

**File** 3400/1950

**Date:** March 28, 2024

**Code:**

**Route To:**

**Subject:** Pennsylvania Department of Conservation and Natural Resources  
FY 2023 *Lymantria dispar dispar* Suppression Project Analysis and  
Documentation

**To:** Spongy moth Suppression File

The National Environmental Policy Act (NEPA) of 1969 requires detailed environmental analysis of any proposed federal action that may affect the human environment. The courts regard federally funded state actions as federal actions. The US Forest Service provides financial assistance for spongy moth cooperative suppression projects that are conducted by states in compliance with US Forest Service guidelines and policies.

For this specific project, Pennsylvania Department of Conservation and Natural Resources (DCNR) has requested federal cost share assistance and they are responsible for program implementation, assessment, and analysis. The Pennsylvania spongy moth suppression project is conducted by the Division of Forest Pest Management, Bureau of Forestry, Department of Conservation and Natural Resources, under authority of Act No. 18 of 1995 (see Chpt. 3. Section 302(4)), with the purpose of reducing spongy moth populations in order to mitigate the aesthetic, economic, and environmental losses caused by spongy moth caterpillars feeding on all forested areas within the Commonwealth. Evaluation of the PA suppression program is the responsibility of DCNR.

The Record of Decision (ROD) for the Final Gypsy Moth Supplemental Environmental Impact Statement (SEIS) was signed on December 5, 2012, and selected to continue with the current direction of the USDA National Spongy Moth Management Program as decided in the 1995 Final Environmental Impact Statement (see SEIS Vol. II, Chpt. 1, pp. 4-5). The USDA agencies selected the alternative which includes suppression, eradication, and slow-the-spread strategies to manage spongy moth in the United States. Due to the location of these infestations, suppression would be the objective on this project.

Per the ROD (p. 27), [t]his decision continues the requirement of the USDA National Spongy Moth Management Program that specific spongy moth treatments may be authorized only after analysis of the site-specific environmental effects, carried out in accordance with the National Environmental Policy Act and any other applicable legal requirements.

After review and evaluation of DCNR environmental assessment documenting the analysis, I have determined that the state-prepared assessment is consistent with NEPA Section 102 requirements, including, “the environmental impact of the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, alternatives to the proposed action, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources which

would be involved in the proposed action should it be implemented.” [NEPA, Sec. 102 C]

The USDA-FS supports an integrated pest management approach to invasive species response. For this type of cooperator-designed and implemented spongy moth suppression project we are providing finances for Grey Towers. The treatments being proposed by DCNR were analyzed and approved in the FSEIS/ROD for suppression projects.

The USDA has broad discretionary, statutory authority to conduct spongy moth management activities. Following is a list of the laws granting authority to the USDA (FSEIS, Vol. II, Chpt. 1, p. 7; Appendix B, p. 2; SEIS ROD, pp. 1 and 8; 1995 FEIS, Vol. II, page 1-8).

1. Plant Protection Act of 2000, as amended (7 U.S.C. 7701- 7759).
2. The Plant Quarantine Act of 1912, as amended [7 U.S.C. sections 151-165, 167].
3. The Federal Plant Pest Act of 1957, as amended [7 U.S.C. sections 150aa-150jj].
4. The Department of Agriculture Organic Act of 1944, as amended [7 U.S.C. section 147a].
5. Cooperation with State Agencies in Administration and Enforcement of Certain Federal Laws [7 U.S.C. section 450].
6. The Cooperative Forestry Assistance Act of 1978 [16 U.S.C. section 2101], as amended by the Forest Stewardship Act of 1990 [16 U.S.C. section 2101].
7. Endangered Species Act of 1973 [16 U.S.C. sections 1531-1536, 1538-1540].
8. National Historic Preservation Act of 1966, as amended [16 U.S.C. section 101].
9. Clean Water Act of 1972, [33 U.S.C. section 402; National Pollutant Discharge Elimination System (NPDES)].
10. COMPLIANCE WITH THE ENDANGERED SPECIES ACT. No direct or indirect impacts to federally listed species are anticipated under the proposed action. See correspondence with USDA Fish and Wildlife Service (attached).
11. COMPLIANCE WITH THE NATIONAL HISTORIC PRESERVATION ACT.
12. COMPLIANCE WITH THE CLEAN WATER ACT. The Environmental Protection Agency authorizes the NPDES program to state governments. State agencies are enabled to perform the permitting, administrative and enforcement aspects of the NPDES program. NPDES permit #PA0270776 is effective from September 1, 2023, to August 31, 2028. Permits and supporting documentation for this project can be located by contacting Pennsylvania Department of Conservation and Natural Resources Bureau of Forestry | Division of Forest Health 400 Market Street, 6th Floor, PO Box 8552 | Harrisburg, PA 17105-8552 (717)-783-2066

Date:

Robert Gentry  
Field Representative  
State, Private and Tribal Forestry  
Eastern Region, Morgantown Field Office  
Morgantown, WV

## **Biological Evaluation of Lymantria Dispar Outbreaks - 2024**

### **Central Area – Division of Forest Health**

#### **Introduction:**

Like the past several years, the 2023 Lymantria Dispar (LD) population continued to be high. Populations throughout many locations in the Central Area have reached one thousand or more egg masses per acre. We went from no spray program for spring 2020 to a very large program for spring 2021, which continued in 2022 and 2023. That trend has continued into the fall of 2023. It will be interesting to see if the impact area stays in the central part of the state or continues to shift to the east for 2025.

#### **Methods:**

Bureau of Forestry, and Forest Health (FH) personnel conduct LD population surveys annually. These include ground surveys and aerial surveillance flights, all at the appropriate times. The 1/40<sup>th</sup> acre fixed radius plot survey method is used to estimate egg mass densities. Visible defoliation (>30%) is mapped using GIS technology during aerial survey operations. When appropriate, causal agents, extent and population trends are verified via ground checks afterward. FH personnel also collect samples of various LD life stages for laboratory evaluation of viability and mortality sources. This information is distributed to land managers and other cooperators who can then determine if there is a need to submit a suppression program proposal.

Treatment proposals on public lands are based on a combination of LD egg mass densities, host susceptibility and land management criteria. FH personnel perform field checks to confirm qualifying conditions. Once proposals are received, they are accepted or rejected based on a field evaluation conducted by FH staff.

#### **Results and Discussion:**

In the 2022/2023 season, hundreds of susceptible sites were examined by Central Area personnel. High populations of egg masses were found throughout many parts of the Central Area. Because of this continuation of high populations, many requests for treatment were received from public cooperators.

#### **Recommendations/Proposed Action**

##### **State Park Land**

Centre County – Poe Valley, Poe Paddy, Bald Eagle, and Penn Roosevelt State Parks -- Moderate value oak timber and recreational sites. Egg mass counts are moderate to high and increasing. There are high numbers in the State Forest Land surrounding the parks. Protect valuable timber and recreational sites.

Huntingdon County – Whipple Dam State Park– Moderate value oak timber and recreational sites. Egg mass counts are moderate to high and increasing. There are high numbers in the State Forest Land surrounding the parks. Protect valuable timber and recreational sites.

Union County – RB Winter and Sand Bridge State Parks– Moderate value oak timber and recreational sites. Egg mass counts are moderate to high and increasing. There are high numbers in the State Forest Land surrounding the parks. Protect valuable timber and recreational sites.

Clinton County – Hyner View and Ravensburg State Parks- Moderate value oak timber and recreational site. Egg mass counts are moderate but increasing. There are high numbers in the State Forest Land surrounding the park. Protect valuable timber and recreational sites.

Perry County – Big Spring State Park– Other desired species and recreational site. Egg mass counts are low, but the surrounding state forest has moderate to high egg mass counts. Protect canopy cover over the recreational site and preserve quality of recreation.

Cumberland County – Colonel Denning State Park– Other desired species and recreational site. Egg mass counts are low, but the surrounding state forest has moderate to high egg mass counts. Protect canopy cover over the recreational site and preserve quality of recreation.

Mifflin County – Reeds Gap State Park– Other desired species and recreational site. Egg mass counts are low, but the surrounding state forest has moderate to high egg mass counts. Protect canopy cover over the recreational site and preserve quality of recreation.

## **State Forest Land**

Forest District 3 – Perry, Juniata, Huntingdon, Franklin, Cumberland, and Mifflin Counties – Moderate to high value timber stands, future timber sales and recreation areas. Egg mass counts are moderate to high and increasing. Protect moderate to high value timber stands and recreation areas.

Forest District 5 – Mifflin, Centre, and Huntingdon Counties - Moderate to high value timber stands, recent timber sales and recreation areas. Egg mass counts are moderate to high and increasing. Protect moderate to high value timber stands and recreation areas.

Forest District 7 – Centre, Mifflin, Snyder, and Union Counties - Moderate to high value timber stands, recent timber sales and recreation areas. Egg mass counts are moderate to high and increasing. Protect moderate to high value timber stands and recreation areas.

Forest District 10 – Clinton and Cameron Counties - Moderate value timber stands and recent timber sales. Egg mass counts mixed, but in many areas high and are increasing. Protect moderate value timber stands.

Table 1. A Summary of Approved Acreage

Cooperator	Type	# of Blocks	Acres
BOF	State Forest Land	85	100,828
BOSP	State Park Land	13	1,529
	<b>TOTAL CENTRAL</b>	<b>98</b>	<b>102,357</b>

It is recommended that the proposed areas in the Central Area be treated with a single application of *Bacillus thuringiensis* (Bt) at the rate of 38 BIU per acre or a single application of Mimic 2LV at 0.09 lb. ai/acre, depending on the population size, block size and location of spray block.

Gina Berger – Forest Health Program Specialist

February 7, 2024

### **Biological Evaluation of Gypsy Moth Outbreaks in Pennsylvania - 2024**

#### **Southern Area - Division of Forest Health**

#### **INTRODUCTION**

The Southern Area (SA) of the PA Bureau of Forestry Division of Forest Health (BOF-DFH) is comprised of 15 counties from south-central to southwestern Pennsylvania. These 15 counties are divided into 4 Forest Districts (FD): FD1, covering York, Adams, Cumberland, and Franklin counties; FD2, covering Fulton and Bedford counties; FD4, covering Blair, Cambria, and Indiana counties; and FD6, covering Somerset, Westmoreland, Fayette, Allegheny, Washington and Greene counties.

