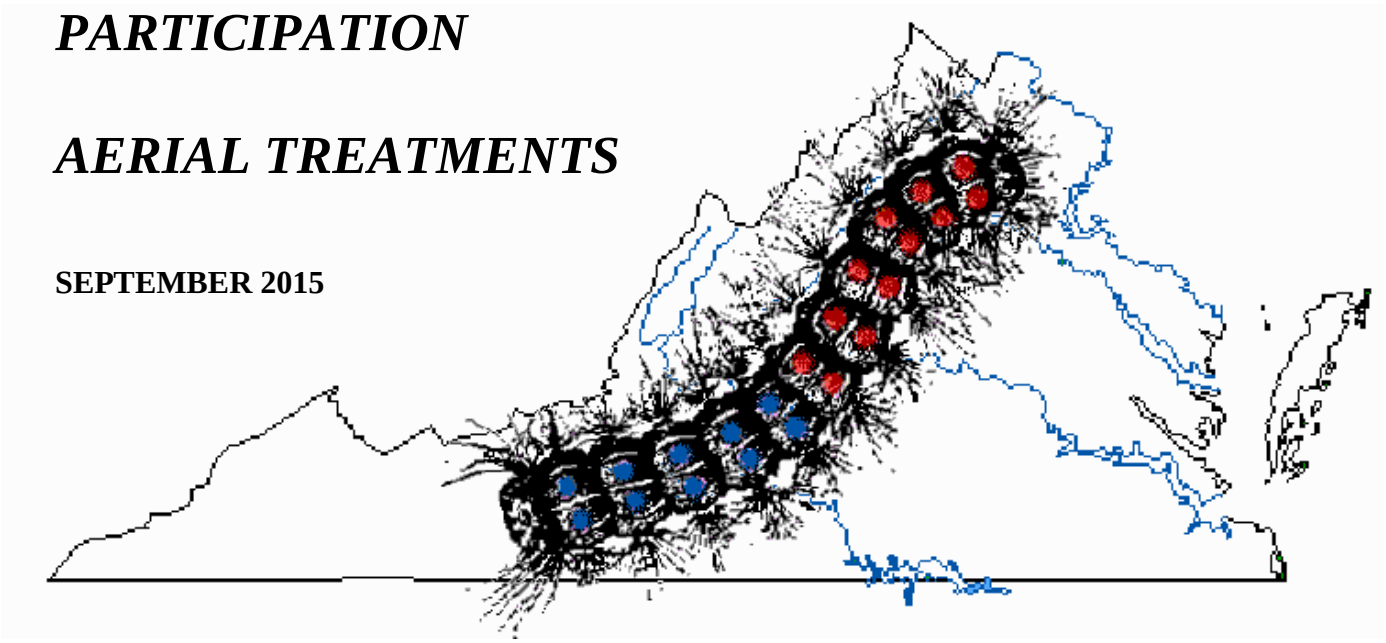
VIRGINIA COOPERATIVE GYPSY MOTH SUPPRESSION PROGRAM

2016 GUIDELINES FOR *PARTICIPATION*

AERIAL TREATMENTS

SEPTEMBER 2015



VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

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INTRODUCTION

The purpose of the Virginia Cooperative Gypsy Moth Suppression Program (VCGMSP) is to protect contiguously forested areas from serious gypsy moth damage. 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.

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. The locality shall determine the size of the buffer area that surrounds the treatment block and/or non-participant.

6. Cost-sharing described herein is subject to the availability of Federal funding.

7. Cooperative Agreements with individual localities will be executed involving funding transactions and other pertinent provisions.

8. VDACS will provide technical assistance to enable the Cooperator to meet all provisions of these Guidelines.

9. Aerial treatments are the only expenditures which are eligible for federal cost share.

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. 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 30 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 three (3) sets of a U.S. Geologic Survey 7.5 minute 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 must include points where egg mass surveys were conducted. Information for each proposed aerial treatment block must be entered on the **Aerial Treatment Proposal Form**. This information is necessary to properly evaluate the request as outlined in the program guidelines. Additional maps may be required of those localities in FAA's restricted flight areas.

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 area meetings, required once funding approval by VDACS is received by the locality.

5. Notify VDACS by January 15 of the size of the buffer that will surround non-participant's property and spray blocks.

6. Determine and notify VDACS by January 15 of the insecticides to be used in your locality. This should be documented on a block by block basis. Although insecticide choice must be included on the submitted **Aerial Treatment Proposal Form**, any changes to these submitted forms in regard to the insecticide used, must be submitted to the VDACS Main Office by January 15. Changes in the insecticide choice will be accepted after this date only if there is a possible negative impact, from the 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).

7. Upon notification that VDACS has accepted the treatment proposals, (late January or early February), property owners within the aerial treatment areas and buffer zones, 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. Landowners/residents who do not wish to have suppression treatments conducted on their property must notify the Program Manager, VDACS/Office of Plant Industry 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. Since this is a voluntary program, property owners/tenants requesting non-participation will be suitably marked to permit their exclusion. There may be instances when 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.

8. Hold a public meeting to explain the program and suppression strategy selected. This meeting should be held in late winter.

9. 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: communications equipment and ground personnel to assist in administering the daily treatment operations. Ground personnel include one representative present at the loading zone at all times during spray operations and one or more representative(s) in the field collecting weather data. Ground personnel at loading zone must complete **On-Site Monitoring Form**. On-Site Monitoring forms must be mailed to VDACS' Main Office by June 1. **If ground personnel are not present, spray operations will be halted.**

10. Execute a Cooperative Agreement with VDACS in which the local government agrees to support the suppression program as outlined and to pay their share of the suppression program costs.

11. Pay locality's billed portion of aerial application costs within 30 days of receipt of invoice for work completed.

12. Complete **Post-Treatment Forms** for each spray block and return to VDACS' Main Office by September 30, 2016.

13. It is mutually understood that approval for this suppression project is contingent upon available appropriations from the government agencies (state and federal)**.**

FUNDING

ITEMS ELIGIBLE FOR COST SHARE REIMBURSEMENT

The contractual service for a single aerial application of treatment insecticides is the only item eligible for cost share reimbursement. The Cost share formula for the aerial treatments is 50% Federal/50% Locality and is contingent upon federal funding. If USDA-Forest Service funding will not adequately cover the federal share (50%) of the aerial treatment costs, locality will be responsible for up to 100% of aerial treatment costs. Reimbursement to localities will be determined by total amount of USDA-Forest Service funding which will be allocated equally among participating localities on a per acre basis. (Total amount of funding will be divided by total number of qualifying acres to determine per acre reimbursement. Each participating locality will receive the same per acre cost share reimbursement).

BILLING STATEMENT

VDACS will send a billing statement to each participating locality by June 1, 2016, or upon receipt of invoice from aerial applicator for work completed, 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' Finance Office within 30 days of receipt of billing statement.

ASSESSING THE NEED FOR TREATMENT

There are several survey tools that should be used to determine which areas have a gypsy moth problem that needs 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 by the coordinator saves a lot of time and expense by eliminating areas that 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, zones around threatened communities, and individual permanent or seasonal dwellings.
- **Uninhabited or sparsely inhabited areas** - includes uninhabited and undeveloped forested areas that do not qualify under another category.

PRIVATE LANDS EXCLUDED

The following areas will <u>not</u> 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.

- The property of non-participants in the aerial 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 any areas containing trees planted primarily for shade or ornamental purposes are not considered forested unless they meet the definition of a forest (See page 11 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;
   - Less than 250 egg masses per acre

2. Moderate Problem - qualifying area:
   - Mostly favored and moderately favored host trees;
   - 250 - 1,000 medium or large egg masses per acre

3. Severe Problem - qualifying area:
   - Mostly favored and moderately favored host trees;
   - Increasing gypsy moth population;
   - More than 1,000 large, healthy egg masses per acre

BIOLOGICAL ASSESSMENT

A simple count of egg masses in an area is not a reliable indicator of the potential problem. There may be insignificant defoliation with over 1,000 egg masses per acre or heavy defoliation with fewer than 500. Other important indicators include egg mass age, egg mass size, 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 a more 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 **Aerial Treatment Proposal Form**. Normally, healthy building or static populations will have egg masses that range in size from a nickel to a quarter or larger. As a general rule, the larger the egg mass - the healthier the population.

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 an infested, 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. All proposed aerial treatment areas must have at least 50% moderately or highly susceptible hardwood crown cover.

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.

CLASSIFICATION OF TREATMENT AREAS

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. Treatment areas must qualify based on egg mass densities in the categories listed below. Some areas may receive a "no treatment" recommendation if conditions do not warrant treatment based on the factors specified in the categories.

VDACS will compile the total aerial treatment acreage and compare this figure with available funding to determine cost share reimbursement.

LOW LEVEL INFESTATIONS
VDACS will not cost-share on aerial treatments on areas that have a light infestation.

MODERATE TO SEVERE LEVEL INFESTATIONS
Under the moderate to severe 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 must be indicated under **Block Category** on the **Aerial Treatment Proposal Form**. Enter the appropriate letter for each "Area Type" under **Block Category**.

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

Category B - 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.

Category C - 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.

Category D - Sparsely inhabited, uninhabited and undeveloped forested areas. The proposed treatment area must have at least 750 egg masses per acre. VDACS recommends treatment of uninhabited areas be done after consultation with a forest management specialist.

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.

