aerial activities that will be conducted in high population areas. VDACS will also notify the emergency services coordinator in each locality conducting aerial treatments to inform him of the activities.

This should be done at least one month before treatments are to occur. If any changes are made, these agencies should be updated.

# APPENDIX A: EGG MASS SURVEY PROCEDURES

## EGG MASS SURVEY

The local Coordinator has several methods available for determining the number of egg masses in potential aerial treatment blocks. All of these methods rely on the 1/40th acre fixed plot as the basic sample unit. In order to participate in the treatment program localities must use one of the approved survey methods described below.

### METHOD ONE

Plot Size: 1/40 acre circular plot with a radius of 18.64 ft.

Number of Plots: the actual number of plots that should be sampled are dependent upon the size of the area, species mix uniformity, topography, insect population density and uniformity, and accessibility. The following are the minimum numbers of plots necessary based on block size.

Block Size (Acres)	Minimum No. of Sample Plots	Block Size (Acres)	Minimum No. of Sample Plots
25-50	3	501-600	10
51-100	4	601-700	11
101-200	6	701-800	12
201-300	7	801-900	13
301-400	8	901-1000	14
401-500	9		

For blocks over 1000 acres, add 1 plot for each additional 60 acres.

Add a few (2-5) additional plots if:

- a. The minimum number of plots show a wide, inconsistent range of egg mass levels.
- b. The per acre counts are low, ranging from 40-280.
- c. The block does not qualify based on egg mass counts, but a high potential for blow-in exists. Make additional counts in those areas where the caterpillars are likely to originate.

Location of Plots: Distribute the plots throughout the proposed area. Select the plot to be representative of the species composition in the area. Avoid having the plot contain open areas, all unfavorable tree species or individual trees which have unusually high egg mass counts.

## **METHOD TWO - SEQUENTIAL SAMPLING PLAN**

This method was developed for use by the Appalachian Integrated Pest Management Program (AIPM). It relies on the 1/40th acre fixed plot as its basic sample unit. Sequential sampling plans minimize sampling costs by concentrating sampling resources in areas where egg mass densities are close to management threshold levels. This method requires the decision maker to establish management thresholds for each potential treatment area before actual surveys can begin. This method has been shown to provide correct pest management decisions while reducing labor costs by as much as 40%.

For details of this method see:

Fliescher, S., Carter J., Reardon, R., Ravlin, F.W. 1992. Sequential Sampling Plans for Estimating Gypsy Moth Egg Mass Density. USDA Forest Service Publication NA TP-07-92.

## **METHOD THREE - EGG MASS SAMPLING FOR DECISION MAKING**

This method also uses the 1/40th acre fixed plot as the basic sample unit. This sampling method determines the minimum number of sample plots for any given area by establishing an acceptable percent error. This method utilizes a grid system, for determining fixed radius sample (plot) locations, in each forested area to be surveyed. This has the advantage of spacing the fixed plots throughout the entire sample area and removes some of the bias associated with randomly placing fixed plots.

For details on this sampling method see:

Liebhold, A., Thorpe, K., Ghent, J., Lyons, B. 1994. Egg Mass Sampling for Decision-Making. In Gypsy Moth News. 33:16-21.

## **EGG MASS COUNTING**

**Low** - When egg mass counts are low, it is necessary to take accurate plots and spend additional time looking around, paying attention to places where egg masses are more likely to be found. If areas are proposed because of the high potential for caterpillar blow in, an attempt must be made to verify the high population and record its distance and direction from the proposed treatment area.

**Moderate to High** - If it is obvious that a 1/40 acre plot will contain numerous egg masses, do not spend more than five minutes making a quick plot count. To refine and develop your ability at quick counts and estimates, try making an estimate and then doing an actual count to check your accuracy. A few days of checking every third or fourth estimate will develop your ability to make relatively accurate rapid estimates. Be sure to watch for and distinguish old (previously hatched) egg masses from current (unhatched) egg masses.

## **APPENDIX B: PROGRAM DEADLINES**

The following deadlines must be met by the local government and VDACS if suppression program planning is to be adequately performed. VDACS will make no treatment commitments to the locality for any late treatment proposals.

### **July 1 to November**

Cooperator conducts fieldwork to delineate proposed treatment boundaries.