In recent history, a Spongy moth (SM) outbreak started in the Pocono region with heavy defoliation recorded in 2004. By 2005, heavy defoliation had reached the Southern Area in Blair, Somerset, Bedford, and Fulton counties. Widespread and regional droughts in 2006 and 2007, coupled with widespread defoliation, resulted in thousands of acres of oak mortality in FD1 and FD2. Some limited gypsy moth oak mortality also occurred in FD4 and FD6.

BOF- DFH began suppression on the outbreak starting in 2006 and sprayed annually through 2009. A cool wet spring in 2008 gave the bacterium, *Entomophaga maimaiga* (*Em*), a strong start as an epizootic. The spring of 2009 was also cool and wet, and *Em* became a full blown panzootic event. By the end of June of 2009 GM populations had collapsed across the entire state. In 2012, spotty populations began to appear in the northeast, building momentum through 2016 southward along the ridge and valley region. The Southern Area was on the leading edge;

however, a population decline in 2017 halted spread through 2019. Egg mass surveys for 2020 indicated an area-wide gradual increase, which turned out to be a significant increase in many areas for 2021 hatch – a pattern which has continued into 2024.

## **METHODS**

Bureau of Forestry, and Forest Health (FH) personnel conduct Spongy moth population surveys annually. These include ground surveys and aerial surveillance flights, all at the appropriate times. The 1/40<sup>th</sup> acre fixed radius plot survey method is used to estimate egg mass densities. Visible defoliation (>30%) is mapped using GIS technology during aerial survey operations. When appropriate, causal agents, extent and population trends are verified via ground checks afterward. This information is distributed to land managers and other cooperators who can then determine if there is a need to submit a suppression program proposal.

Treatment proposals on state lands are based on a combination of Spongy moth egg mass densities, host susceptibility and forest management criteria. FH personnel perform field checks to confirm qualifying conditions.

## **RESULTS AND DISCUSSION**

In 2023, hundreds of susceptible sites were examined by Southern Area personnel. In most of the Southern Area, SM populations have decreased, but have shifted toward the eastern counties. Populations there have increased some and populations within forest district 1 are over 1000 egg masses/acre at many survey points. It will be interesting to see if this lasting trend continues into another year.

## **RECOMMENDATIONS/PROPOSED ACTION**

A 2024 suppression program of over 227,000 acres is planned for state forest lands and state park lands throughout the central third of Pennsylvania and several eastern counties in the state. For the Southern Area, this includes portions of FD1 and two State Parks (Prince Gallitzin, Cambria Co, and Kings Gap, Cumberland Co) totaling 10,071 acres (not including Game Commission lands, which are treated under their contract).

Since many portions of the Area contain high egg mass counts and are not part of the suppression program, continued and diligent monitoring of the 2024 hatch/dispersal is vital.

Scott Stitzer – in place of the

Southern Area Forest Health Specialist

Division of Forest Health, Southern Area

January 30, 2024

# Biological Evaluation of *Lymantria dispar* Outbreaks in Pennsylvania

## 2024

### Western Area – Division of Forest Health

#### INTRODUCTION

Most *Lymantria dispar* populations in the Western Forest Health (FH) Area crashed during the spring/early summer of 2023. In 2024, only a few areas still have a lingering population. This conclusion is supported by data gathered by Bureau of Forestry (BOF) egg mass density surveys. These are conducted annually to determine the need for a *L. dispar* suppression program the following year. Some defoliation from *L. dispar* was recorded for the Western FH Area following the 2023 surveys.

During the summer of 2023, the adult moth flight period was closely observed as well as the size and density of new egg masses laid by the female *L. dispar* during July and August 2023. New egg mass surveys were initiated in August 2023 and survey work is ongoing as of February 2024. Analysis of the new egg mass densities will provide an accurate projection of forested areas at risk for significant defoliation in 2024. This data has been utilized in proposing that a spray program be planned in the Western FH Area for the 2024 *L. dispar* suppression program.

#### METHODS

County, Bureau of Forestry, and Forest Health (FH) personnel conduct spongy moth population surveys annually. These include ground surveys and aerial surveillance flights, all at the appropriate times. The 1/40<sup>th</sup> acre fixed radius plot survey method is used to estimate egg mass densities. Visible defoliation (>30%) is mapped using GIS technology during aerial survey operations. When appropriate, causal agents, extent and population trends are verified via ground checks afterward. Survey site data is recorded utilizing Apple iPad/iPhone devices and the ESRI Field Maps app. Data is uploaded to the Bureau of Forestry's FIMS system.

Treatment proposals on state lands are based on a combination of spongy moth egg mass densities, host susceptibility and forest management criteria. FH personnel perform field checks to confirm qualifying conditions. Once proposals are received and reviewed, they are accepted or rejected based on a field evaluation and data review by FH staff.

#### RESULTS AND DISCUSSION

##### 2023-2024

Some defoliation took place in the Western Area in 2023, due to moderate populations of *L. dispar*. Frost damage was a major contributor to foliage damage in 2023. Oak shothole leafminer continued to be easy to find through the Western Area but are at far lower densities than in 2021, 2020 or 2019.

New egg mass survey plot sampling began following the adult male moth flight, mating, and the laying of new egg masses by female moths in July 2023. To date, seven hundred and thirty-one (731) 1/40<sup>th</sup> acre egg mass survey plots were established from mid-July 2023 thru January 2024 in the Western FH Area.

An effort was made to conduct sampling in areas where problems had occurred in previous years, areas that had defoliation in 2023, as well as a few relatively new purchases with unknown history.

## SUMMARY

Analysis of the data from the 2023-2024 egg mass counts, to date, indicate that *Lymantria dispar* populations are above treatment threshold levels in portions of Clearfield and Centre Counties of the Western FH area.

## RECOMMENDATIONS/PROPOSED ACTION

It is recommended that FH carry out suppression treatments to protect valuable forest resources in the 2024 growing season for the following Western Area locations:

- Moshannon State Forest in Clearfield and Centre Counties
- 

FH staff should continue to monitor *Lymantria dispar* populations to allow the prediction of future outbreaks paying particular attention to the following:

- Areas historically defoliated, including areas with increased numbers of egg masses (as described above).
- Areas with increases in egg masses relative to 2022-2023, that did not qualify for the 2024 suppression program.

Suppression activities have been proposed for 2024. The amount of qualifying acreage across state forest does not exceed what we are able to be spray during the 2024 suppression program.

<u>Cooperator</u>	<u>Type</u>	<u># of Blocks</u>	<u>Acres</u>
Bureau of Forestry	State Forest	6	13,323
<b>Total</b>		<b>6</b>	<b>13,323</b>

James Altemus

Western Area Forest Health Program Specialist

25 January 2024

**Biological Evaluation of *Lymantria dispar dispar*  
Outbreaks in Pennsylvania – 2024 PA DCNR Bureau of  
Forestry**

**Division of Forest Health, Eastern Area**

## INTRODUCTION

The Eastern Area (EA) of the PA Bureau of Forestry Division of Forest Health (BOF-DFH) is comprised of 23 counties in the eastern portion of the state. These 23 counties are divided into 4 Forest Districts (FD): FD11, covering Lackawanna, Luzerne, Susquehanna, Wayne, and Wyoming Counties; FD17, covering Berks, Bucks, Chester, Delaware, Lancaster, Lehigh, Montgomery, Northampton, and Philadelphia Counties; FD18, covering Carbon, Columbia, Dauphin, Lebanon, Northumberland, Montour, and Schuylkill Counties; and FD19, covering Monroe and Pike Counties.

The EA has been experiencing a *Lymantria dispar* (LDD) outbreak cycle over the last several years. Signs of a building infestation were observed as early as 2014, and suppression programs have been warranted every year from 2015 through 2019. In 2019, a very small LDD Suppression Program was proposed and implemented. The entire 2019 program fell within a single County (Lackawanna) and consisted of 21 treatment blocks and totaling 1490 acres. Post treatment spray block evaluations indicated that all blocks met or exceeded success criteria.

After several years of high fungus and virus activity and LDD population decline, it was known that we would not need a suppression program for 2020 and 2021. We had a small suppression program in 2022 with 5 spray blocks, 1,247 acres. For 2023, we had a growing suppression program compared to 2022 with 48 spray blocks, 14,981 acres. In 2024, Unfortunately, as the egg mass data came in, we see that there was an increase within common "Hot Spots" in the eastern area of Pennsylvania. We do need a suppression program in 2024 within the EA of Pennsylvania.

## METHODS

County, Bureau of Forestry, and Forest Health (FH) personnel conduct spongy moth population surveys annually. These include ground surveys and aerial surveillance flights, all at the appropriate times. The 1/40<sup>th</sup> acre fixed radius plot survey method is used to estimate egg mass densities. Visible defoliation (>30%) is mapped using GIS technology during aerial survey operations. When appropriate, causal agents, extent and population trends are verified via ground checks afterward. Survey site data is recorded utilizing Apple iPad/iPhone devices and the ESRI Field Maps app. Data is uploaded to the Bureau of Forestry's FIMS system.

Treatment proposals on state lands are based on a combination of spongy moth egg mass densities, host susceptibility and forest management criteria. FH personnel perform field checks to confirm qualifying conditions. Once proposals are received and reviewed, they are accepted or rejected based on a field evaluation and data review by FH staff.

## RESULTS AND DISCUSSION

Up till now, one thousand forty-six (1,046) 1/40<sup>th</sup> acre egg mass survey plots were established from mid-September 2022 thru January 2024 in the Eastern Area. Surveys have been done in historical LDD areas, and the results show that, in some areas, suppression is recommended. Egg mass

surveys were conducted on various types of State Lands and revealed that spots of high *LDD* populations have occurred in the most eastern part of Pennsylvania, which includes Pike, Monroe, and Dauphin Counties. Egg mass size was predominately medium (nickel-sized) at most survey locations.