CONTRACTS
VDACS will attempt to group localities in the treatment contracts (IFB) that will result in the lowest treatment cost for all localities combined. This may result in single-locality contracts in areas where a locality is not adjacent to another participating locality. Treatment costs for the single-locality contracts may be significantly higher than contracts containing multiple localities.

BUFFERS
It is up to each locality to determine buffer sizes around both non-participants and the blocks themselves. These buffers must be determined and submitted in writing by January 15.

A buffer zone is required around all naturally occurring open bodies of water that are in or near Dimilin treatment blocks. U.S. Fish & Wildlife Service will determine the size of this buffer zone. *A Buffer zone of at least 200 feet is required around man-made ponds.* No Dimilin will be applied within this buffer area. 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 man-made impoundments, swamps, bogs, streams, or rivers.

Dimilin spray blocks that contain open water will have a no-spray buffer zone. The buffer areas around open water in Dimilin spray blocks will not be considered as separate spray blocks for the purpose of treating these buffer areas with *Btk*. Treatment will be allowed up to the water's edge for *Btk* spray blocks.

PREPARING & SUBMITTING THE PROPOSAL

The Cooperator's spray program proposal must be submitted to the appropriate regional VDACS/Office of Plant Industry Services on or before November 30, 2015 (See Appendix F 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 supervisor 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
- block category (see Area Types under Moderate to Severe Level Infestations, page 12)
- number of acres proposed
- egg masses/acre
- number of dwellings in block
- number of survey sites
- insecticide choice

TOPOGRAPHIC MAPS

All proposals must include three (3) 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. Clearly write the USGS quad code in the margin of the map. Quad codes can be found in Appendix I, page 42. 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. Proposed spray blocks can be sent to VDACS as Shapefiles (*shp), however topographic maps must still accompany the proposal. For shapefiles to be used, map datum and coordinate system information must be included.

MAP UPDATING

When making your field surveys, take along a green pencil, red marker or 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. 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. VDACS will use aerial photographs and/or field surveys to determine areas with acceptable tree coverage; open areas within the spray block will also be deleted from the block.

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.

Powerlines and towers, located both within and outside of spray blocks, must be designated on the topographic maps with a red marker or pencil. Powerlines and towers must be labeled.

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 dot (do not use an “o” or “x”) where you made each of your egg mass counts. Indicate the egg mass count (actual 40th acre count) at each survey location by penciling in the count next to the dot. 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. Avoid making aerial treatment blocks triangular to circular in shape. Avoid block corners with angles of less than 90 degrees. Spray blocks may be redrawn by VDACS to eliminate open areas within the block and/or to enable spray aircraft to fly in a more efficient manner.

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, stream, or property boundaries should be avoided.

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 hide map details such as secondary roads with boundary lines.

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.

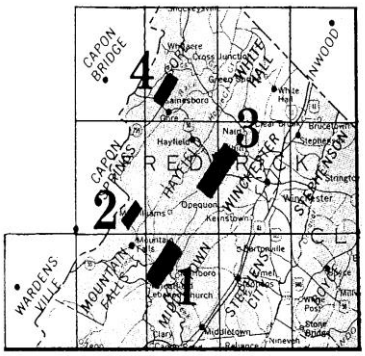
This may also be a good time to begin looking for emergency landing areas for aircraft, which will be needed for the Federal Aviation Administration's required Congested Area Plan. Although emergency landing areas do not have to be designated on the maps submitted to VDACS, you should make note of possible 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). 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 or the Virginia Department of Mines Minerals and Energy.

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 example on this 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.



For blocks located on more than one quad, assign the number from the map that contains the majority of the block. 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 that 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 **Aerial Treatment Proposal Form**.

CALCULATING ACREAGE

The more accurate and preferred method of calculating acreage is to use GIS (Geographic Information Systems) software to create shape (*shp) files (digitized acres). Treatment acreage can also be calculated from topographic maps with the use of a dot grid or planimeter. Dot grids are inexpensive and readily available from vendors specializing in forestry or engineering supplies. **The final acreage amounts for each spray block will be determined by VDACS using digitized acres**.

Record the acreage calculations for a block in black pencil within the block boundaries on the topo map. Also enter this calculation under **Forested Acres** on the **Aerial Treatment Proposal Form**.

Contact the Office of Plant Industry Services for additional help in drawing spray blocks and for examples of properly drawn spray blocks. The Office of Plant Industry 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 Industry 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.

Note: If any changes are made to a treatment block, a new **Aerial Treatment Proposal Form** should be submitted to the Office of Plant Industry 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.

PESTICIDE CERTIFICATION

A current copy of the Pesticide Applicators Permit (category 2, 9 or 10) must 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 the locality must be submitted with the **Aerial Treatment Proposal Form**. 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 Appendix D. The appropriate address for this letter can be found in Appendix E.

AERIAL TREATMENT PROPOSAL FORM

The following is information pertinent to the proper completion of the **Aerial Treatment Proposal Form.** These forms are available from the Office of Plant Industry Services main office in Richmond, or from regional offices located throughout the state (see Appendix F for addresses of regional offices). Use original (watermark) **Aerial Treatment Proposal Forms** only. Duplicate **Aerial Treatment Proposal Forms** will not be accepted.

Each spray block must be entered separately on the **Aerial Treatment Proposal Form**. Four spray blocks can be entered on the same form.

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, a new topo map showing the redrawn block must be submitted. Fill in all required information on the form as explained below. Make sure that all sections for each block are completed.

Locality – Enter the name of your county or city.

Year – Enter the treatment year. (Example: for proposals made in November of 2015, the year is 2016).

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. If block is located in more than one quad, assign block number from the quad that contains the majority of block.

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

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.*

No. Survey Plots - Indicate the number of plots within the spray block. Minimum number of survey sites for various block sizes is given in Appendix A: Egg Mass Survey Procedures.

Block Category - Enter A, B, C, or D for the spray block category based on egg masses per acre and number of inhabitants in the spray block. Select and enter only one category which best describes the situation for the entire proposed spray block. See **Classification of Treatment Areas**, pages 12 - 13 for description of spray block categories.

Insecticide - Insecticide proposed at time of form submission. Choose Dimilin, Bt, or Gypcheck. Per block insecticide changes will be accepted until January 15. No changes will be accepted after this date.

If Bt: BIU/Acre – Enter either 25 or 38 BIU/acre (Note: BIU = CLU. The *Btk* label will refer to application rate in CLU's). If Dimilin is selected insecticide, leave this blank.

Quad(s) - Enter the Quad Code for the quad where the treatment block is located. Use the Quad Name found on the USGS topographic map and cross reference with the Quad Code in Appendix I, page 42. If the block is located in more than one quad, enter the quad where the majority of the block is located first, then list other quad codes. A maximum of three quads can be listed. If the spray block is in more than three quads, enter the remaining quad code in the **Comments** section

Percent Cover - Enter the percentage of the crown area, when viewed from above, that is covered.

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

Open Water In Block (Y/N) – "Y" if Yes, "N" if No, "UNK" if unknown. Areas of water are considered in the proposed treatment block if there is no canopy cover over the water during treatment time. Water is considered in the block if it is within a 500 foot buffer area around the block. These should also be designated on the submitted map outlining the treatment block. If not, mark in with blue pencil or fine tip pen.

Total No. Dwellings – Enter the total of both seasonal and permanent dwellings.

No. of Schools in Block – Self-explanatory.

No. of Churches in Block – Self-explanatory.

Previous Treatment: This pertains to treatments in the previous year **only**.

Block Treated in 2015 (Y/N) – "Y" if Yes, "N" if No

Number of Acres – List number of acres in this block that were treated in 2015.

Comments - Use this section for additional information, which may prove useful for further evaluation of the block.

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 January 1, 2016 to the localities who requested participation in the fall. It must be signed and returned to the Richmond office no later than February 1, 2016. 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. Changes may be made to the example cooperative agreement below, before the final agreement is mailed to localities

EXAMPLE COOPERATIVE AGREEMENT:

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

A. The Department agrees to procure the services listed on the proposal forms submitted by the Locality and approved by the Department.

B. The Locality shall reimburse the Department for the costs of requested services and/or supplies. Cost-share reimbursement will be based on amount of funding from USDA Forest Service and calculated on a per acre basis. (Cost share will be determined by total amount of funding from USDA-Forest Service and total acreage proposed by all participating localities).

   Reimbursement by the Locality to the Department shall be as follows:

   - If USDA Forest Service funds are available, Locality will reimburse the Department for 50% of the costs of requested services and/or supplies.
   - If USDA Forest Service funds are not available or do not adequate cover treatment costs on a 50/50 matching basis, Locality will reimburse the Department for up to 100% of the costs of requested services and/or supplies.
   - Localities that use *Bacillus thuringienses (Btk)* at 38 CLU/acre will be responsible for reimbursing the Department for 100% of cost differential between *Btk* applied at 25.3 CLU/acre and *Btk* applied at 38 CLU/acre.

C. A billing statement listing actual cost of services will be sent to the Locality by June 1, 2016, or upon receipt of invoice by VDACS from aerial applicator for work completed. Payment on the billing statement is due from the Locality within 30 days upon receipt of the billing statement. Payment must be made directly to VDACS at P.O. Box 526, Richmond, Virginia 23218.

D. Materials supplied by the Department will be delivered in a timely manner on a date determined by both parties.

E. Proposed treatment area is estimated to be xxx acres. Both parties must agree, in writing, to changes in estimated treatment acreage of more than 20%.