VDACS field evaluations of proposed treatment areas in conjunction with coordinators' preparation of treatment area proposals.

Begin documenting personnel expenses July 1.

### **November 1-30**

Placement of advertisement in at least one local newspaper requesting comments on the locality's suppression program. Copy of advertisement sent to VDACS/Office of Plant & Pest Services' Regional Office.

### **November 19**

Treatment proposal deadline. All proposals must be sent to the appropriate Regional Office of the Office of Plant & Pest Services. The addresses of the Regional Offices and their assigned counties of responsibility are listed in the Appendix. Proposals must include properly completed proposal forms for each proposed treatment area and USGS 7.5' topographic maps with the proposed aerial treatment areas.

### **December 15**

Fall scoping sessions/open houses completed.

Scoping session comment period ends. Originals of all comments sent to VDACS/Office of Plant & Pest Services' Main Office.

### **January 12**

Decision on voluntary or mandatory participation, buffer zone designation (both around the treatment area and non-participants), and insecticides to be used reported in writing to VDACS/Office of Plant & Pest Services' Main Office.

### **January 1 thru March 1**

Notification letters prepared by locality and reviewed by VDACS/Office of Plant & Pest Services' Regional Office.

Notification letters mailed to property owners within aerial treatment blocks and associated buffer zones.

Two copies of notification letter sent to VDACS/Office of Plant & Pest Services.

**By March 1**

Cooperative Agreements sent out by VDACS.

**March 8**

Completion of all public meetings to explain the suppression strategy and the procedure for requesting non-participation (voluntary program).

Legal notices published in local newspaper by VDACS at least 7 days prior to the April 1 cut-off date for non-participation request (in localities conducting voluntary programs).

**By April 1**

Deadline for signed Cooperative Agreements to be returned to VDACS' Richmond Office.

Deadline for non-participation letters to be received in the VDACS' Richmond Office.

**By April 10**

Digitizing of non-participants into Global Positioning System (GPS) completed.

**May-June**

Aerial Treatment season.

**By June 1**

VDACS sends billing statement listing locality's cost of services and/or supplies. Amount due is to be paid within 30 days of receiving bill but no later than June 30.

**June 30**

Deadline for payments to VDACS of outstanding amount due by locality for aerial treatments.

**July 15**

Deadline for submission of supplies and personnel costs localities wish reimbursement for under the cost-share program. No cost share reimbursement requests will be accepted after this date.

## APPENDIX C: FAVORED TREE SPECIES

### Highly favored by all size larvae:

oak (all species)	gray, white & river birch
aspen	boxelder
apple	hawthorn
basswood	witchhazel
willows	

### Favored by only large larvae:

beech	eastern hemlock
chestnut	all species of pine & spruce

### Not favored but fed upon by large larvae when preferred foliage is not available:

butternut	black and yellow birch
cherry	cottonwood
elms	blackgum
hackberry	hickories
hornbeam	maples
pear	sassafras
sweetgum	walnut

### Not favored and rarely fed upon:

ash (all species)	dogwood
catalpa	eastern red cedar
American holly	locust
juniper	striped maple
mulberry	sycamore
tulip poplar	spicebush

## **APPENDIX D: SAMPLE LETTERS**

### **EXAMPLE: SCOPING SESSION MEETING AND COMMENT REQUEST ADVERTISEMENT**

Gypsy Moth Public Comment Meeting  
Friday, November 5, 1999  
Scoping Meeting  
Metropolis High School  
1613 Tree Road  
Metropolis, Virginia  
8:00 p.m. - 10:00 p.m.

Saturday, November 6, 1999  
Gypsy Moth Open House  
Hobokin Fire Station  
222 Fire Road  
Hobokin, Virginia  
10:00 a.m. - 12:00 p.m.

The purpose of the meeting will be to discuss the current gypsy moth situation in Metropolis County, their proposal to the Virginia Department of Agriculture & Consumer Services (VDACS) for suppression activities and to identify public concerns. The Open House to be held on Saturday, November 6, will allow interested parties to ask questions concerning the gypsy moth and the Metropolis County program in an informal atmosphere.