Beneficially, a near total collapse of the population occurred as a wet, cool spring favored the *LDD* fungus, *Entomophaga maimaiga* in 2022 and 2023. The collapse of *LDD* populations appeared to be consistent across the eastern region, but not for parts of Pike, Monroe, and Dauphin Counties. Based on our Aerial Defoliation survey data in 2023, surveys within Pike, Monroe, and Dauphin County were identified total of 171,757 acres of Chestnut Oak, White Oak, and Northern Red Oak with defoliation 50 – 75% of leaves defoliated, which is up from last year. When comparing our last largest spray program in 2015, Pike County defoliation was 15,689 acres and Monroe County was 103,076 acres with 50 – 75% of leaves defoliated. Initially, it looks as though the Eastern Area could see an increase in defoliation for 2024.

Frequent communication occurred with the Eastern Area's County Coordinators, District Staff, and Private Citizens. Much of the communication resulted in calls or other forms of reported sightings of *LDD* activity within the EA, specifically Pike and Monroe Counties. In fact, most of the calls were from Pike County's Conservation District and Private Citizens concerned about *LDD* and looking for guidance on how to conduct a private *LDD* Suppression Program. The result of the calls was reports of *LDD* sighting of higher adult females' populations versus adult males. At the time of this report, we are told that Pike County's Commissioner's Office will not be organizing a County Level *LDD* suppression program. However, we know other larger communicates are working on a spray program for the spring 2024.

State Lands submitting treatment proposals included the Bureau of Forestry. State Game Commission has their own program with a separate contractor. Several other counties and State Forest Lands in the central parts of eastern Pennsylvania had high numbers that warranted inclusion in the state program, but they decided not to participate.

State Forest District Office 19 did submit a treatment proposal for spraying lands within Pike and Monroe County, which includes 10,336 acres within twenty (20) blocks and approved for treatment in 2024. In addition, State Forest District Office 18 did submit a treatment proposal for spraying lands within Dauphin County, which includes 5,443 acres within two (2) blocks and approved for treatment in 2024. At the time of this report, United States Forest Service (USFS), Department of Agriculture did submit proposal for spraying Grey Towers National Historic Site, which includes 79 acres within one (1) block and approval is pending. Table 1 summarizes approved acreage for the Eastern Area for 2024 suppression program.

## RECOMMENDATIONS/PROPOSED ACTION

### State Forest Lands

Pike, Monroe, and Dauphin County - High value managed timber stands and managed recreation areas. Egg mass counts are moderate to high and are increasing. Protect high value managed timber stands.

### Federal Lands

Grey Towers National Historic Site – High value historical site with managed recreation areas. Egg mass counts are high and are increasing. Protect high value historical site.

### Egg Mass Surveys

Egg mass surveys conducted by Eastern Area Forest Health, District 19, and District 18 staff through the fall and winter of 2023-2024. Hundreds of susceptible sites were examined, and new egg masses were found. Of interest is a slight increase in egg mass densities in portions of Pike, Monroe, and Dauphin Counties. Therefore, a suppression program is necessary in the Eastern Area in 2023 because *LDD* population levels are increasing within these Counties.

It is recommended that proposed areas in Pike and Monroe Counties be treated with *Bacillus thuringiensis* (Bt) and in Dauphin County be treated with *Tebufenozide* (Mimic 2LV).

Table 1 Summary of proposed treatments:

<b>Cooperator</b>	<b>Type</b>	<b>Number of Blocks</b>	<b>Acres</b>
State Forest Lands	BoF	22	15,779
United States Forest Service	Federal Land	1	79
	<b>Total</b>	<b>23</b>	<b>15,858</b>

Kendra McMillin  
Forest Health  
Program Specialist  
January 31, 2023

## **Biological Evaluation of *Lymantria dispar* Outbreaks in Pennsylvania – 2024**

### **PA DCNR Bureau of Forestry**

#### **Division of Forest Health, Northern Area**

### **INTRODUCTION**

The Northern Forest Health Area encompasses 4 State Forest Districts and 6 counties. Forest Districts in the Northern Area are Tiadaghton (D12), Susquehannock (D15), Tioga (D16), and Loyalsock (D20). Counties in the Northern Area are McKean, Potter, Tioga, Bradford, Sullivan and Lycoming. Part of the Allegheny National Forest is encompassed by the Northern Area, in western McKean County. This area is dominated by northern hardwoods, with oak stands in small pockets, except for central-southern D12 which is mostly mixed oak. Historically, districts 15, 16 and 20 have not had severe LD moth impacts, although district 12 has, especially in the southern part of the district.

The most recent outbreak of significant LD moth activity in northern Pennsylvania began to build in 2020, and is ongoing although nearing complete collapse. Prior to 2020, the 2011 – 2013 outbreak was the most recent Suppression Program conducted in the Northern Area. LD moth populations had remained low throughout most of the northern part of the state until 2020 (aside from small higher-population locations in southern Lycoming and SE Bradford Counties that had both collapsed completely by the time of surveys in 2019-2020). The current outbreak was facilitated by dry conditions throughout 2020, spring of 2021, and periodically during the growing season of 2022. However as of now, egg mass surveys conducted in the 2023-2024 survey period show that populations have collapsed across most the Northern Area except for small pockets in districts 15, 16 and 20, and most of district 12.

## METHODS

County, Bureau of Forestry, and Forest Health (FH) personnel conduct spongy moth population surveys annually. These include ground surveys and aerial surveillance flights, all at the appropriate times. The 1/40<sup>th</sup> acre fixed radius plot survey method is used to estimate egg mass densities. Visible defoliation (>30%) is mapped using GIS technology during aerial survey operations. When appropriate, causal agents, extent and population trends are verified via ground checks afterward. Survey site data is recorded utilizing Apple iPad/iPhone devices and the ESRI Field Maps app. Data is uploaded to the Bureau of Forestry's FIMS system.

Treatment proposals on state lands are based on a combination of spongy moth egg mass densities, host susceptibility and forest management criteria. FH personnel perform field checks to confirm qualifying conditions. Once proposals are received and reviewed, they are accepted or rejected based on a field evaluation and data review by FH staff.

## RESULTS AND DISCUSSION

Population trends in some areas remain high, but in the vast majority of these areas egg masses are generally medium sized or smaller. Most of the high egg mass counts occur in the Tiadaghton, although there is a small area of the Susquehannock with populations in excess of 2000 egg masses per acre.

In 2023, virus impacts were notable to the north and west, especially in the Susquehannock and Tioga State Forests. In many areas of the Tiadaghton, virus impacts were noted, however egg mass counts remain high (although populations are stable or decreasing). Fungus impacts were generally less noticeable than in 2022, due to dry conditions in early summer. However, moisture levels increased mid to late summer and were generally normal, so there is hope that *Entomophaga maimaiga* continued to impact LD moth populations during pupation and egg laying.

Defoliation in 2023 was patchy, and mostly confined to the Tiadaghton as far as state forests impacted. Portions of northern Tioga and Bradford experienced heavy defoliation, although this was all on private lands. Based on the results of the field surveys conducted to date, the Northern Area is expected to experience light to no defoliation during the 2024 growing season.

We are still getting many calls from homeowners with inquiries about LD moth spraying for 2024. Most of these are from the Williamsport region, although a few have been received from northern Tioga County. Many landowners had concerns over frost impacts and therefore would like to ensure that no LD defoliation occurs in 2024 to further stress their trees.

## RECOMMENDATIONS/PROPOSED ACTION

In state forests in Potter and Tioga Counties (Susquehannock & Tioga, respectively) the outbreak is collapsing, but concern over stand health and lingering populations warrants treatment. Financial constraints justify the use of Mimic in both cases, although not all blocks qualify by LD population, particularly in the Tioga. In the Loyalsock State Forest, blow-in and stand health concerns warrant treatment of 2 blocks. Bt will be used due to district concerns about vernal pools on Jacoby Mountain, while financial constraints justify the use of Mimic in their Bradford County block. In the Tiadaghton, collapse is nearing, although populations remain high enough almost district-wide (excluding northern Tiadaghton) to warrant the use of Mimic throughout the district. In a couple blocks, they do not technically qualify by egg mass

counts for Mimic, but in those location stand health is very poor and mortality is already occurring.

Several state parks desire treatment with Bt in 2024, although all of them have been treated at least 1 year previously, and most for the previous 2 years, and populations within the parks are low.

LD egg mass surveys show overall small egg mass average sizes, which indicates that full collapse across the Northern Area is nearing and may occur in 2024.

Summary of proposed treatments:

<b>Cooperator</b>	<b>Type</b>	<b># Blocks</b>	<b>Acres</b>
State Parks	Rotary Bt	6	1,060
District 12	FW Mimic	22	60,626
District 15	FW Mimic	3	5,192
District 16	FW Mimic	2	9,170
District 20	FW Mimic, Rotary Bt	2	4,966
	<b>Total</b>	<b>35</b>	<b>81,014</b>

Sarah Johnson

Forest Health Program Specialist

1-3-2024

# **2024 Pennsylvania Cooperative *Lymantria dispar dispar* Suppression Project**

## **Environmental Description**

Prepared by  
Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry  
In Cooperation with  
United States Department of Agriculture Forest Service  
And  
United States Fish and Wildlife Service  
And  
Pennsylvania Game Commission  
And  
Pennsylvania Fish and Boat Commission  
And  
Pennsylvania Historical and Museum Commission

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Pennsylvania Department of Conservation and Natural Resources,  
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P.O. Box 8552, 6<sup>th</sup> Floor, RCSOB  
Harrisburg, PA 17105

March 29, 2024

### **List of Cooperators**

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## **PROJECT DESCRIPTION**

The Pennsylvania Department of Conservation and Natural Resources (PA-DCNR) in cooperation with the United States Department of Agriculture-Forest Service (USDA-FS) as part of the *Lymantria dispar dispar* Suppression Program, proposes to treat the area and acreage described in Table 1.