F. Both parties agree to VDACS and Locality responsibilities as set forth in the *Virginia Cooperative Gypsy Moth Suppression Program, 2016 Guidelines for Participation, Aerial Treatments* published by the Virginia Department of Agriculture and Consumer Services and dated September 2015.

This Agreement shall be effective immediately after being 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. The substantive terms are appropriate and sufficient funds have been obligated for its performance.

Reviewed and Approved By:

_____
Program Manager (Date)
Office of Plant Industry Services

_____
Director (Date)
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 in writing of the proposed treatment. 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 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 February 15. A subsequent four-week period of time is needed to allow for non-participant response, 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 can 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 must contain instructions for property owners to have their property deleted from spraying. If the locality allows a buffer zone, a letter must be sent to inform the owner that their property may abut the treatment area and contain instructions to request a buffer. In the case of rental property, the contact letter must also contain a request that the property owner contact the occupant of the property, to inform the tenant of the proposed treatment. All notification letters will be reviewed by the VDACS/Office of Plant Industry 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 Industry Services' Main Office.

SCHOOL NOTIFICATION

Schools located in or adjacent to spray blocks must be notified prior to treatment. Schools requesting non-participation will be deleted from the spray block.

REQUESTING NON-PARTICIPATION

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 Industry 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

March 15, 2016 cut-off date for non-participant letters to be received from the localities. Each locality conducting aerial treatments should mail notification letters to the landowners well enough in advance to meet the March 15 deadline. Copies of all letters from landowners requesting non-participation should be sent to the VDACS/Office of Plant Industry Services' Main 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. Localities that allow non-participation after the March 15 deadline may be subject to 100% of application costs on the acreage of those non-participants.

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, type of program (voluntary), and instructions for property owners who wish to have their property deleted from treatment. 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 a minimum of seven (7) days before the March 15 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 Main Office one week after the cutoff date for non-participation.

It is recommended that the Coordinator visit non-participants. 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 14. This will allow time for input from the public before final decisions on insecticides and buffer zones 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.

The Office of Plant Industry Services Regional Office must be notified in writing at least two weeks prior to scoping session/open house meetings. Notifications to OPIS shall include date, time and location of meeting.

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 Industry Services, in care of the local coordinator. The request for comments ad should also state that the cut-off for comments is December 14. A copy of this ad must be sent to the VDACS/Office of Plant Industry Services' Main 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 Industry Services' Main Office immediately after the cut-off date. Those comment letters received before December 14 will be addressed in the 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 and buffer zones has been made. This meeting should be held in late winter, but no later than March 1. This meeting will be held to explain the suppression strategies to be implemented, and also to explain the procedure for requesting non-participation.

The Office of Plant Industry Services Regional Office must be notified in writing at least two weeks prior to public meetings. Notifications to OPIS shall include date, time and location of meeting.

This public meeting may be advertised in the notification letters distributed. The cut-off date for landowners/tenants to request non-participation must be stated in the notification letter and 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 must also contact appropriate local hospitals, emergency centers, fire stations, police departments, emergency rescue squads, and emergency services coordinator to inform them of the spray activities to be conducted (including giving them dates, areas to be 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. This should be done at least one month before treatments are to occur. If any changes are made, these agencies should be updated.

APPENDICES

APPENDIX A: EGG MASS SURVEY PROCEDURES

EGG MASS SURVEY

The local Coordinator must use the 1/40th acre fixed plot as the basic sample unit for determining the number of egg masses in potential aerial treatment blocks.

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 is dependent upon the size of the proposed spray block, species mix uniformity, topography, and insect population density and uniformity. The following are the minimum numbers of plots necessary based on block size.

Block Size (Acres)	Minimum No. of Sample Plots
15-50	3
51-100	4
101-200	6
201-300	7
301-400	8

For blocks over 400 acres, add 1 plot for each additional 50 acres.

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

a. The minimum number of plots indicate a wide, inconsistent range of egg mass levels.

b. The per acre counts are low, ranging from 40-280.

Location of Plots: 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.

Distribution of Plots: Sample plots must be evenly distributed throughout the proposed block. Coordinators must use the Egg Mass Survey Grid (see Attachment M) to ensure survey plots are evenly distributed. Align the borders of the Egg Mass Survey Grid along two borders of the proposed spray block. Each square that is completely within the boundaries of the proposed spray block must contain at least one survey point. Squares that are partially within the boundaries of the spray block will require a survey point if 75% or more of that square is in the

proposed spray block; if less than 75% of that square is in the proposed spray block, no survey point is required. It will be at the sole discretion of VDACS in determining those grid blocks that exceed the 75% limit and therefore require the survey point.

Proposed blocks that do not contain the required survey points in every square may be deleted or redrawn to exclude those areas that contain no survey points.

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.

Conduct Post Treatment evaluations of 2015 treatment blocks.

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

November 1-30

Placement of advertisement in at least one local newspaper requesting comments on the locality's suppression program. Copy of advertisement must be sent to VDACS/Office of Plant Industry Services' Main Office.

November 30

Treatment proposal deadline. All **Aerial Treatment Proposals Forms** must be sent to the appropriate Regional Office of the Office of Plant Industry Services. The addresses of the Regional Offices and their assigned counties of responsibility are listed in the Appendix F. Proposals must include properly completed **Aerial Treatment Proposal Forms** for each proposed treatment area, USGS 7.5 minute topographic maps with the proposed aerial treatment areas, cover letter, spray block list, copy of pesticide certification, and congested area authorization letter.

December 14

Fall scoping sessions/open houses completed.

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

January 1

Cooperative Agreements sent out to localities by VDACS.

January 15

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

January 1 thru March 1

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

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

January 1 thru March 1 (cont'd)

Two copies of notification letter sent to VDACS/Office of Plant Industry Services Main Office.

February 1

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

By March 1

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

By March 8

Legal notices published in local newspaper by VDACS at least 7 days prior to the March 15 cut-off date for non-participation request.

March 15

Deadline for request for non-participation.

March 22

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

May-June

Aerial Treatment season.

June

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.

On-Site Monitoring Forms must be completed and mailed to VDACS' Main Office.

June-July

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

September 30

Post-Treatment Forms for all 2016 spray blocks must be completed and returned to VDACS' Main Office.

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 3, 2015	Saturday, November 4, 2015
Scoping Meeting	Gypsy Moth Open House
Metropolis High School	Hobokin Fire Station
1613 Tree Road	222 Fire Road
Metropolis, Virginia	Hobokin, Virginia
8:00 p.m. - 10:00 p.m.	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 3, 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 14, 2015 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 Industry Services
c/o Metropolis County Gypsy Moth Office
114 Main Street, Room 610
Metropolis, Virginia 22801

Comments received by December 14 will be addressed in the 2016 Gypsy Moth Suppression Environmental Assessment.

For further information concerning the meeting, call the Metropolis County Gypsy Moth Office at (555) 555-5555.

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 must submit this letter to VDACS with their proposal. Do not send this letter directly to the FAA.**

For those localities conducting aerial applications in Northern Virginia, the letter should be addressed to the FAA Flight Standards District Office, Washington Dulles Airport. For those localities conducting aerial applications in the Tidewater and central Virginia area, the letter should be addressed to the FAA Flight Standards District Office, Richmond Airport. Localities in southwest Virginia should send their letters to FAA Flight Standards District Office in Charleston, WV. For a complete listing of localities and their FAA Flight Standards District Office, see Appendix E, page 34. **Congested area letters should be submitted to VDACS' Regional Offices with the proposal (these letters are not to be mailed directly to the FAA).** 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 PROPOSED 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 - 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: _____

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). 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 Industry 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 Industry Services
c/o Gypsy Moth Coordinator
(local coordinator's mailing address)

To ensure 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

(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 - Forest Service in a joint effort to suppress the gypsy moth 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)_____. 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 Industry 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 Industry Services
c/o Gypsy Moth Coordinator
(local coordinator's mailing address)

To ensure 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,

_____

APPENDIX E: FAA FLIGHT STANDARDS DISTRICT OFFICES

Determine the correct FAA office for the Congested Area Flight Plan letter by using the list of localities below. This letter should be sent to VDACS, do not mail directly to the FAA.

Counties and Cities listed below are located in the Washington Dulles Flight Standards District Office (FSDO) area. Use the address below for the Congested Area Flight Plan letter.

County:

Arlington	Clarke	Culpeper	Fairfax	Fauquier	Frederick
Greene	Loudoun	Madison	Page	Prince William	Rappahannock
Rockingham	Shenandoah	Stafford	Warren		

City:

Alexandria	Fairfax	Falls Church	Harrisonburg	Manassas Park	Manassas
Winchester					

Washington (Dulles) Flight District Standards Office
13873 Park Center Road
Suite 475
Herndon, VA 20171

Counties and Cities listed below are located in the Richmond Flight Standards District Office area. Use the address below for the Congested Area Flight Plan letter.