Written comments will be received until December 15, 1999 on Metropolis County's proposal or on any aspect of the statewide gypsy moth suppression program. Comments should be sent to:

Program Manager, VDACS/Office of Plant & Pest Services  
c/o Metropolis County Gypsy Moth Office  
114 Main Street, Room 610  
Metropolis, Virginia 22801

Comments received by December 15 will be addressed in the 2000 Gypsy Moth Suppression Environmental Assessment.

For further information concerning the meeting, call the Metropolis County Gypsy Moth Office at (888) 827-8888.

Any person who needs any accommodation in order to participate at this meeting should contact the Metropolis County Gypsy Moth Office at least seven (7) days before the meeting date, so that suitable arrangements can be made for any appropriate accommodation.

## **EXAMPLE OF LETTER OF AUTHORITY FOR AERIAL APPLICATION TO OCCUR IN LOCALITY**

If locality treatment blocks are located in areas considered congested by the Federal Aviation Administration, a letter of authority for treatments to occur will be required from that locality. This letter must be from a governing representative of that locality. A list of acceptable positions of authority include: mayor, city manager, sheriff, chief of police, city council, county board of supervisors, city or county commissioner, and city or county administrator. This letter should be on locality letterhead and be the original (no reproduction). Each locality conducting aerial treatments should submit this letter with their proposal.

For those localities conducting aerial applications in Northern Virginia, the letter should be addressed to the F.A.A. Flight Standards District Office, Washington Dulles Airport. For those localities conducting aerial applications in the Tidewater area, the letter should be addressed to the F.A.A. Flight Standards District Office, Richmond Airport. A statement similar to that below should be the major portion of the letter:

"The County (City) of \_\_\_\_\_ gives authority for aerial applications to be conducted in the county (city) for suppression of the gypsy moth. This authorization applies only to those applications which will occur under the Virginia Department of Agriculture and Consumer Services' Cooperative Gypsy Moth Suppression Program, of which \_\_\_\_\_ (county or city) is a participating locality."

---

Signature

---

Title

**SAMPLE NOTIFICATION LETTER TO BE USED FOR LANDOWNERS  
WITHIN MANDATORY TREATMENT BLOCK**  
(Locality may add additional information if desired)

Dear Property Owner/Resident:

Your County Board of Supervisors is cooperating with the Virginia Department of Agriculture and Consumer Services (VDACS) and the United States Department of Agriculture-U.S. Forest Service in a joint effort to suppress the gypsy moth this spring by (type of treatment) of certain populated and high public-use areas. Treatment areas were selected on the basis of survey information indicating that a serious gypsy moth problem would occur unless treatment is accomplished. Records at the Tax Assessor's Office indicate that all or part of your property is located within one of the areas which qualifies for proposed gypsy moth treatment.

The control strategy in the proposed treatment area will be:

---

Please note that there are no fees charged to you for this treatment. If your property is occupied by a tenant, please provide him/her with a copy of this letter. Open fields will not be treated, and open areas containing a few scattered trees or narrow fence rows may not be treated. A detailed map which outlines the proposed spray boundaries is available for examination in our office.

The treatment is scheduled to occur approximately \_\_\_\_\_ (approximate date) \_\_\_\_\_. Local news media will carry information on the specific dates. Aerial applications will be conducted using \_\_\_ (aircraft) \_\_\_ from daybreak until deteriorating weather conditions cause the operation to cease. On occasion, evening spraying may be done. Only one treatment is normally necessary.

A public meeting to explain the treatment program and answer questions will be held \_\_\_\_\_ (date, time and location) \_\_\_\_\_.

No reply is necessary , this is only to inform you that a treatment will be conducted. Any questions regarding the gypsy moth or this program can be directed to our office at:

---

Sincerely,

---

**SAMPLE NOTIFICATION LETTER TO BE USED FOR LANDOWNERS  
ADJACENT TO TREATMENT BLOCK IN A MANDATORY  
TREATMENT PROGRAM**

**(Locality may add additional information if desired)**

Dear Property Owner/Resident:

Your County Board of Supervisors is cooperating with the Virginia Department of Agriculture and Consumer Services (VDACS) and the United States Department of Agriculture-U.S. Forest Service in a joint effort to suppress the gypsy moth this spring by (type of treatment) of certain populated and high public-use areas. Treatment areas were selected on the basis of survey information indicating that a serious gypsy moth problem would occur unless treatment is accomplished. Your property is not scheduled for treatment, but records at the Tax Assessors Office indicate that all or part of your property is adjacent to an area proposed for gypsy moth treatment and may abut a proposed gypsy moth treatment area.