Proposed treatments will use a single application of Btk Foray 76B (38 CLU @ ½ gal. per acre), or Mimic 2LV (5 fl. oz. per acre @ ½ gallons per acre)

Table 1. 2024 Proposed Treatment Acreage for *Lymantria dispar dispar* Suppression Program  
**GMSP 2024 By Contract and Ownership**

	Rotary Bt		Fixed Wing Bt		Fixed Wing Mimic		Total	
	Blocks	Acres	Blocks	Acres	Blocks	Acres	Blocks	Acres
<b>Private Resid</b>								
<b>State Forest</b>	23	15,018	0	0	128	204,553	151	219,571
<b>State Parks</b>	20	2,740	0	0	1	227	21	2,967
<b>PGC</b>								
<b>Fed</b>	1	79					1	79
<b>Totals</b>	<b>44</b>	<b>17,837</b>	<b>0</b>	<b>0</b>	<b>129</b>	<b>204,780</b>	<b>173</b>	<b>222,617</b>

<b>Second Bt Application</b>								
<b>State Forest</b>	11	5,124					162	224,695
<b>State Parks</b>	0	0					21	2,967
<b>Federal</b>	1	79					2	158
<b>Total Double Bt</b>	12	5,203						
<b>Total</b>	<b>56</b>	<b>23,040</b>	<b>0</b>	<b>0</b>	<b>129</b>	<b>204,780</b>	<b>185</b>	<b>227,820</b>

The treatments will take place in April-May-June, depending on insect phenology, to synchronize the aerial application with the most susceptible stage of *Lymantria dispar*. Private aerial contractors under the supervision of Division of Forest Health will conduct the treatment.

## **PUBLIC INVOLVEMENT**

Pennsylvania DCNR emphasizes ongoing communication with organizations and individuals interested in the *Lymantria dispar* project. Because DCNR has conducted *Lymantria dispar* suppression projects since 1972, the lines of communication are well established with land managers and the public.

County and municipal coordinators and public meetings were not needed for the current program because no private lands are being sprayed.

Public Access to Project Plans – *Lymantria dispar dispar* suppression project plans are made available to state and federal agencies, such as the Pennsylvania Fish and Boat Commission, the Pennsylvania Game Commission, the Pennsylvania Department of Environmental Protection, and the United States Fish and Wildlife Service. All interested parties can review copies of suppression project plans and maps of the proposed treatment areas at the Division of Forest Health areas office listed on the cover page. All interested groups and individuals are

encouraged to respond with their comments or concerns.

State and local agencies will ensure that people recreating in designated treatment areas are aware of the impending spraying. DCNR also issues a Press Release at the beginning of the program. An interactive map on the DCNR Bureau of Forestry's web page will provide progress updates on the suppression program.

#### **AUTHORIZING LAWS AND POLICIES**

The Pennsylvania *Lymantria dispar dispar* suppression project is conducted by the Division of Forest Health, Bureau of Forestry, Department of Conservation and Natural Resources, under authority of Act No. 18 of 1995, with the purpose of reducing *Lymantria dispar dispar* populations to mitigate the aesthetic, economic, and environmental losses caused by *Lymantria dispar dispar* caterpillars feeding on forested areas. This is accomplished through our *Lymantria dispar dispar* suppression project that is a cooperative venture between the Commonwealth, the USDA Forest Service, and the US Fish and Wildlife Service.

#### **ENVIRONMENTAL REVIEW AND COMPLIANCE WITH THE ENDANGERED SPECIES ACT**

All proposed spray blocks were submitted to the Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, United States Fish and Wildlife Service, and Pennsylvania Historical and Museum Commission for environmental review (PNDI). Please see the PNDI response letters below for all measures and recommendations made by each agency. All measures will be implemented. DCNR also added a ¼ mile no spray and no fly buffer around known bald eagle nests, which does not appear in any of the clearance letters but was requested by the jurisdictional agency.

Pennsylvania Department of Conservation and Natural Resources:



BUREAU OF FORESTRY

MEMO

**TO:** Andrew Rohrbaugh  
Section Chief, Program Services and Support Section  
Division of Forest Health

**FROM:** Kelly Sitch  
Ecologist  
Ecological Services Section

**DATE:** January 8, 2024

**RE:** 2024 Proposed Spongy Moth Suppression Program Spray Blocks  
PNDI # 797510

Dear Andrew,

Thank you for submitting the 2024 Spongy Moth Suppression Program proposed spray blocks to Ecological Services for review. As you know, a team from the Conservation Science and Ecological Resources Division worked with Betsy Leppo (Invertebrate Zoologist, PA Natural Heritage Program) to review all proposed blocks for potential impacts to state-listed lepidoptera and to high value lepidoptera habitat. This included a review of not only PNDI data, but also potential impacts within right-of-way corridors, wetlands, and vernal pool communities.

Furthermore, I wish to thank you and your staff for your willingness to be a part of the review process and discussion regarding potential impacts within certain blocks. Working with district managers, Forest Health staff reduced some blocks to remove vernal pools, open-canopy wetlands and large right-of-way corridors, further protecting potential habitat for native lepidoptera. In particular, the Buckhorn Natural block in the Delaware State Forest was further reduced to limit impacts to potential barrens habitat.

Based on our review and the revisions to certain proposed spray blocks, I recommend that you proceed with our updated treatment blocks in 2024. No impact is anticipated to any known state-listed lepidoptera populations as a result of these treatments. Please retain a copy of my memo for your records. This response represents the most up-to-date summary of the PNDI data files and is valid for two (2) years from the date of this letter. Feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Kelly Sitch", is written over a light blue horizontal line.

Ph: 717-425-5370  
[kesitch@pa.gov](mailto:kesitch@pa.gov)

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November 14, 2023

Andrew Rohrbaugh  
DCNR  
400 Market Street  
Ecological Services, Bureau of Forestry  
Harrisburg, Pennsylvania 17101  
[anrohrbaug@pa.gov](mailto:anrohrbaug@pa.gov)

PNDI Receipt File: *project\_receipt\_2024\_lymantria\_dispar\_tre\_797510\_FINAL\_1.pdf*  
Re: 2024 Lymantria dispar Treatment  
PA State Parks and Forests within: Bradford, Cambria, Cameron, Centre, Clearfield, Clinton, Cumberland, Dauphin, Franklin, Huntingdon, Juniata, Lycoming, Mifflin, Monroe, Perry, Pike, Potter, Snyder, Tioga and Union Counties

Dear Andrew Rohrbaugh,

Thank you for submitting the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt *project\_receipt\_2024\_lymantria\_dispar\_tre\_797510\_FINAL\_1.pdf* for review. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

**No Impact Anticipated – PNDI Species**

PNDI records indicate species or resources of concern are located within the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, the PGC has determined that no impact is likely. Therefore, no further PNDI coordination with the PGC will be necessary for this project at this time.

This response represents the most up-to-date summary of the PNDI data files and is valid for two (2) years from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements under this agency for two additional years.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat

Commission have been contacted regarding this project as directed by the online PNDEIR Tool found at [www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us).

Sincerely,



Sue Guers  
Wildlife Biologist / Environmental Review Lead  
Bureau of Wildlife Management  
Phone: 717-787-4250, Extension 73412  
Fax: 717-787-6957  
E-mail: [suguers@pa.gov](mailto:suguers@pa.gov)

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## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Pennsylvania Field Office  
110 Radnor Road, Suite 101  
State College, Pennsylvania 16801-4850

December 12, 2023

Andrew Rohrbaugh  
Program Services and Support Section  
Division of Forest Health  
Pennsylvania Department of Conservation and Natural Resources  
Bureau of Forestry  
400 Market Street, 6th Floor  
P.O. Box 8552  
Harrisburg, PA 17105

RE: USFWS Project #2024-0004243  
PNDI Project #797510\_FINAL\_1

Dear Mr. Rohrbaugh:

Thank you for your project submission of October 23, 2023, requesting information about federally threatened and endangered species within the area affected by the Pennsylvania Department of Conservation and Natural Resources (DCNR) 2024 *Lymantria dispar* (previously known as gypsy moth) suppression program. Forest blocks in Bradford, Cambria, Cameron, Centre, Clearfield, Clinton, Cumberland, Dauphin, Franklin, Huntingdon, Juniata, Lycoming, Mifflin, Monroe, Perry, Pike, Potter, Snyder, Tioga, and Union Counties will be treated with either *Bacillus thuringiensis* (Bt; Foray® 76B) or tebufenozide (Mimic®) and applied aerially via helicopter and/or fixed wing aircraft. Open bodies of water and open wetlands (i.e., <75% canopy cover) will be buffered by 300 feet when applying tebufenozide. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) and the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended; 16 U.S.C. 668-668d).

The proposed spray blocks occur near habitat occupied by the federally endangered northeastern bulrush (*Scirpus ancistrochaetus*), the federally threatened bog turtle (*Glyptemys muhlenbergii*), the federally protected bald eagle (*Haliaeetus leucocephalus*), and federally endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*). Based on the information you provided, we do not anticipate toxicity-related effects to any federally protected species, since Bt and tebufenozide specifically target lepidopterans (i.e., butterflies and moths). With respect to federally protected species that occur in or near the project area, our effect determinations are summarized below:

Species	Effect Determination	Rationale for Determination
Northeastern bulrush	No effect	Spray agents have no herbicidal effects.
Bog turtle	Insignificant or discountable effects	Drift and runoff from tebufenozide can be hazardous to aquatic organisms; Open bodies of water and open wetlands (i.e., <75% canopy cover) will be buffered by 300 feet when applying tebufenozide.  <i>Bt</i> is virtually non-toxic to vertebrates.
Indiana bat	Insignificant or discountable effects	The project is not within known swarming or maternity habitat for Indiana bats.  <i>Bt</i> does not appear to have direct effects on mammals (Belousova et al. 2021, Thompson 2011, USDA Forest Service 2004)  Tebufenozide does not appear to have direct effects on mammals (Belousova et al. 2021).  Please note there is a study (Leroy et al 2021) that describes monitoring a bat community through acoustic monitoring following application of tebufenozide but the monitoring results are not yet available.
Northern long-eared bat	Insignificant or discountable effects	The project is located within known maternity and swarming habitat for northern long-eared bats.  Spray blocks within the known habitat are small compared to the amount of available habitat in the vicinity of the treatment area.  Lactating females are opportunistic foragers and will feed on a variety of prey.  <i>Bt</i> does not appear to have direct effects on mammals (Belousova et al. 2021, Thompson 2011, USDA Forest Service 2004)  Mimic does not appear to have direct effects on mammals (Belousova et al. 2021)

		Please note there is a study (Leroy et al 2021) describing monitoring a bat community through acoustic surveys following application of tebufenozide; however, the monitoring results will not be available until 2024.
Bald eagle	Please evaluate the project type, size, location and layout in light of the <i>National Bald Eagle Management Guidelines</i> to determine whether or not bald eagles might be disturbed as a direct or indirect result of this project. If it appears that disturbance may occur, we recommend that you consider modifying your project consistent with the <i>Guidelines</i> . These guidelines, as well as additional eagle information, are available at <a href="https://www.fws.gov/media/national-bald-eagle-management-guidelines">https://www.fws.gov/media/national-bald-eagle-management-guidelines</a> . To assist you in making a decision regarding impacts to bald eagles, a screening form can be found at <a href="https://www.fws.gov/media/northeast-bald-eagle-project-screening-form">https://www.fws.gov/media/northeast-bald-eagle-project-screening-form</a>	

#### Frosted Elfin

In addition, please be aware the project is located in or near counties with historic records of frosted elfin (*Callophrys irus*) butterflies. Specifically, Clinton, Centre, Dauphin, and Monroe Counties contain historical records. We recommend you contact the Pennsylvania Natural Heritage Program for more information on frosted elfins, and how to avoid and minimize impacts to butterflies.