County:

Accomack	Albemarle	Alleghany	Amelia	Amherst	Appomattox
Augusta	Bath	Bedford	Botetourt	Brunswick	Buckingham
Campbell	Caroline	Charles City	Charlotte	Chesterfield	Craig
Cumberland	Dinwiddie	Essex	Floyd	Fluvanna	Franklin
Gloucester	Goochland	Greensville	Halifax	Hanover	Henrico
Henry	Highland	Isle of Wight	James City	King & Queen	King George
King William	Lancaster	Louisa	Lunenburg	Mathews	Mecklenburg
Middlesex	Montgomery	Nelson	New Kent	Northampton	Northumberland
Nottoway	Orange	Pittsylvania	Powhatan	Prince Edward	Prince George
Richmond	Roanoke	Rockbridge	Southampton	Spotsylvania	Surry
Sussex	Westmoreland	York			

City:

Bedford	Buena Vista	Charlottesville	Chesapeake	Colonial Heights	Covington
Danville	Emporia	Franklin	Fredericksburg	Hampton	Hopewell
Lexington	Lynchburg	Newport News	Norfolk	Petersburg	Poquoson
Portsmouth	Radford	Richmond	Roanoke	Salem	South Boston
Staunton	Suffolk	Virginia Beach	Waynesboro	Williamsburg	

Richmond Flight Standards District Office
5707 Huntsman Road
Suite 100
Richmond International Airport
Richmond, VA 23250-2415

Counties listed below are located in the Charleston Flight Standards District Office area. Use the address below for the Congested Area Flight Plan letter.

Bland	Giles	Pulaski	Tazewell

Yeager Airport
301 Eagle Mountain Road, Room 144
Charleston, WV 25311-1093

APPENDIX F: VDACS REGIONAL OFFICES

VIRGINIA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES

OFFICE OF PLANT INDUSTRY SERVICES
REGIONAL OFFICES

MAIN OFFICE

KEITH TIGNOR, Gypsy Moth Program Coordinator, Office of Plant Industry Services, P. O. Box 1163, Richmond, VA 23218. Telephone 804/786-3515, Fax 804/371-7793.

NORTHERN REGION

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

Counties of Responsibility: Albemarle, Arlington, Augusta, Bath, Buckingham, Clarke, Culpeper, Essex, Fairfax, Fauquier, Fluvanna, Frederick, Greene, Highland, King George, Lancaster, Loudoun, Louisa, Madison, Middlesex, Nelson, Northumberland, Orange, Page, Prince William, Rappahannock, Richmond, Rockbridge, Rockingham, Shenandoah, Spotsylvania, Stafford Warren, and Westmoreland.

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

SOUTHEAST REGION

GINA GOODWYN, Regional Supervisor, VDACS - Office of Plant Industry Services, 34591 General Mahone Blvd., Ivor, VA 23866. Telephone: 757/859-6590.

Counties of Responsibility: Accomack, Brunswick, Caroline, Charles City, Chesterfield, Dinwiddie, Gloucester, Greensville, Hanover, Henrico, Isle of Wight, James City, King and Queen, King William, Mathews, Mecklenburg, New Kent, Northampton, Prince George, Southampton, Surry, Sussex and York.

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

SOUTHWEST REGION

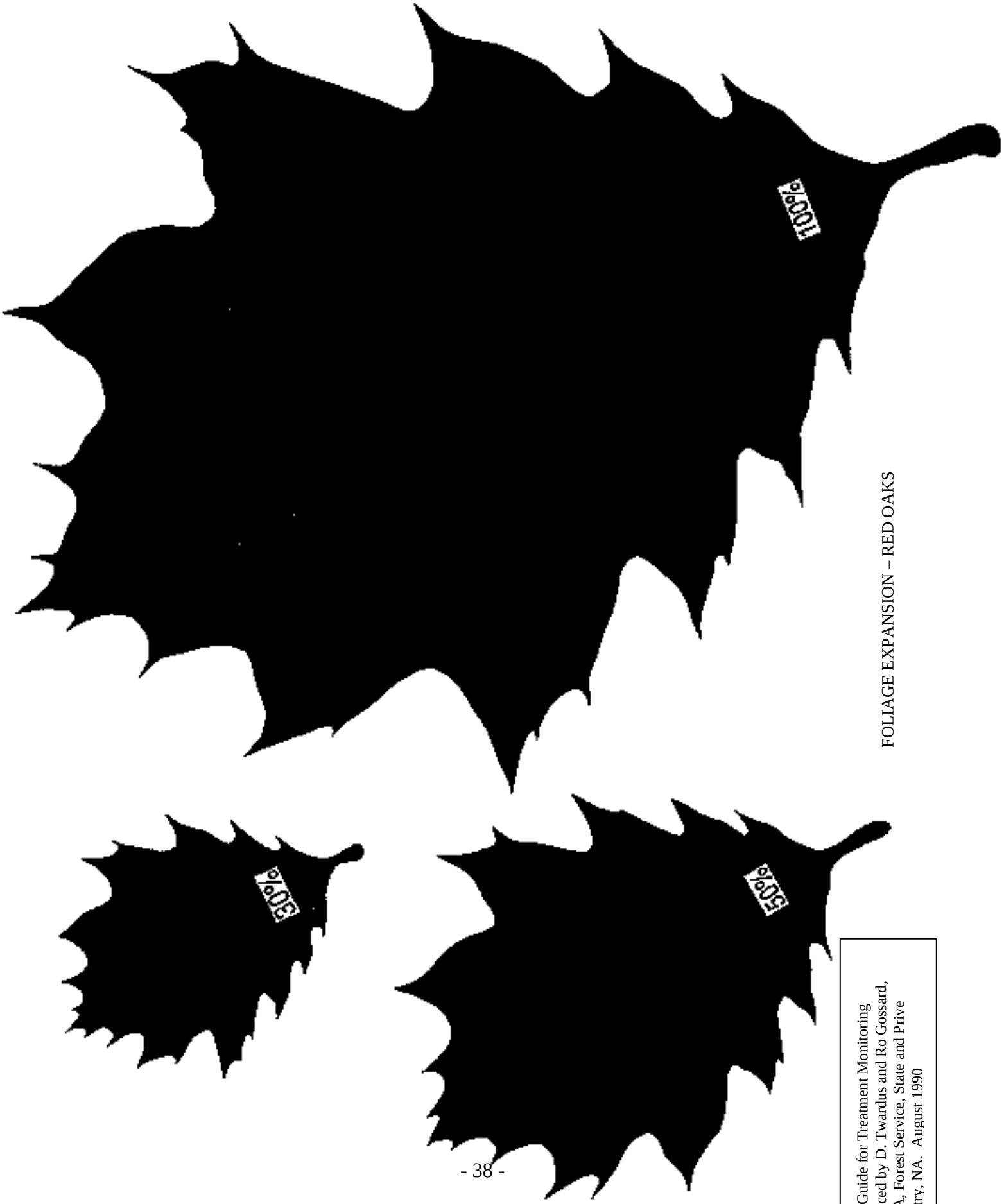
ED BURLETT, Regional Supervisor, Office of Plant Industry Services, 250 Cassell Road, Wytheville, Virginia 24382. Telephone: 276/228-5501.

Counties of Responsibility: Allegheny, Amelia, Amherst, Appomattox, Bedford, Bland, Botetourt, Buchanan, Campbell, Carroll, Charlotte, Craig, Cumberland, Dickenson, Floyd, Franklin, Giles, Goochland, Grayson, Halifax, Henry, Lee, Lunenburg, Montgomery, Nottoway, Patrick, Pittsylvania, Powhatan, Prince Edward, Pulaski, Roanoke, Russell, Scott, Smyth, Tazewell, Washington, Wise and Wythe.

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

NOTES

APPENDIX G: FIELD GUIDE FOR TREATMENT MONITORING



FOLIAGE EXPANSION – RED OAKS

Field Guide for Treatment Monitoring produced by D. Twardus and Ro Gossard, USDA, Forest Service, State and Prive Forestry, NA. August 1990

SIMPLIFIED BEAUFORT WINDSPEED SCALE

Wind Direction	Visible Sign	Approximate mph
Calm	Smoke Rises vertically	0 – ½
Light air	Direction is shown by smoke drift; barely moves tree leaves	1 - 3
Light breeze	Leaves rustle, wind felt on face; small twigs move	4 - 7
Gentle breeze	Leaves and small twigs in constant motion; blows up dry leaves from ground	8 - 12
Moderate breeze	Small branches move; raises dust and loose paper	13 - 18
Fresh breeze	Large branches and small trees in leaf begin to sway	19 - 24

SPRAY DROPLET SIZES

Diameters:

100 Micron
200 Micron
500 Micron

20 Drops/CM^2
(200 Microns)

LARVAL INSTARS

1st instar caterpillar fits within this line, is black, and has a head capsule this size

2nd instar caterpillar fits within this line, has a black body with yellow marks, and has a black head capsule this size

3rd instar caterpillar fits within this line, has a black body with orange marks, and has a black head capsule this size

4th instar caterpillar fits within this line, has a body with 5 airs of blue spots followed by 6 pairs of red pots, and has a head capsule that is yellow mottled with black marks and