The control strategy in the proposed treatment area will be:

---

If your property is occupied by a tenant, please provide him/her with a copy of this letter. A detailed map which outlines the proposed spray boundaries and buffer zones is available for examination in our office.

The treatment is scheduled to occur approximately \_\_\_\_\_ (approximate date) . Local news media will carry information on the specific dates. Aerial applications will be conducted using (aircraft) \_\_\_\_\_ from daybreak until deteriorating weather conditions cause the operation to cease. On occasion, evening spraying may be done. Only one treatment is normally necessary.

A public meeting to explain the treatment program and answer questions will be held (date, time, and location) \_\_\_\_\_ .

No reply is necessary, this is only to inform you that a treatment will be conducted. Any questions regarding the gypsy moth or this program can be directed to our office at:

---

Sincerely,

---

**SAMPLE NOTIFICATION LETTER TO BE USED FOR LANDOWNERS  
WITHIN PROPOSED TREATMENT BLOCK IN A VOLUNTARY  
TREATMENT PROGRAM**

**(Locality may add additional information if desired)**

Dear Property Owner/Resident:

Your County Board of Supervisors is cooperating with the Virginia Department of Agriculture and Consumer Services (VDACS) and the United States Department of Agriculture-U.S. Forest Service in a joint effort to suppress the gypsy moth this spring by (type of treatment) of certain populated and high public-use areas. Treatment areas were selected on the basis of survey information indicating that a serious gypsy moth problem would occur unless treatment is accomplished. Records at the Tax Assessors Office indicate that all or part of your property is located within an area proposed for gypsy moth treatment.

The control strategy in the proposed treatment area will be: \_\_\_\_\_

Please note that there are no fees charged to you for this treatment. If your property is occupied by a tenant, please provide him/her with a copy of this letter. Open fields will not be treated, and open areas containing a few scattered trees or narrow fence rows may not be treated. A detailed map which outlines the proposed spray boundaries and buffer zones is available for examination in our office.

The treatment is scheduled to occur approximately     (approximate date)    . Local news media will carry information on the specific dates. Aerial applications will be conducted using     (aircraft)     from daybreak until deteriorating weather conditions cause the operation to cease. On occasion, evening spraying may be done. Only one treatment is normally necessary.

A public meeting to explain the treatment program and answer questions will be held     (date, time, and location)    .

No reply is necessary if you want your property treated. However, if you do not want your property included in the treatment program, you must notify the Office of Plant & Pest Services Program Manager, in writing, describing the exact location of your property. We will then take steps to have your property excluded from the program. Your request for non-participation should be sent to the following address:

**Program Manager, Office of Plant & Pest Services  
c/o Gypsy Moth Coordinator  
(local coordinator's mailing address)**

In order to assure that your request is honored, it must be received at the above address by     (date)    .

Any questions regarding the gypsy moth or this program can be directed to our office at:

\_\_\_\_\_  
Sincerely,  
\_\_\_\_\_

**SAMPLE NOTIFICATION LETTER TO BE USED FOR  
LANDOWNERS ADJACENT TO PROPOSED TREATMENT  
BLOCK IN A VOLUNTARY TREATMENT PROGRAM**  
(Locality may add additional information if desired)

Dear Property Owner/Resident:

Your County Board of Supervisors is cooperating with the Virginia Department of Agriculture and Consumer Services (VDACS) and the United States Department of Agriculture-U.S. Forest Service in a joint effort to suppress the gypsy moth this spring by (type of treatment) of certain populated and high public-use areas. Treatment areas were selected on the basis of survey information indicating that a serious gypsy moth problem would occur unless treatment is accomplished. Your property is not scheduled for treatment, but records at the Tax Assessors Office indicate that all or part of your property is adjacent to an area proposed for gypsy moth treatment and may abut a proposed gypsy moth treatment area.