Frosted elfin, an at-risk butterfly, is currently being evaluated for protection under the Endangered Species Act (Act). Frosted elfin is difficult to detect and has likely persisted at low numbers in conjunction with its host plants: false indigo (*Baptisia tinctoria*) and wild lupine (*Lupinus perennis*). The U.S. Fish and Wildlife Service (Service) is working closely with state wildlife agencies and natural heritage programs throughout the frosted elfin range to assess the butterfly's abundance and distribution. The Service plans to make a decision on whether the species warrants listing in 2025. Although a complete inventory of Pennsylvania frosted elfin populations is currently lacking, we have observed extant populations in power and transmission line rights-of-way. We recommend avoiding use of pesticides in rights-of-way to protect potential unknown frosted elfin populations. For more information on frosted elfin, please see: [https://www.fws.gov/sites/default/files/documents/508\\_frostedelfin\\_speciesstatusassessment.pdf](https://www.fws.gov/sites/default/files/documents/508_frostedelfin_speciesstatusassessment.pdf)

To address loss of pollinator diversity and abundance in Pennsylvania, conservation partners representing an array of stakeholders, including state and national level organizations, developed the Pennsylvania Pollinator Protection Plan (P4). As outlined in the P4, declines in pollinator diversity and abundance have mainly been driven by habitat loss, pesticide use, invasive species, and pathogens. P4 provides pollinator biology and best management practices (BMPs) for diverse landscapes, including urban, roadside, agricultural, and natural areas. Please see the following link to access the P4: <https://pollinators.psu.edu/bee-health/pennsylvania-pollinator-protection-plan-p4#:~:text=The%20Pennsylvania%20Pollinator%20Protection%20Plan,the%20varied%20landscapes%20in%20Pennsylvania>. Please see Chapter 3 to learn more about best practices in relation to pesticide use. Please note, the P4 will be updated as new information is available.

#### Monarch

Additionally, in 2020, the Service determined that listing the monarch butterfly (*Danaus plexippus*) as threatened or endangered under the Act is warranted but precluded by higher priority listing actions (for more information, please see:

<https://www.fws.gov/media/monarch-butterfly-species-status-assessment-ssa-report>. With this finding, the monarch became a candidate species under the Act and its status will be reviewed annually.

Candidate species receive no statutory protections under the Act but the Service encourages cooperative conservation efforts because they are, by definition, species that warrant protection. We recommend you assess the project to ensure you are following the best practices in relation to monarch conservation. In addition to the P4 link above, BMPs for monarchs are available here:

<https://monarchjointventure.org/mjvprograms/science/roadside-habitat-for-monarchs/best-management-practices-resources>. Lastly, for more information on candidate species, please see: <https://www.fws.gov/sites/default/files/documents/Candidate-Species.pdf>.

#### Tricolored bat

On September 14, 2022, the Service published a proposal in the Federal Register to list the tricolored bat (*Perimyotis subflavus*) as endangered under the Act. The Service is working on a final determination, either to list the tricolored bat or to withdraw the proposal.

This response is based on the information submitted to our office and our knowledge of species distribution and habitat needs. No field inspection of the project area has been conducted by this office.

*To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project*

---

Please contact Nicole Ranalli of my staff at 814-206-7455 or [nicole\\_ranalli@fws.gov](mailto:nicole_ranalli@fws.gov) if you have any questions or require further assistance.

Sincerely,



Sonja Jahnsdoerfer  
Project Leader

#### Literature Cited

Belousova, M. E., Malovichko, Y. V., Shikov, A. E., Nizhnikov, A. A., & Antonets, K. S. (2021). Dissecting the environmental consequences of *Bacillus thuringiensis* application for natural ecosystems. *Toxins*, 13(5): 355. <https://doi.org/10.3390/toxins13050355>

Leroy, Benjamin ML, Hannes Lemme, Philipp Braumiller, Torben Hilmers, Martin Jacobs, Sophia Hochrein, Sebastian Kienlein et al. (2021). Relative impacts of gypsy moth outbreaks and insecticide treatments on forest resources and ecosystems: An experimental approach. *Ecological Solutions and Evidence* 2(1): e12045. <https://doi.org/10.1002/2688-8319.12045>

McClintock, J.T., Schaffer, C.R. and Sjoblad, R.D. (1995). A comparative review of the mammalian toxicity of *Bacillus thuringiensis*-based pesticides. *Pestic. Sci.*, 45: 95-105. <https://doi.org/10.1002/ps.2780450202>

Thompson, D. G. (2011). Ecological impacts of major forest-use pesticides. *Ecological impacts of toxic chemicals*. Edited by F. Sanchez-Bayo, P. van den Brink, and RM Mann. Bentham Publishers, 88-110.

USDA Forest Service (2004). Control/Eradication Agents for the Gypsy Moth- Human Health and Ecological Risk Assessment for B.t.k.-Final Report. Prepared by Syracuse Environmental Research Associates, Inc. Requisition # 43-3187-1-0269, Task #5. [https://parks.coloradosprings.gov/sites/default/files/images/control\\_eradication\\_agents\\_for\\_the\\_gypsy\\_moth\\_human\\_health\\_and\\_ecological\\_risk\\_assessment.pdf](https://parks.coloradosprings.gov/sites/default/files/images/control_eradication_agents_for_the_gypsy_moth_human_health_and_ecological_risk_assessment.pdf)

The following measures were taken to protect frosted elfin and monarch butterflies as requested by the US Fish and Wildlife Service:

- areas will be sprayed as early as possible (specific timing is dependent on *Lymantria dispar* development) to reduce threats to non-target lepidopteran species of concern such as frosted elfin and the monarch which also emerge in May
- large ROW's were cut out of the spray blocks, in order to minimize impact to early successional habitat and potential host plant species

The following measures were taken to protect bald eagles as requested by the US Fish and Wildlife Service:

- all known eagle nests were buffered by at least 1,000 feet

## Pennsylvania Fish and Boat Commission



October 27, 2023

**IN REPLY REFER TO**  
**SIR# 58786**

**DCNR**  
**Andrew Rohrbaugh**  
**400 Market Street**  
**Harrisburg, Pennsylvania 17101**

**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species**  
**PNDI Search No. 797510\_1**  
**2024 Lymantria dispar Treatment**

Dear Andrew Rohrbaugh:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search “potential conflict” or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish and Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish and Boat Code (Chapter 75), or the Wildlife Code.

An element occurrence of a rare, candidate, threatened, or endangered species under our jurisdiction is known from the vicinity of the proposed project. However, given the nature of the proposed project, the immediate location, or the current status of the nearby element occurrence(s), no adverse impacts are expected to the species of special concern.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

Division of Environmental Services  
595 East Rolling Ridge Drive | Bellefonte, PA 16823 | Phone: 814.359.5147 | [fishandboat.com](http://fishandboat.com)

---

SIR # 58786  
October 27, 2023  
Page 2

If you have any questions regarding this review, please contact Kathy Gipe at 814-359-5186 or [c-kgipe@pa.gov](mailto:c-kgipe@pa.gov) and refer to the SIR # 58786. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

A handwritten signature in black ink that reads "Christopher A. Urban". The signature is written in a cursive style with a large, stylized "C" at the beginning.

Christopher A. Urban, Chief  
Natural Diversity Section

CAU//KDG/dn

Pennsylvania Historical and Museum Commission

Good afternoon, Andrew,

Please accept this as a formal response from our office that the proposed project (spongy moth aerial treatment) does not require further consultation with our office, as the project has no potential to affect historic properties.

If you need anything else, please feel free to contact me directly.

Thank you,  
Emma

**Emma Diehl** (she/her) | Environmental Review Division Manager  
Pennsylvania State Historic Preservation Office  
Pennsylvania Historical & Museum Commission  
400 North Street, 2<sup>nd</sup> Floor | Harrisburg, PA 17120-0093  
Phone: 717.787.9121 | Email: [emdiehl@pa.gov](mailto:emdiehl@pa.gov)

**COMPLIANCE WITH THE CLEAN WATER ACT**

The Division of Forest Health has coordinated the submission of an Individual Permit application (NPDES permit) with the Pennsylvania Department of Environmental Protection. The application was approved and an Individual Permit was issued for five years in 2023 (NPDES Permit No. PA0270776).

# ***Safety, Security, and Air Operations Work Plans***

## **2024 Cooperative *Lymantria dispar dispar* Suppression Program**

**Commonwealth of Pennsylvania  
Department of Conservation and Natural Resources  
Bureau of Forestry  
Division of Forest Health  
400 Market Street, 6<sup>th</sup> Floor, PO Box 8552  
Harrisburg, PA 17105-8552**

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## *SAFETY PLAN*

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## **I. GENERAL STATEMENT OF BUREAU OF FORESTRY SAFETY POLICY**

All activities carried out in connection with the operational phase of the Bureau of Forestry's forest insect pest suppression program will be conducted with primary consideration given to the personal safety of persons involved in the operation including Bureau of Forestry employees, spray application contractor personnel, various cooperator personnel, and the general public. Each person involved in the program will strictly adhere to the safety regulations presented in this safety plan as well as all safety regulations presented in the Bureau of Forestry Safety Code. Failure by an individual to follow any of these regulations increases the potential for serious injury or even death to that person or others. Therefore, blatant or consistent disregard for these safety regulations will be cause for removing that individual from the operation.