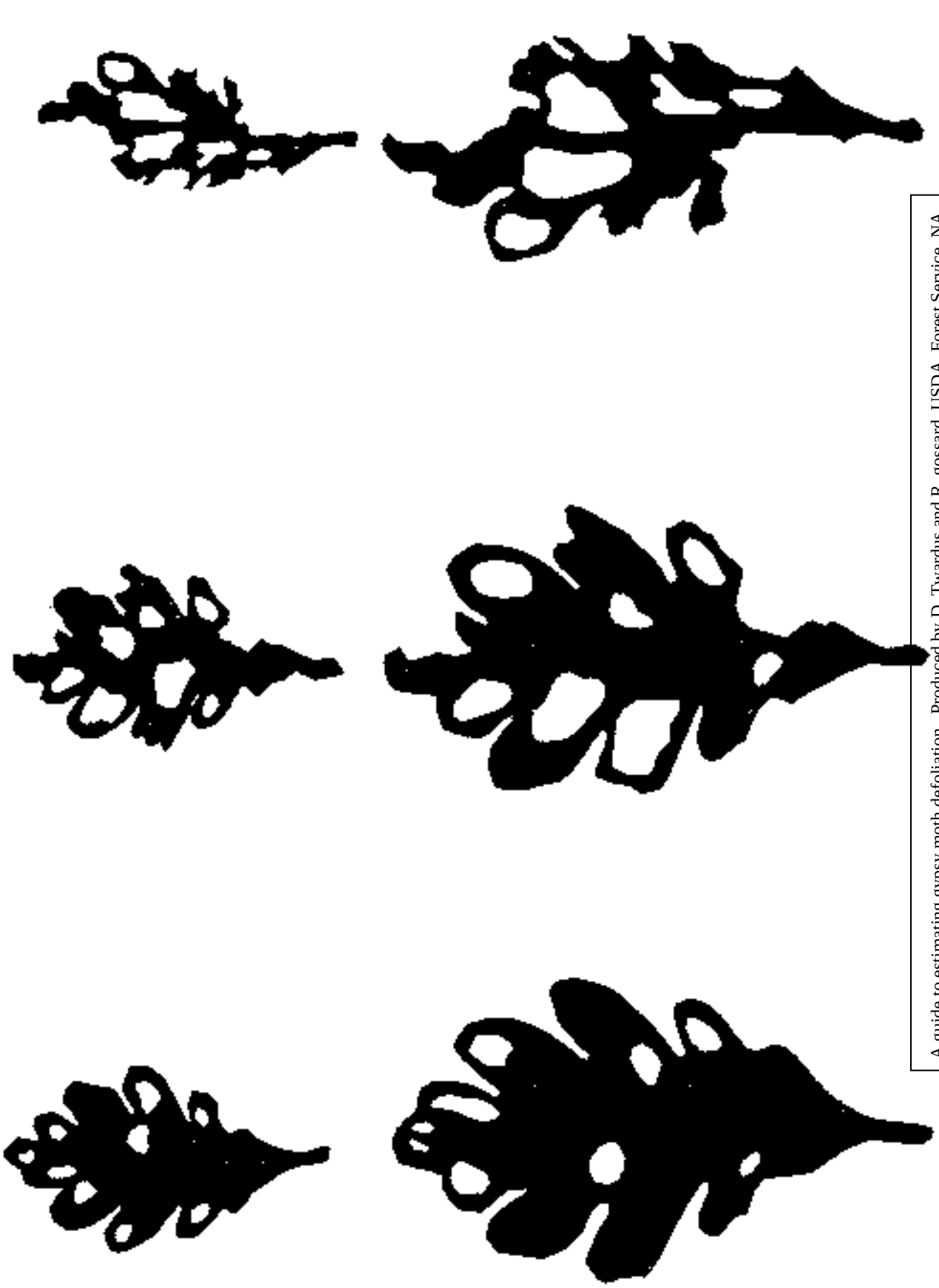
APPENDIX H: GUIDE TO ESTIMATING GYPSY MOTH DEFOLIATION

WHITE OAK LEAVES

10% DEFOLIATION

30% DEFOLIATION

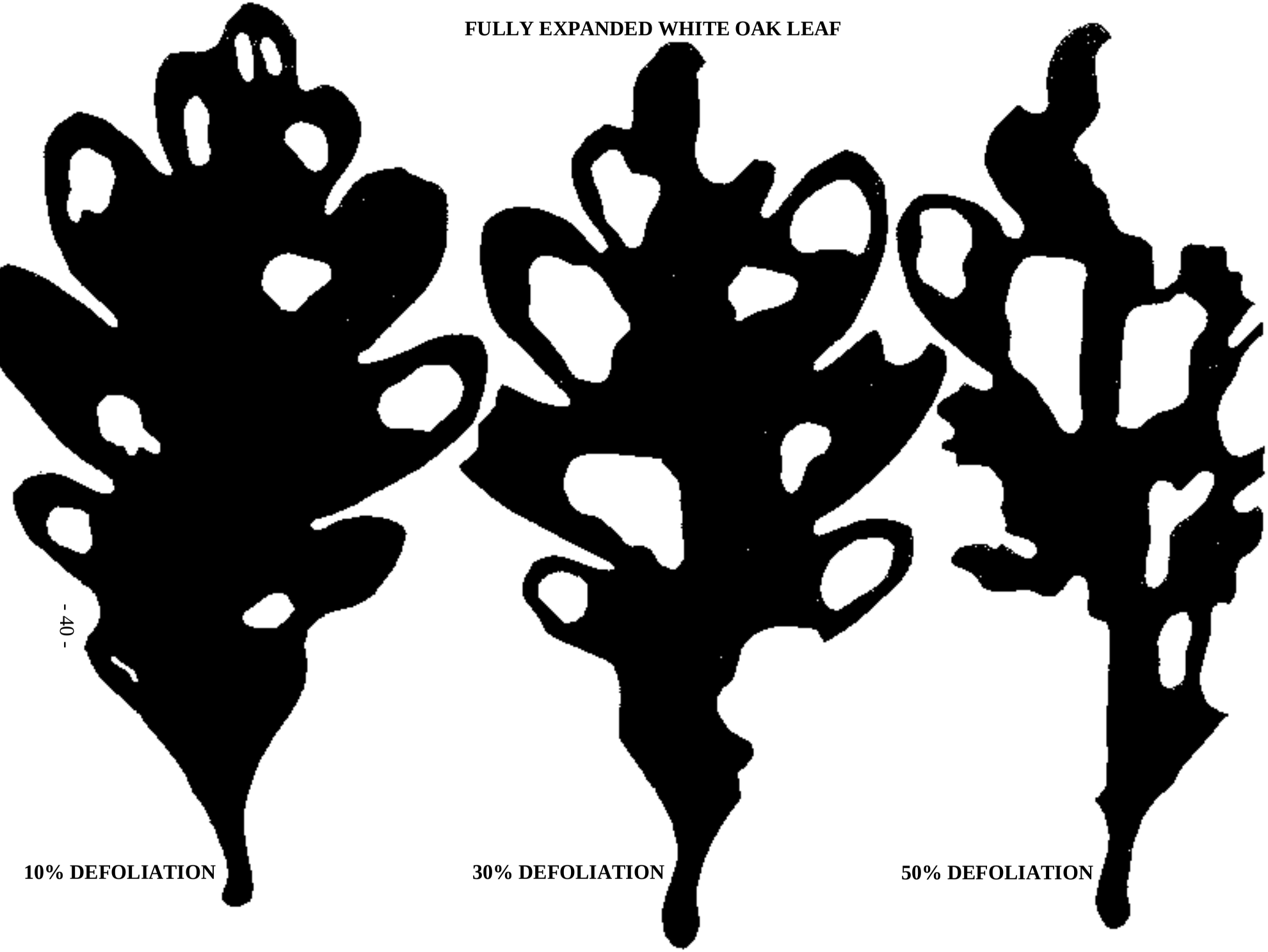
50% DEFOLIATION



A guide to estimating gypsy moth defoliation. Produced by D. Twardus and R. gossard, USDA, Forest Service, NA, December, 1990

This guide shows 3 stages of white oak development and 3 levels of defoliation

FULLY EXPANDED WHITE OAK LEAF



10% DEFOLIATION **30% DEFOLIATION** **50% DEFOLIATION**

APPENDIX I: QUAD CODES

USGS Quad Name	Quad Abbreviation
Abilene	Abile
Abingdon	Abing
Accomac	Accom
Achilles	Achil
Adams Grove	Adamg
Alberene	Alber
Alberta	Albva
Alexandria	Alexa
Alleghany	Alleg
Alleghany	Alleg
Altavista	Altav
Alton	Altnc
Alum Ridge	Alumr
Alvon	Alvon
Amelia Court House	Ameli
Amherst	Amher
Amonate	Amona
Anawalt	Anawa
Andersonville	Andev
Annandale	Annan
Ante	Ante
Appalachia	Appal
Appomattox	Appom
Arcola	Arcol
Arnold Valley	Arnov
Arrington	Arrin
Arvonia	Arvon
Ashby Gap	Ashby
Ashland	Ashla
Aspen	Aspen
Atkins	Atkin
Augusta Springs	Augsp
Austinville	Austi
Axton	Axton
Aylett	Aylet
Back Valley	Backv
Bacons Castle	Bacon
Ballsville	Balls
Barboursville	Barva
Barley	Barle
Baskerville	Baske