The control strategy in the proposed treatment area will be: \_\_\_\_\_

If your property is occupied by a tenant, please provide him/her with a copy of this letter. A detailed map which outlines the proposed spray boundaries and buffer zones is available for examination in our office.

The treatment is scheduled to occur approximately \_\_\_\_\_ (approximate date) \_\_\_\_\_. Local news media will carry information on the specific dates. Aerial applications will be conducted using (aircraft) \_\_\_\_\_ from daybreak until deteriorating weather conditions cause the operation to cease. On occasion, evening spraying may be done. Only one treatment is normally necessary.

A public meeting to explain the treatment program and answer questions will be held (date, time, and location) \_\_\_\_\_.

If your property borders a proposed gypsy moth treatment area and you desire a buffer area or non-treatment, you must notify the Office of Plant & Pest Services Program Manager, in writing, describing the exact location of your property. We will then take steps to have your property excluded from the program. Your request for non-participation should be sent to the following address:

**Program Manager, Office of Plant & Pest Services  
c/o Gypsy Moth Coordinator  
(local coordinator's mailing address)**

In order to assure that your request be honored, it must be received at the above address by (date).

Any questions regarding the gypsy moth or this program can be directed to our office at:

\_\_\_\_\_  
Sincerely,  
\_\_\_\_\_

**VIRGINIA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES**

**OFFICE OF PLANT & PEST SERVICES  
REGIONAL OFFICES**

**NORTHERN REGION**

THOMAS FINN, Regional Supervisor, Office of Plant & Pest Services, 234 West Shirley Avenue, Warrenton, Virginia 22186. Telephone : 540/347-6380.

Counties of Responsibility: Arlington, Augusta, Bath, Clarke, Culpeper, Fairfax, Fauquier, Frederick, Greene, Highland, King George, Loudoun, Madison, Orange, Page, Prince William, Rappahannock, Rockbridge, Rockingham, Shenandoah, Spotsylvania, Stafford and Warren.

Independent Cities of Responsibility: Alexandria, Buena Vista, Fairfax City, Falls Church, Fredericksburg, Harrisonburg, Lexington, Manassas, Manassas Park, Staunton, Waynesboro, and Winchester.

**CENTRAL REGION**

DAVID P. INNES, Regional Supervisor, Office of Plant & Pest Services, P.O. Box 1163, Richmond, Virginia 23218. Telephone: 804/786-8528, 804/786-0453.

Counties of Responsibility: Albemarle, Amelia, Amherst, Appomattox, Buckingham, Caroline, Charles City, Chesterfield, Cumberland, Dinwiddie, Essex, Fluvanna, Gloucester, Goochland, Hanover, Henrico, King and Queen, King William, Lancaster, Louisa, Lunenburg, Mathews, Middlesex, Nelson, New Kent, Northumberland, Nottoway, Powhatan, Prince Edward, Prince George, Richmond, and Westmoreland.

Independent Cities of Responsibility: Charlottesville, Colonial Heights, Hopewell, Petersburg, and Richmond.

**SOUTHEASTERN REGION**

BILL WHITEHEAD, Regional Supervisor, Office of Plant & Pest Services, 1100 Armory Drive Apt. 120, Franklin, Virginia 23851. Telephone: 757/562-6637.

Counties of Responsibility: Accomack, Brunswick, Greensville, Isle of Wight, James City, Mecklenburg, Northampton, Southampton, Surry, Sussex and York.

Independent Cities of Responsibility: Chesapeake, Emporia, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg.

## **SOUTHWESTERN REGION**

JERRY B. CHASE, Regional Supervisor, Office of Plant & Pest Services, 195 Cassell Road, Wytheville, Virginia 24382. Telephone: 540/228-5501.

Counties of Responsibility: Allegheny, Bland, Botetourt, Buchanan, Campbell, Carroll, Charlotte, Dickenson, Floyd, Franklin, Giles, Grayson, Halifax, Henry, Lee, Montgomery, Patrick, Pittsylvania, Pulaski, Roanoke, Rockbridge, Russell, Scott, Smyth, Tazewell, Washington, Wise and Wythe.

Independent Cities of Responsibility: Bedford, Bristol, Clifton Forge, Danville, Galax, Lynchburg, Martinsville, Norton, Radford, Roanoke, Salem, and South Boston.