## **II. GENERAL SAFETY PROCEDURES**

### **A. *Personal Safety***

#### **1. Hard Hats**

Approved hard hats must be worn as specified by the Bureau of Forestry Safety Code including wearing one when working in a forested area that has an overhead canopy or at any aircraft landing/loading zone site. When working at an aircraft landing/loading zone site, an approved and properly installed chinstrap must be utilized.

#### **2. Goggles**

Approved goggles must be worn when working around aircraft that have their engines running.

#### **3. Ear Plugs**

Approved earplugs or earmuffs must be worn when working around operating aircraft and/or pumps.

#### **4. Safe Lifting**

Help must be utilized when lifting heavy items including, but not limited to, helium tanks. Proper lifting techniques must be utilized, such as lifting with the legs and not the back.

#### **5. Staying Alert**

Personnel will be working nonstandard work hours, including very early daily starts, late stops, and/or weekend work, and will often be working more than the normal number of hours in the workday. As a result, fatigue can rapidly set in. It is imperative under these circumstances that workers get as much rest as possible. Anyone who feels unable to perform their duties safely because of fatigue must inform their supervisor immediately. Supervisors must also check their subordinates' performance frequently and take appropriate action if signs of fatigue develop.

## **6. Dressing to Be Visible**

All marking/monitoring technicians must wear light-colored clothes and fluorescent-colored vests with reflective striping when working along public highways or streets.

## **B. Vehicle Safety**

### **1. Defensive Driving**

All personnel must practice defensive driving techniques at all times and must be especially cautious when program activities require driving at night, dawn, or dusk. Driving must be curtailed whenever a person shows signs of fatigue.

### **2. Seat Belts**

All vehicle occupants must properly use the vehicle's seat belt and shoulder restraint system anytime the vehicle is in operation.

### **3. Four-Way Flashers/Amber Flashing Light**

The vehicle's four-way flashers and/or amber rooftop-mounted flashing light must be used anytime the vehicle is driven at a speed significantly below the allowable speed limit such as when looking for spray block-marking points. Likewise, they must be used whenever the vehicle is stopped or parked in a potentially hazardous location.

### **4. Warning Triangles**

Reflective-warning triangles must be placed sufficiently far enough in advance of any stopped or parked vehicle or roadside landing/loading zone setup where a hazard to oncoming vehicular traffic would be created.

### **5. Identification Signs**

All vehicles involved with the spray operation must be provided with signs, either permanent or removable magnetic, which identify the vehicle as being part of the project.

## **C. Aircraft**

### **1. Aircraft Security**

The Contractor must abide by any current regulations issued by the FAA with regard to aircraft safeguarding and security, as well as any rules and/or recommendations that are issued by the National Association of Aerial Applicators, the USDA Forest Service, or any other responsible agency. At a minimum, the Contractor must provide the following:

- All spray aircraft must be disabled when not in use so that they cannot be started by anyone other than authorized personnel.
- All spray aircraft must be attended or guarded at all times.
- When guard service for the aircraft and/or support equipment is required, the Contractor must provide the necessary personnel.

### **2. Riding in Aircraft**

Bureau of Forestry employees are not permitted to ride in a spray aircraft for any reason. Designated employees may ride in approved auxiliary aircraft supplied by the aerial application contractor or in approved aircraft supplied under the bureau's light aircraft contracts. Such employees will serve as observers for the spray operation and are cautioned to require the aircraft pilot to maintain at least a 1,500-foot altitude above-ground level when over any working spray aircraft. Where it is agreed to be mutually advantageous, a Bureau of Forestry employee familiar with the area may fly in an approved observation aircraft on certain reconnaissance flights to locate and delineate boundaries of the spray areas.

## **D. Landing/Loading Zones**

### **1. Caution Around Aircraft**

Only authorized personnel who have been thoroughly briefed on safety precautions are permitted to be in the landing/loading zone area. Extreme caution must be exercised when working in the vicinity of operating aircraft. The aircraft pilot must be made visually aware of any individual approaching or leaving the aircraft. No smoking is permitted within the landing zone perimeters. Extreme care must be taken to stay clear of the aircraft's exhaust ports and propeller or rotors—second chances will not be available.

All light equipment and loose articles must be weighted or tied down in the landing zone.

## **2. Aircraft Refueling**

Any refueling of the aircraft done while the engine is running and/or the rotor spinning must be done by hose line and nozzle only. Fueling from containers will be permitted only during complete engine shutdown. Proper aircraft/fuel truck bonding procedures as approved by the National Fire Protection Association must be followed while refueling.

## **3. Leaks**

If any leaks are observed in the tanks, hoppers, spray systems, hoses, pumps, meters, or any component used for insecticide storage, handling, mixing, or dispensing, the spray operation must be stopped until such leak is repaired.

## **4. Fire Extinguisher**

The aerial application contractor must provide readily accessible and properly sized and coded fire extinguisher at the landing/loading zone. All personnel, both Bureau of Forestry and contractor, working at the landing/loading zone must be instructed in the location and proper use of those fire extinguisher.

## **5. Spectators**

No spectators or other unauthorized personnel are permitted within the designated perimeters of the landing/loading zone or takeoff area.

# **E. Pilots**

## **1. Helmets**

All spray aircraft pilots must wear a FAA-approved helmet.

## **2. Seat Belts**

All spray aircraft must be equipped with, and the pilot must use, a FAA-approved shoulder harness and lap belt.

## **3. Protective Clothing**

All spray aircraft pilots must wear a Nomex flight suit, Nomex gloves, eight-inch leather boots, and 100 percent cotton undergarments and stockings.

## **4. Flight Time Limits for Spray Aircraft Pilots**

- a. A maximum of eight (8) hours of flight time may be accumulated per duty day. The eight (8) hours of daily flight time must be split into at least two separate segments each separated by a break of at least 30 minutes. A

maximum of five (5) consecutive hours of flight time may be flown during any segment.

- b. To qualify as a break between segments of flight time, a break period must be of at least 30 minutes' duration during which the spray pilot is restricted to meals and resting. The pilot may not conduct any job connected with the spray operations during the first four (4) hours of this break period if additional flight time is anticipated during the duty day.
- c. A mandatory qualified break of at least 30 minutes must be taken after five (5) consecutive hours of flight time during a duty day. A 30-minute break may be taken at the pilot's discretion any time after the first 2.5 hours of flight time. Voluntary breaks and breaks necessitated by operational conditions such as weather or equipment failure qualify as an acceptable break between flight time segments provided they satisfy the conditions and limitations stated above in b.
- d. The pilot may take five-minute breaks anytime during reloading operations.
- e. A pilot accumulating 36 or more hours of flight time in any six consecutive days or less must have a rest day the following full calendar day. Cumulative flying hours or days start again at zero after each rest day.
- f. A pilot must have two (2) rest days during any 14 consecutive days.
- g. A pilot must have a minimum of eight (8) consecutive hours off duty prior to the start of flight time during the next duty day.

## **5. Recon Flights**

In accordance with contract specifications and FAR 137 regulations, the spray pilot must conduct a reconnaissance flight over each spray block prior to treatment to ascertain the block layout and to identify and avoid any flight hazards or congregations of people including children waiting for school buses. In addition, if the spray pilot has difficulty with navigation, the aerial application contractor must supply an auxiliary aircraft with pilot and, if necessary, navigator to preview all spray blocks prior to the start of spraying and to supply navigation and reconnaissance assistance to the spray pilot.

## **6. Aircraft Safety**

The pilot is responsible at all times for the proper maintenance and the safe operation of the aircraft. The pilot is not required to fly in fog, dense smoke, or under any other adverse conditions which a prudent pilot would avoid nor is the pilot required to operate from any site which the pilot considers unsafe.

The pilot must maintain a minimum 20-minute reserve fuel supply over the amount needed for the planned round trip for each flight. The pilot is responsible for the proper loading of the aircraft. Loading is under the pilot's direction and must be inspected by the pilot before takeoff. The weight must not exceed the maximum gross weight specified by the aircraft manufacturer. The pilot must compensate for altitude, temperature, landing zone conditions, and any adverse flying conditions.

**F. *Spray Block Marking (ETGARS)***

Each spray aircraft will be equipped with an electronic tracking, guidance, and recording system (ETGARS) that will assist the pilot in accurately locating the spray block and ensure that it is effectively sprayed.

**III. INSECTICIDE AND OTHER CHEMICALS**

**A. *Insecticide Security***

The Contractor must abide by any current regulations issued by the FAA with regard to insecticide safeguarding and security, as well as any rules and/or recommendations that are issued by the National Association of Aerial Applicators, the USDA Forest Service, or any other responsible agency. At a minimum, the Contractor must provide the following:

- Chain-of-custody documentation from the point of manufacture to delivery to the Contractor for the insecticide utilized.
- All insecticide holding containers, hoppers, mix tanks, pumps, hoses, and similar equipment must be flushed prior to the start of operations and must have all possible points of entry sealed and secured when not in use.
- All insecticide and insecticide-handling equipment must be attended or guarded at all times.
- Access to the insecticide loading and storage areas must be restricted to authorized personnel of the Contractor and Department.
- When guard service for the insecticide and/or support equipment is required, the Contractor must provide the necessary personnel.

**B. *Insecticide Labels and MSDSs***

Copies of the appropriate label(s) for the insecticide(s) to be used on the project along with copies of the MSDSs for the insecticides(s) scheduled for use are attached to this

safety plan, and each person involved in the operation must read them prior to the start of spraying operations.

**C. Storage**

It is the responsibility of the aerial application contractor to locate and arrange for a suitable site to store insecticide and adjuvants where they will be secure and protected from damage. These materials may be stored on district property at the discretion of the forest district manager. Any such storage area must be posted and, if necessary, local emergency personnel notified of the storage and provided with an MSDS.