USGS Quad Name	Quad Abbreviation
Bassett	Basse
Bastian	Basti
Bath Alum	Batha
Beach	Beach
Beaverdam	Beave
Bedford	Bedfo
Belmont	Belva
Ben Hur	Benhu
Benham	Benha
Benns Church	Benns
Bent Mountain	Bentm
Bentonville	Bento
Bergton	Bergt
Berryville	Berry
Bethel Beach	Bethel
Beulahville	Beuva
Big A Mountain	Bigam
Big Bend	Bigbe
Big Island	Bigil
Big Levels	Bigle
Big Meadows	Bigme
Big Stone Gap	Bigsg
Blacksburg	Blacb
Blackstone East	Blace
Blackstone West	Blacw
Blairs	Blair
Bland	Bland
Blountville	Bloun
Bloxom	Bloxo
Bluefield	Bluef
Bluemont	Bluem
Bon Air	Bonai
Boones Mill	Boonm
Boonsboro	Boons
Boswells Tavern	Boswe
Bowers Hill	Bower
Bowling Green	Bowli
Boxiron	Boxir
Boyce	Boyce
Boyd Tavern	Boyda
Boydton	Boydt

USGS Quad Name	Quad Abbreviation
Boykins	Boyki
Bracey	Brace
Bradshaw	Brads
Bramwell	Bramw
Brandon	Brand
Brandy Station	Brans
Brandywine	Branw
Bridgewater	Bridg
Brierpatch Mountain	Briem
Briery Branch	Brier
Brightwood	Brigh
Bristol	Brist
Broadford	Broad
Broadway	Brova
Brokenburg	Broke
Brookneal	Brook
Brosville	Brosv
Browns Cove	Browc
Brownsburg	Brown
Brumley	Bruml
Buchanan	Bucha
Buckeystown	Bucke
Buckhorn	Buckh
Buckingham	Bucki
Buckner	Buckn
Buena Vista	Buena
Buffalo Ridge	Buffr
Buffalo Springs	Buffs
Burgess	Burge
Burnsville	Burva
Caledonia	Caled
Callaghan	Callg
Callands	Calla
Callaway	Callw
Cana	Cana
Caney Ridge	Caney
Cape Charles	Capec
Cape Henry	Capen
Capon Bridge	Capob
Capon Springs	Capos
Capron	Capro
Carbo	Carbo
Carson	Carso

USGS Quad Name	Quad Abbreviation
Cartersville	Carte
Castle Craig	Castc
Castleton	Castl
Catawba	Catva
Catlett	Catle
Cauthornville	Cauth
Cedar Springs	Cedas
Champlain	Chaml
Chancellorsville	Chanv
Charity	Chava
Charles City	Charc
Charles Town	Chart
Charlotte Court House	Chach
Charlottesville East	Chave
Charlottesville West	Chavw
Chase City	Chase
Chatham	Chtva
Chatham Hill	Chath
Check	Check
Cheriton	Cheri
Cherry Hill	Cherh
Chesapeake Channel	Chesa
Chesconessex	Chesc
Chester	Cheva
Chester Gap	Chesg
Chesterfield	Chesf
Chilhowie	Chilh
Chincoteague East	Chine
Chincoteague East OE S	Chinoes
Chincoteague West	Chinw
Chuckatuck	Chuck
Chula	Chula
Church Hill	Churh
Church Road	Churr
Church View	Churv
Churchville	Chuvi
City Farm	Cityf
Claremont	Clare
Claresville	Clarv
Clarksville North	Clarn
Clarksville South	Clars
Claudville	Claud
Clay Bank	Clayb

USGS Quad Name	Quad Abbreviation
Clayville	Clayv
Clifton Forge	Clift
Clinchport	Clinc
Clintwood	Clint
Clover	Clove
Cluster Springs	Clust
Cobb Island	Cobbi
Coeburn	Coebu
Coleman Gap	Colem
Collierstown	Colli
Colonial Beach North	Colbn
Colonial Beach South	Colbs
Columbia	Colum
Concord	Conva
Conicville	Conic
Conner Lake	Conne
Corapeake	Corap
Cornwall	Cornw
Courtland	Court
Cove Creek	Covcr
Covesville	Coves
Covington	Covva
Cow Knob	Cowko
Craig Springs	Craig
Craigsville	Crava
Creeds	Creed
Crewe East	Crewe
Crewe West	Creww
Crimora	Crimo
Cripple Creek	Cripp
Crisfield	Crisf
Crockett	Crock
Crozet	Croze
Culpeper East	Culpe
Culpeper West	Culpw
Cumberland	Cumva
Cumberland Knob	Cumbe
Dabneys	Dabne
Dahlgren	Dahlg
Daleville	Dalev
Damascus	Damas
Danieltown	Danie
Danville	Danvi

USGS Quad Name	Quad Abbreviation
Darvills	Darvi
De Witt	Dewit
Deatonville	Deato
Deep Creek	Deepc
Deerfield	Deerf
Deltaville	Delta
Dendron	Dendr
Diana Mills	Dianm
Dillwyn	Dillw
Dinwiddie	Dinwi
Disputanta North	Dispn
Disputanta South	Disps
Doe Hill	Doehi
Drakes Branch	Drakb
Drewrys Bluff	Drewb
Drewryville	Drewr
Dublin	Dubva
Duffield	Duffi
Dugspur	Dugsp
Dungannon	Dunga
Dunnsville	Dunns
Dutch Gap	Dutch
Duty	Duty
Eagle Rock	Eagle
Earlysville	Early
East of Deltaville	Edelta
East of Fleets Bay	Efleet
East of Hampton	Ehamp
East of New Point Comfort	Enewp
East of Poquoson East	Epoqe
East of Reedville	Ereed
East Stone Gap	Eston
Edinburg	Edinb
Eggleston	Eggle
Elk Creek	Elkcr
Elk Garden	Elkga
Elkhorn City	Elkho
Elkton East	Elkte
Elkton West	Elktw
Elliott Knob	Ellik
Elliotts Creek	Ellio
Elliston	Ellit
Emporia	Empor

USGS Quad Name	Quad Abbreviation
Endicott	Endic
Esmont	Esmon
Eureka	Eurek
Evarts	Evart
Ewell	Ewell
Ewing	Ewing
Exmore	Exmor
Fairfax	Fairx
Falling Spring	Falli
Falls Church	Falls
Fancy Gap	Fancy
Farmville	Farva
Fentress	Fentr
Ferncliff	Fernc
Ferrum	Ferru
Fine Creek Mills	Finec
Fishermans Island	Fishe
Flat Gap	Flatg
Fleets Bay	Fleet
Fletcher	Fletc
Flint Hill	Flint
Floyd	Floyd
Forest	Fores
Forks of Buffalo	Forko
Forksville	Forks
Fort Belvoir	Ftbel
Fort Blackmore	Ftbla
Fort Defiance	Ftdef
Fort Mitchell	Ftmit
Fort Seybert	Ftsey
Fosters Falls	Fostf
Franklin	Frava
Franktown	Frant
Fredericksburg	Frede
Free Union	Freeu
Front Royal	Front
Fulks Run	Fulks
Gainesville	Gaine
Galax	Galax
Garden City	Gardi
Garden Mountain	Gardm
Gary	Gary
Gasburg	Gasbu

USGS Quad Name	Quad Abbreviation
Gate City	Gatec
Gates	Gates
Germanna Bridge	Germa
Girdletree	Girdl
Glace	Glace
Glade Spring	Glasp
Gladehill	Gladh
Gladstone	Glava
Gladys	Glads
Glasgow	Glasg
Glen Allen	Glenl
Glengary	Gleng
Glenmore	Glenm
Glenvar	Glenv
Gloucester	Glouc
Gold Hill	Golva
Goochland	Gooch
Goode	Goode
Goodview	Goodv
Goose Island	Goois
Gordonsville	Gordo
Gore	Gore
Goshen	Gosva
Grassy Creek	Grass
Grayson	Grays
Great Fox Island	Gtfox
Great Machipongo Inlet	Gtmac
Green Bay	Greby
Green Valley	Greev
Greenfield	Greef
Greenville	Greva
Gressitt	Gress
Gretna	Gretn
Grottoes	Grott
Grundy	Grund
Guinea	Guine
Halifax	Halva
Hallsboro	Halls
Hallwood	Hallw
Hamburg	Hambu
Hampden Sydney	Hampd
Hampton	Hampt
Hampton	Hampt

USGS Quad Name	Quad Abbreviation
Hanover	Hanov
Hanover Academy	Hanoa
Hansonville	Hanso
Hardy	Hardy
Harman	Harva
Harpers Ferry	Harpe
Harrisonburg	Harri
Hayfield	Hayfi
Haynesville	Hayne
Haysi	Haysi
Hayters Gap	Hayte
Healing Springs	Heali
Heathsville	Heath
Hebron	Hebro
Hellier	Helli
Herndon	Hernd
Hewlett	Hewle
Hightown	Hight
Hillcrest	Hillc
Hillsville	Hillv
Hilton	Hilto
Hiwassee	Hiwas
Hog Island	Hogis
Holiday Lake	Holid
Holland	Holla
Holston Valley	Holst
Honaker	Honak
Hopewell	Hopew
Horseshoe Mountain	Horsm
Howardsville	Howar
Hubbard Springs	Hubba
Huddleston	Huddl
Hurley	Hurle
Hutchinson Rock	Hutch
Hylas	Hylas
Independent Hill	Indep
Indian Head	India
Indian Springs	Indis
Indian Valley	Indvy
Ingram	Ingra
Interior	Inter
Inwood	Inwoo
Ironto	Irono

USGS Quad Name	Quad Abbreviation
Irving	Irvin
Irvington	Irvit
Ivor	Ivor
Jamboree	Jambo
Jamesville	Jamva
Jarratt	Jarra
Java	Java
Jeffersonton	Jefft
Jenkins East	Jenke
Jenkins West	Jenkw
Jerrys Run	Jerry
Jetersville	Jeter
Jewell Ridge	Jewel
John H Kerr Dam	Johnh
Joplin	Jopli
Jordan Mines	Jorda
Keen Mountain	Keenm
Kelly	Kelva
Kempsville	Kemps
Kenbridge East	Kenbe
Kenbridge West	Kenbw
Keokee	Keoke
Keswick	Keswi
Keysville	Keysv
King And Queen C.H.	Kinga
King George	Kingg
King William	Kinwm
Kingsport	Kings
Kinsale	Kinsa
Knotts Island	Knott
Knotts Island OE E	Knote
Konnarock	Konna
Kyles Ford	Kyles
La Crosse	Lacro
Ladysmith	Ladys
Lahore	Lahor
Lake Anna East	Lkane
Lake Anna West	Lkanw
Lake Drummond	Lkdru
Lake Drummond NW	Lkdnw
Lake Drummond SE	Lkdse
Lakeside Village	Lakes
Lambsburg	Lambs

USGS Quad Name	Quad Abbreviation
Lancaster	Lanca
Laurel Bloomery	Laure
Laurel Fork	Laurf
Lawrenceville	Lawre
Lebanon	Leban
Leesburg	Leesb
Leesville	Leesv
Lerona	Leron
Lexington	Lexin
Lincoln	Linco
Linden	Linde
Lindside	Linds
Little Creek	Ltcre
Littleton	Litva
Lively	Livel
Long Island	Longi
Long Spur	Lonsp
Longdale Furnace	Longd
Looney	Loone
Looneys Gap	Loong
Loretto	Loret
Lost City	Lostc
Lottsburg	Lotts
Louisa	Louva
Lovingston	Lovin
Lunenburg	Lunen
Luray	Luray
Lynch Station	Lyncs
Lynchburg	Lynch
Machodoc	Macho
Madison	Madva
Madison Mills	Madim
Madisonville	Madis
Majestic	Majes
Manassas	Manas
Mannboro	Mannb
Manquin	Manqu
Manry	Manry
Margarettsville	Marga
Marion	Mario
Marshall	Marva
Martinsville East	Marve
Martinsville West	Marvw

USGS Quad Name	Quad Abbreviation
Massies Corner	Massc
Massies Mill	Massi
Mathews	Mathe
Mathias Point	Mathi
Max Meadows	Maxme
McDonalds Mill	Mcdom
McDowell	Mcdow
McGaheysville	Mcgah
McKenney	Mcken
Meadows of Dan	Meado
Mechanicsburg	Mecha
Meherrin	Meher
Mendota	Mendo
Metompkin Inlet	Metom
Middle Fox Creek	Middf
Middleburg	Mibva
Middlesboro South	Midds
Middletown	Mitva
Midland	Midva
Midlothian	Midlo
Mike	Mike
Milam	Milam
Millboro	Millb
Millers Tavern	Millt
Milton	Milnc
Mine Run	Minru
Mineral	Miner
Minnehaha Springs	Minne
Moll Creek	Mollc
Moneta	Monet
Moneta SW	Monsw
Montebello	Montb
Monterey	Monte
Monterey SE	Monse
Montpelier	Montp
Montross	Motrs
Montvale	Montv
Morattico	Morat
Mount Airy	Mtair
Mount Airy North	Mtain
Mount Hermon	Mther
Mount Landing	Mtlan
Mount Sidney	Mtsid

USGS Quad Name	Quad Abbreviation
Mount Vernon	Mtver
Mountain Falls	Mtfal
Mountain Grove	Mtgro
Mountain Valley	Mtval
Mouth of Wilson	Mouth
Moyock	Moyoc
Mulberry Island	Mulbe
Mustoe	Musto
Nandua Creek	Nandu
Narrows	Narro
Nassawadox	Nassa
Nathalie	Natha
Natural Bridge	Natur
Nebo	Nebo
Nelson	Nelso
Nettleridge	Nettl
New Castle	Newca
New Kent	Newke
New Market	Newma
New Point Comfort	Newpo
Newport	Nepva
Newport News North	Newpn
Newport News South	Newps
Nimrod Hall	Nimro
Nokesville	Nokes
Nora	Nora
Norfolk North	Norfn
Norfolk South	Norfs
Norge	Norge
North Bay	Nbava
North View	Nview
North Virginia Beach	Nvabe
Northeast Eden	Neede
Northwest Eden	Nwede
Norton	Norto
Oak Level	Oakle
Oakvale	Oakva
Occoquan	Occoq
Old Rag Mountain	Oldra
Omega	Omega
Orange	Orang
Oriskany	Orisk
Orkney Springs	Orkne

USGS Quad Name	Quad Abbreviation
Orlean	Orlea
Paddy Knob	Paddy
Paint Bank	Painb
Palmyra	Palva
Palo Alto	Paloa
Pamplin	Pampl
Panther	Panth
Park	Park
Parksley	Parks
Parnassus	Parna
Passapatanzy	Passa
Patrick Springs	Patri
Patterson	Patte
Peaks of Otter	Peaks
Pearisburg	Pears
Pendleton	Pendl
Penhook	Penho
Pennington Gap	Penni
Penola	Penol
Perkinsville	Perkv
Petersburg	Peter
Peterstown	Petet
Philpott Lake	Philp
Pilot	Pilot
Piney Point	Pinep
Piney River	Piney
Pittsville	Pittv
Pleasant Ridge	Plear
Plum Grove	Plumg
Pocomoke City	Pocom
Point of Rocks	Ptofr
Poolesville	Poole
Poquoson East	Poque
Poquoson West	Poquw
Port Royal	Portr
Potts Creek	Potts
Pound	Pound
Pounding Mill	Pounm
Powellton	Ponva
Powhatan	Powva
Prater	Prate
Price	Price
Prince George	Pring

USGS Quad Name	Quad Abbreviation
Princess Anne	Prina
Princeton	Priwv
Prospect	Prosp
Providence Forge	Provi
Pulaski	Pulas
Pungoteague	Pungo
Purcellville	Purce
Purdy	Purdy
Quantico	Quant
Quinby Inlet	Quinb
Quinton	Quint
Radford North	Radfn
Radford South	Radfs
Rapidan	Rapid
Rappahannock Academy	Rappa
Rawley Springs	Rawle
Raynor	Rayno
Rectortown	Recto
Red House	Redho
Reddish Knob	Reddi
Redwood	Redwo
Reedville	Reedv
Remington	Remin
Republican Grove	Repug
Rice	Rice
Richardsville	Richa
Richlands	Ricva
Richmond	Richm
Ridge	Ridge
Rileyville	Riley
Riner	Riner
Ringgold	Ringg
Riverdale	River
Roanoke	Roava
Rochelle	Roche
Rockville	Rockv
Rocky Gap	Rockg
Rocky Mount	Rocva
Rollins Fork	Rolli
Rose Hill	Rosva
Round Hill	Round
Roxbury	Roxbu
Rubermont	Ruber

USGS Quad Name	Quad Abbreviation
Rucker Gap	Rucke
Runnymede	Runny
Rural Retreat	Rurar
Rustburg	Rustb
Ruther Glen	Ruthe
Saint Clements Island	Stcle
Saint George Island	Stgei
Saint Joy	Stjoy
Saint Paul	Stpau
Salem	Salva
Salem Church	Salec
Salisbury	Sasva
Saltville	Saltv
Saluda	Salud
Sandy Level	Sandl
Sanville	Sanvi
Savedge	Saved
Saxe	Saxe
Saxis	Saxis
Schuyler	Schuy
Scottsburg	Scott
Scottsville	Scotv
Sebrell	Sebre
Sedalia	Sedal
Sedley	Sedle
Seneca	Senec
Seven Pines	Sevep
Shacklefords	Shack
Shady Valley	Shady
Sherando	Shera
Ship Shoal Inlet	Ships
Shipman	Shipm
Simeon	Simeo
Singers Glen	Singe
Skippers	Skipp
Smith Mountain Dam	Smitm
Smith Point	Smitp
Smithfield	Smith
Smoky Ordinary	Smoky
Sneedville	Sneed
Snow Creek	Snocr
Snowden	Snowd
Snowy Mountain	Snowy

USGS Quad Name	Quad Abbreviation
Somerville	Somer
South Anna	Sanna
South Boston	Sbost
South Hill	Shill
South Hill SE	Shise
Sparta	Spart
Sparta East	Spare
Sparta West	Sparw
Speedwell	Speew
Spencer	Spenc
Spotsylvania	Spots
Spring Garden	Sprig
Stafford	Staff
Staffordsville	Stafv
Stanardsville	Stana
Stanley	Stanl
Staunton	Staun
Stephens City	Stepc
Stephenson	Steva
Sterling	Sterl
Stewartsville	Stewa
Stickleyville	Stick
Stokesville	Stoke
Stonewall	Stone
Stony Creek	Stonc
Storck	Storc
Straightstone	Strai
Strasburg	Stras
Stratford Hall	Strat
Strom	Strom
Stuart	Stuar
Stuart SE	Stuse
Stuarts Draft	Stuad
Studley	Studl
Suffolk	Suffo
Sugarloaf Mountain	Sugar
Sunbeam	Sunbe
Sunrise	Sunri
Supply	Supva
Surry	Surry
Sussex	Susse
Sutherland	Suthe
Swift Run Gap	Swift