**D. Mixing and Handling**

It is the responsibility of the aerial application contractor's personnel to handle and mix the insecticide in strict accordance with insecticide manufacturer's recommendations. All persons involved with mixing or handling the insecticide must wear protective clothing as specified on the insecticide label.

District personnel are prohibited from participating in the mixing procedure. In addition, district personnel are not permitted to handle or transport any insecticide or other chemicals used in the project except in an emergency. In such instances, protective gear as specified in the label must be provided and used.

**E. Contamination With Insecticide**

If any insecticide is ingested, consult the MSDS for first aid procedures and, if necessary, obtain medical attention. If dermal contamination occurs, the affected area must be washed with soap and water. Contaminated clothing must be washed before being worn again. Wash contaminated clothing separate from other clothing.

Any insecticide in the eye must be removed by flushing with large quantities of clear water and medical attention obtained.

**F. Precautions in Spray Blocks**

If at all possible, personnel in the block at the time of spraying should stay in their vehicle and wait until the spray cloud settles before getting out. If outside when spraying occurs, they must not look up until after the spray cloud settles to avoid eye contamination.

**IV. RADIO COMMUNICATIONS**

**A. *VHF Communications***

The Contractor must equip each spray and auxiliary aircraft with an operating VHF (FAA frequencies) communications system consisting of equipment currently approved by the FCC and FAA. Channels must include the tower and ground control frequency (including 720 channel) most often used in the Contractor's area of operation while under agreement to the Department.

The receiver for the VHF communications system must not be part of a navigational system.

Each ground-support crew must be equipped with a mobile or portable VHF transmitter/receiver that will permit communication with the spray and/or auxiliary aircraft.

**B. *FM Radio***

Each spray and auxiliary aircraft must be equipped by the Contractor with a field-programmable, rack-installed or portable FM radio transmitter-receiver (5-10 watts output with a range of 148.0 MHz to 174.0 MHz), compatible externally mounted antenna designed for aircraft use, and a compatible crash helmet microphone/headset assembly for the pilot and each operating crewmember (microphone/headset assembly required for auxiliary aircraft pilot and crewmembers-helmet optional).

**C. *Daily Check***

All radios used on the spray project, both Bureau of Forestry and contractor supplied, must be checked before the start of each spray session (morning and evening) to ensure that air-to-ground and ground-to-air communications are acceptable.

**D. *Suspension of Operations***

If air-to-ground or ground-to-air radio communications are not acceptable, the spray session must be suspended until acceptable communications are reestablished.

**V. *ACCIDENT RESPONSE AND REPORTING***

**A. *Emergency Contacts List***

Each forest district involved in the annual project is required to prepare an emergency contacts list as shown in Appendix 1. The emergency contacts lists from all participating districts are combined into a single package and supplied to all field personnel working on the project.

**B. *Personal Injury***

If an accident occurs which results in personal injury, any necessary medical attention must be obtained immediately. The field project coordinator, DPL, and the district office contact must be notified as soon as possible. If the situation warrants, the program supervisor in Harrisburg must be notified. If the injured party is a Bureau of Forestry employee, he/she or, if incapacitated, his/her supervisor must fill out an accident reporting form as required by Bureau of Forestry procedures.

**C. *Vehicle Accident***

If a vehicular accident results in personal injury, any necessary medical attention must be obtained immediately. In addition, whether or not there is personal injury involved, the local or state police must be contacted in order to report the accident. The vehicle must not be moved until instructed to do so by the police. If another vehicle(s) is involved, license, registration, and insurance information must be exchanged with the other driver(s). The field project coordinator, DPL, and district office contact must be notified as soon as possible. If the situation warrants, the program supervisor in Harrisburg must be notified.

Any personal injury to a Bureau of Forestry employee must be reported as explained under Section A above. Bureau of Forestry procedures must be followed as directed by the employee's supervisor for reporting the vehicle accident if a Bureau of Forestry vehicle was involved.

**D. *Minor Spill of Insecticide or Fuel***

If a minor spill (five gallons or less) of insecticide or fuel occurs as a result of the aerial application contractor's actions, immediate action must be taken to contain the spill and prevent it from getting into any water source. The contractor is required to have materials on hand and to take any action necessary to clean up the spill according to acceptable procedures.

If dermal contamination occurs, the affected areas must be washed at once. Any necessary medical attention must be obtained if oral or ocular contamination occurs. Contaminated clothing must be laundered separately before wearing again. The field project coordinator must write and file an incident report with the program supervisor.

**E. *Major Spill of Insecticide or Fuel***

If a major spill (generally greater than five gallons) of insecticide or fuel spill occurs, medical attention must be obtained, if necessary, for anyone who is contaminated. The name of the nearest poison control center and/or hospital is listed on the attached

emergency contacts list. Follow the procedures under Section C above for washing contaminated skin and laundering contaminated clothing if medical attention is not required.

Immediate action must be taken to contain the spill and prevent it from contaminating any water source. The contractor is responsible for having materials on hand to initiate containment action for a spill that results from its actions. Any additional cleanup activity and costs are also the responsibility of the contractor.

The local or state police must be contacted if there are injuries involved and/or if traffic control or security is needed. Data must be gathered as to the material spilled, the exact location and extent of the spill, the land use of the spill site, and whether or not any surface water is involved in or nearby the spill. The field project coordinator, DPL, and office contact must be contacted immediately with this data. The field project coordinator, DPL, or office contact must then contact the program supervisor in Harrisburg. If an insecticide is involved, the regional Pennsylvania Department of Agriculture pesticide inspector and the insecticide company technical representative must be contacted. If surface water is involved or nearby the insecticide or fuel spill, the regional DEP Environmental Protection office and the regional Pennsylvania Fish and Boat Commission office must be notified.

The field project coordinator must write and file an incident report with the program supervisor.

#### ***F. Aircraft Accident – Minor***

If an aircraft accident occurs with no personal injuries or spills and only slight damage to the aircraft, the details must be noted on the Daily Aircraft Record. The field project coordinator, DPL, and office contact must be notified. The field project coordinator must notify the program supervisor in Harrisburg and write and file an incident report.

#### ***G. Aircraft Accident – Major***

If an aircraft accident occurs resulting in personal injuries, insecticide or fuel spill, and/or major damage to the aircraft, medical attention must be obtained immediately for any injured persons. The area must be secured and the state or local police called in to assist with security and traffic control. The field project coordinator, DPL, and office contact must be notified, and one of them must notify the aircraft operations advisor and the program supervisor. The procedures discussed above must be followed to contain any spill and to notify the proper personnel.

An Aircraft Accident Reporting and Investigation form (copy attached), must be completed and the information on it reported to the aircraft operations advisor who in turn must notify the FAA. If the aircraft operations advisor is not available, the field project coordinator must contact the FAA as instructed on the Aircraft Accident

Reporting and Investigation form. The field project coordinator must complete and file an incident report.

## **APPENDICES**

Appendix 1. Emergency Contacts List

Appendix 2. Aircraft Accident Reporting and Investigation Form

Appendix 3. Insecticide Labels and MSDS Sheets

## Appendix I. Emergency Contact Lists

### Emergency Contacts List

#### Forest Insect Pest Suppression Project

Forest District:	Michaux State Forest, District #1
District Office Call Sign	Fayetteville
Project Year:	2023
Contract:	FPM23-01 & 23-03

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
<b>Forest District Manager</b>				
Roy Brubaker		717-352-4590	717-808-8021	
<b>Assistant Forest District Manager(s)</b>				
Mike Wright		717-352-4570	717-496-3158	
Michelle Blevins		717-352-4240	717-360-0961	
<b>District Program Leader</b>				
	A-7	717-637-1770	717-434-6413	717-800-8174
<b>District Monitoring Crews</b>				
Mike Rothrock	A-4	717-401-1043	717-348-5685	n/a
Vacant Forest Tech				
Charles Kauffman	A-35	717-352-2153	717-496-1131	n/a
Vacant Forest Tech				
Trenton Bechtel	A-22	717-352-4000	717-860-9215	n/a
Eric Mitchell	A-37	717-352-2153	717-634-9058	n/a
Nate Yocum	A-11	717-352-2177	717-491-5345	n/a
Paul Lampietro	A-8	717-352-4790	717-434-6413	n/a
Mike Wright	A-3	717-352-4570	717-496-3158	n/a
Michelle Blevins	A-2	717-352-4240	717-360-0961	n/a
<b>Office Staff</b>				
Kathy Smith	Fayetteville	717-352-2211	717-377-0090	n/a
Ann Busser	Fayetteville	717-352-7970	717-385-5724	n/a
<b>Ranger Station(s)/Other District Facilities</b>				
Big Flat Heliport		717-352-7380		
<b>Airports: (list all public airports and those with controlled air space)</b>				
NAME	LOCATION	CONTACT	PHONE	
Carlisle Airport	Carlisle, PA		717-243-2133	
Franklin County Regional	Chambersburg, PA		717-948-3900	
Gettysburg Regional Airport	Gettysburg, Pa		717-324-5863	
York Airport	Thomasville, PA		717-792-5566	

### Emergency Contacts List

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig, Phone
Adams	n/a		yes	717-334-8101
Cumberland	n/a		yes	717-243-4121
Franklin	n/a		yes	717-364-1633
State Police Barracks:				
County and City	Adams			717 334-8111
County and City	Cumberland			717 249-2121
County and City	Franklin			717 264-5161
County and City				
County and City				
County and City				
County Sheriff (list only if not dispatched through county control):				
County:				
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town				
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME	Location:			
	Location:			
	Location:			
Hospitals				
NAME	ADDRESS			PHONE
UPMC Carlisle	361 Alexander Spring Rd. Carlisle, PA 17015			717-249-1212
WellSpan Chambersburg	112 N 7th St. Chambersburg, PA 17201			717-267-3000
WellSpan Gettysburg	147 Gettys St. Gettysburg, PA 17325			717-334-2121
WellSpan Waynesboro	501 E Main St. Waynesboro, PA 17268			717-765-4000

## Emergency Contacts List

### Forest Insect Pest Suppression Project

Forest District:	3
District Office Call Sign	Blain
Project Year:	2023
Contract:	FPM 23-01 & 23-03