USGS Quad Name	Quad Abbreviation
Sylvatus	Sylva
Tangier Island	Tangi
Tappahannock	Tappa
Tazewell North	Tazen
Tazewell South	Tazes
Templeton	Templ
Tenth Legion	Tenth
Thornton Gap	Thorg
Thornwood	Thorw
Thornwood	Thorw
Thoroughfare Gap	Thoro
Timberville	Timbv
Tiptop	Tipto
Toano	Toano
Tobacco Row Mountain	Tobac
Toms Brook	Tomsb
Townsend	Towns
Trenholm	Trenh
Trout Dale	Troud
Truhart	Truha
Tungsten	Tungs
Tunstall	Tunst
Unionville	Union
Upperville	Upper
Urbanna	Urban
Valentines	Valen
Vansant	Vansa
Varilla	Varil
Vera	Vera
Vernon Hill	Verno
Vesuvius	Vesuv
Vicksville	Vickv
Vienna	Vieva
Villamont	Villa
Virgilina	Virgi
Virginia Beach	Virgb
Wachapreague	Wacha
Wachapreague OE E	Wacha
Waiteville	Waite
Walkers	Walke
Wallace	Walva
Wallops Island	Wallo
War	War

USGS Quad Name	Quad Abbreviation
Wardensville	Warde
Ware Neck	Waren
Warfield	Warfi
Warm Springs	Warms
Warrenton	Warva
Washington	Wasva
Washington West	Washw
Waterford	Watef
Waverly	Waver
Waynesboro East	Waybe
Waynesboro West	Waynw
Wellville	Wellv
West of Franktown	Wfran
West of Jamesville	Wjame
West of Nandua Creek	Wnacr
West Augusta	Waugu
West Point	Wpoin
Westover	Wovva
Whaleyville	Whale
Wharncliffe	Wharn
Wheeler	Wheel
White Gate	Whitg
White Hall	Whiha
White Plains	Whipl
White Sulphur Springs	Whits
Whitesburg	Whitb
Whitetop Mountain	Whimt
Whiteville	Whiva
Whitmell	Whitm
Whittington Point	Whipt
Widewater	Widew
Wightman	Wight
Williamsburg	Wmsva
Williamsville	Wmsvi
Willis	Willi
Willis Mountain	Willm
Wilton	Wilva
Winchester	Winch
Windsor	Winsr
Winterpock	Winte
Wise	Wise
Wolf Gap	Wolfg
Woodford	Woodf

USGS Quad Name	Quad Abbreviation
Woodlawn	Woova
Woodstock	Woods
Woodville	Wodva
Woolwine	Woolw
Wylliesburg	Wylli
Wyndale	Wynda
Wytheville	Wythe
Yale	Yale
Yellow Tavern	Yello
Yorktown	Yorkt
Zion Crossroads	Zionc
Zuni	Zuni

APPENDIX J: AERIAL TREATMENT PROPOSAL FORM

Locality: _____ Year: _____

Block Number	Forested Acres	EM/Acre	No. Survey Plots	Block Category	Percent Cover	Percent Preferred Host	Insecticide	If Bt. BIU/Acre
Quad(s)	Open Water In Block (Y/N)	Total No. Dwellings	No. Schools in Block	No. of Churches in Block	Previous Treatment		Comments:	
					Block Treated Y/N	Number of Acres		

Block Number	Forested Acres	EM/Acre	No. Survey Plots	Block Category	Percent Cover	Percent Preferred Host	Insecticide	If Bt. BIU/Acre
Quad(s)	Open Water In Block (Y/N)	Total No. Dwellings	No. Schools in Block	No. of Churches in Block	Previous Treatment		Comments:	
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Block Number	Forested Acres	EM/Acre	No. Survey Plots	Block Category	Percent Cover	Percent Preferred Host	Insecticide	If Bt. BIU/Acre
Quad(s)	Open Water In Block (Y/N)	Total No. Dwellings	No. Schools in Block	No. of Churches in Block	Previous Treatment		Comments:	
					Block Treated Y/N	Number of Acres		

Block Number	Forested Acres	EM/Acre	No. Survey Plots	Block Category	Percent Cover	Percent Preferred Host	Insecticide	If Bt. BIU/Acre
Quad(s)	Open Water In Block (Y/N)	Total No. Dwellings	No. Schools in Block	No. of Churches in Block	Previous Treatment		Comments:	
					Block Treated Y/N	Number of Acres		

AERIAL TREATMENT PROPOSAL FORM INSTRUCTIONS:

See pages 16-17 for instructions on completing the Aerial Treatment Proposal Form.

APPENDIX K: ON-SITE MONITORING FORM

Locality: _____ Name: _____ Year: _____

Block Number	Application Date	Load Time	Aircraft Tail Number	Temp.	Humidity	Wind Speed & Direction	Percent Foliage Expansion	Larval Instar	Rainfall	
									4 Hrs.	8 Hrs.

ON-SITE MONITORING FORM INSTRUCTIONS

Locality – enter your locality

Name – enter the name of the person recording the on-site data.

Year – current year

Block Number – enter one block per line. Block numbers can be entered in the order in which they are sprayed.

Application Date – enter the month and day the application takes place.

Load Time – enter the time the aircraft left airport to treat block. This time can be used to compare on-site data with flight data from aircraft.

Aircraft Tail Number - FAA tail number of aircraft 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. If more than one aircraft is used in block, enter other aircraft in comments section.

Temp. – enter temperature in Degrees F. Temperature readings should be taken at or near the blocks. Use the average temperature during treatment.

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 or digital weather meter (Ex. Kestrel) should be used for relative humidity estimates.

Wind Speed - Average wind speed can be estimated using the Beaufort wind scale or a digital weather meter (ex. Kestrel). The Beaufort wind scale can be found in the Appendix G. 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.

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.

Larval Instar - Visually inspect 10 larvae. Indicate the predominant larval instar. Select one! Use the guide found in Appendix G, page 39.

Rainfall - 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.

4 Hrs. - Enter "yes" only if certain the block experienced rainfall of the least ½ inch. Enter "no" if there was no rainfall in block. Enter "UNK" if unknown. If precise amount of rainfall is known, enter the amount instead of "yes."

8 Hrs. - Enter "yes" only if certain the block experienced rainfall of the least ½ inch. Enter "no" if there was no rainfall in block. Enter "UNK" if unknown. If precise amount of rainfall is known, enter the amount instead of "yes."

APPENDIX L: POST-TREATMENT FORM

Locality _____ Total Number of Communities Treated _____ Year _____

Block Number	EM/Acre	Block Category	No. of Acres That Will Qualify for Treatment in 2016	No. of Acres With Defoliation	Insecticide	If Bt: BIU/Acre
Block Number	EM/Acre	Block Category	No. of Acres That Will Qualify for Treatment in 2016	No. of Acres With Defoliation	Insecticide	If Bt: BIU/Acre
Block Number	EM/Acre	Block Category	No. of Acres That Will Qualify for Treatment in 2016	No. of Acres With Defoliation	Insecticide	If Bt: BIU/Acre
Block Number	EM/Acre	Block Category	No. of Acres That Will Qualify for Treatment in 2016	No. of Acres With Defoliation	Insecticide	If Bt: BIU/Acre
Block Number	EM/Acre	Block Category	No. of Acres That Will Qualify for Treatment in 2016	No. of Acres With Defoliation	Insecticide	If Bt: BIU/Acre
Block Number	EM/Acre	Block Category	No. of Acres That Will Qualify for Treatment in 2016	No. of Acres With Defoliation	Insecticide	If Bt: BIU/Acre
Block Number	EM/Acre	Block Category	No. of Acres That Will Qualify for Treatment in 2016	No. of Acres With Defoliation	Insecticide	If Bt: BIU/Acre
Block Number	EM/Acre	Block Category	No. of Acres That Will Qualify for Treatment in 2016	No. of Acres With Defoliation	Insecticide	If Bt: BIU/Acre

POST-TREATMENT FORM INSTRUCTIONS

Post-Treatment survey must be completed and returned to VDACS. Information from this survey is used by USDA-FS to determine efficacy of treatments in each spray block. Return surveys the VDACS/OPIS Richmond Office by September 30, 2016.

Block Number – enter number of spray block. All spray blocks must be entered on this form. Enter one block per line, if a spray block was divided to buffer water, all resulting spray blocks can be entered on one line.

EM/Acre – conduct a 1/40th acre egg mass survey (see instructions on page 25) to determine the average number of egg masses per acre within the treated area. This number will be compared to the egg masses per acre on the original proposal form. Do not include egg masses found outside of the boundaries of the original (2016) spray block.

Block Category – enter A, B, C, D or E for area type from guidelines. The block category must be the same as on the **Aerial Treatment Proposal Form.**

No. of Acres That Will Qualify for Treatment in 2017 – estimate the number of acres (within the original spray block boundaries) that *will qualify for treatment in 2017* using criteria established in VDACS' **2016 Guidelines for Participation Aerial Treatments**.

No. of Acres With Defoliation – estimate number of acres within the block that had 30% or greater defoliation.

Insecticide – enter insecticide applied in block.

If Bt: BIU/Acre – If insecticide was *Btk*, enter "25" or "38" for BIU applied. If insecticide used was Dimilin, leave this block blank.

APPENDIX M: EGG MASS SURVEY GRID

1:24000 Topographic Map

1 Square = 50 Acres

Notes