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
<b>Forest District Manager</b>				
Scott Miller	C-1	717-536-3191	717-329-1516	
<b>Assistant Forest District Manager(s)</b>				
Andrew Glodek	C-2	717-536-3191	717-977-1540	
Nathan Fite	C-3	717-536-3191	717-576-6279	717-805-9527
<b>District Program Leader</b>				
William Devore	C-4	717-536-3191	717-580-6728	
Nathan Fite	C-3	717-536-3191	717-576-6279	717-805-9527
<b>District Monitoring Crews</b>				
Lucas Book	C-9	717-536-3191	717-966-9233	717-994-8080
Andrew Snyder	C-6	717-536-3191	717-582-1228	
Adam Kling	C-10	717-536-3191	717-503-7746	
Andrew Baker	C-7	717-536-3191	717-816-9575	
Matthew Puchalsky	C-5	717-536-3191	717-440-0580	
<b>Office Staff</b>				
Diane Thom		717-536-3191	717-802-2249	
Alison Fry		717-536-3191	717-991-8877	
<b>Ranger Station(s)/Other District Facilities</b>				
Bryner Headquarters		717-536-3328		
Bryner Garage		717-536-3043		
East Licking Creek Headquarters		717-436-2472		
<b>Airports: (list all public airports and those with controlled air space)</b>				
NAME	LOCATION	CONTACT	PHONE	
Harrisburg International	Harrisburg		717-948-3900	
Carlisle (N94)	Carlisle		717-243-2133	
Mifflintown (P34)	Mifflintown		717-436-2725	
Capital City (CXY)	New Cumberland		717-774-8335	

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig. Phone
Perry	N		Y	717-582-2131
Cumberland	N		Y	717-218-2900
Juniata	N		Y	717-436-7730
Mifflin	N		Y	717-248-9645
State Police Barracks:				
County and City	Perry Couty, Newport			717-567-3110
County and City	Juniata County, Mifflintown			717-320-1010
County and City	Cumberland County, Carlisle/Lewistown			717-249-2121
County and City	Huntington County, Huntington			814-627-3161
County and City	Franklin County, Chambersburg			717-264-5161
County and City				
County Sheriff (list only if not dispatched through county control):				
County:				
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town				
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME	Location:			
	Location:			
	Location:			
Hospitals				
NAME	ADDRESS			PHONE
PinnacleHealth Hbg	111 Front St Harrisburg, PA 17101			717-782-3131
PinnacleHealth W.Shore	1995 Technology Pkwy Mechanicsburg, PA 17050			717-791-2600
Holy Spirt	503 N.21st St Camp Hill, PA 17011			717-763-2100
Carlisle Regional	361 Alexander Spring Rd Carlisle, PA 17015			717-249-1212
Lewistown Hospital	400 Highland Ave Lewistown, PA 17044			717-248-5411

### Emergency Contacts List

Forest Insect Pest Suppression Project	
Forest District:	4
District Office Call Sign	Ligonier
Project Year:	2023
Contract:	FPM23-01

DISTRICT PERSONNEL/FACILITIES		RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
Forest District Manager					
	Edward Callahan	D-1	724-238-1200	724-212-5521	724-836-2889
Assistant Forest District Manager(s)					
	Cory Wentzel	D-3	724-238-1200	724-487-8025	724-879-4923
	Doug Langford	D-2	724-238-1200	724-244-5300	N/A
District Program Leader					
	VACANT (Cory Wentzel will stand in)	D-3	724-238-1200	724-487-8025	724-879-4923
District Monitoring Crews					
	Brandon Hosselrode	D-9	814-662-2867	240-920-4045	N/A
	Dave Planinsek	D-7	724-238-1200	724-309-8036	N/A
Office Staff					
	Kattie Pritts (primary)	N/A	724-238-1200	724-396-2128	N/A
	Kim Keller	N/A	724-238-1200	724-875-0409	N/A
Ranger Station(s)/Other District Facilities					
	Laurel Mt. Shop		724-238-5222		
Airports: (list all public airports and those with controlled air space)					
	NAME	LOCATION	CONTACT		PHONE
	Arnold Palmer Regional Air	Latrobe (Westm. Co.)			724-539-8100
	Somerset County Airport	Friedens (Som. Co.)			814-445-1599
	Connellsville Airport	Lemont Furnace (Fay. Co.)			724-628-2276
	Rostraver Airport	Belle Vernon (Westm. Co.)			724-379-6980
	Pittsburgh International Air	Pittsburgh (Alleg. Co.)			412-472-3525

### Emergency Contacts List

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
	County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?
	Westmoreland	No		Yes
	Somerset	No		Yes
	Fayette	No		Yes
State Police Barracks:				
	County and City	Westmoreland Co., Greensburg		724-832-3288
	County and City	Somerset Co., Somerset		814-445-4104
	County and City	Fayette Co., Uniontown		724-439-7111
	County and City			
	County and City			
	County and City			
County Sheriff (list only if not dispatched through county control):				
	County:			
	County:			
	County:			
	County:			
Local Police (list only if not dispatched through county control):				
	City or Town			
	City or Town			
	City or Town			
	City or Town			
	City or Town			
Ambulance (list only if not dispatched through county control):				
NAME		Location:		
		Location:		
		Location:		
Hospitals				
	NAME	ADDRESS		PHONE
	Somerset Hospital	225 South Center Ave, Somerset, PA 15501		814-443-5000
	Latrobe Hospital	121 West Second Ave, Latrobe, PA 15650		724-537-1000
	Westmoreland Hospital	532 W Pittsburgh St, Greensburg, PA 15601		724-832-4000
	Uniontown Hospital	500 W Berkeley St, Uniontown, PA 15401		724-430-5000
	Conemaugh Memorial Med	1086 Franklin St, Johnstown, PA 15905		814-534-9000

### Emergency Contacts List

<b>Forest Insect Pest Suppression Project</b>	
Forest District:	Rothrock D5
District Office Call Sign	Huntingdon
Project Year:	2023
Contract:	FPM 23-02 & 23-03

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
<b>Forest District Manager</b>				
Mark Potter	E-1	814-643-2340	814-386-0248	814-667-3509
<b>Assistant Forest District Manager(s)</b>				
Jodi Skipper	E-2	814-643-2340	814-386-2753	814-847-0033
David Yeager	E-3	814-643-2340	814-386-5615	717-414-9028
<b>District Program Leader</b>				
Mark Long	E-5	814-643-2340	814-506-4447	814-448-9999
<b>District Monitoring Crews</b>				
Mark Long	E-5	814-643-2340	814-506-4447	814-448-9999
Jake Mazzei	E-6	814-643-2340	814-386-5907	
Josh Thompson	E-7	814-643-2340	814-599-3739	
Jon Snyder	E-9	814-643-2340	215-859-6814	
Zach St. Laurent	E-10	814-643-2340	814-386-9201	
Craig Hamilton	E-31	814-643-2340	814-381-9181	
David Yeager	E-3	814-643-2340	814-386-5615	717-414-9028
<b>Office Staff</b>				
Ellie Elliott		814-643-2340	570-768-0907	
Kristy Kyper		814-643-2340		
<b>Ranger Station(s)/Other District Facilities</b>				
Whipple Dam Maintenance Hqtrs.		814-667-3420		
Greenwood Maintenance Hqtrs.		814-667-2199		
Stony Point Maintenance Hqtrs.		814-669-4593		
<b>Airports: (list all public airports and those with controlled air space)</b>				
<b>NAME</b>	<b>LOCATION</b>	<b>CONTACT</b>	<b>PHONE</b>	
Mifflin Co.	Reedsville		717-667-6829	
State College	State College		814-865-5511	
Bellefonte	Bellefonte		814-793-2027	

### Emergency Contacts List

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig, Phone
Centre	no		yes	800-479-0050
Huntingdon	no		yes	814-843-3980
Mifflin	no		yes	717-248-9807
State Police Barracks:				
County and City	Mifflin County Lewistown			717-320-1010
County and City	Huntingdon County Huntingdon			814-827-3181
County and City	Centre County Bellefonte (Rockview)			814-355-7545
County and City	Centre County State College			814-863-4846
County and City				
County and City				
County Sheriff (list only if not dispatched through county control):				
County:				
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town				
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME	Location:			
	Location:			
	Location:			
Hospitals				
NAME	ADDRESS			PHONE
PennHighlands Huntingdon	Warm Springs Avenue Huntingdon PA 16852			814-843-2290
Mt.Nittany Medical Center	1800 East Park Avenue State College PA 16801			814-231-7000
Geisinger Lewistown	400 Highland Avenue Lewistown PA 17044			717-248-5411

### Emergency Contacts List

<b>Forest Insect Pest Suppression Project</b>	
Forest District:	FD07 Bald Eagle State Forest
District Office Call Sign	Laurelton
Project Year:	2023
Contract:	FPM 23-01, 23-02 & 23-03

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
<b>Forest District Manager</b>				
Matt Beaver	G-1	570-922-3324	570-412-7322	570-374-3694
<b>Assistant Forest District Manager(s)</b>				
John Portzline	G-2	570-922-3323	570-336-0572	570-847-9974
David Felix	G-3	570-922-3348	570-412-7323	814-470-7166
<b>District Program Leader</b>				
Travis DeLuca	G-4	570-922-3353	570-412-9794	570-939-4654
<b>District Monitoring Crews</b>				
Luke Waltman	G-5	570-922-3382	570-336-0565	570-768-0605
Dale Ronk	G-6	570-922-3358	570-336-0568	814-574-7989
Jake Bausinger	G-7	570-922-3328	570-412-7270	570-980-4218
Dan Smith	G-8	570-922-1088	570-336-0542	814-404-4722
Jon Huey	G-31	570-922-3344		814-933-8391
Kyle Seyler	G-32	570-922-3344		570-295-4778
Robert Stover (Alt)	G-72	570-922-3344	570-768-1637	570-922-0644
<b>Office Staff</b>				
<b>Ranger Station(s)/Other District Facilities</b>				
Hickernell	Hickernell	570-922-4833		
Eastville	Eastville	570-725-3471		
New Lancaster Valley	N.L.V.	717-667-3881		
<b>Airports: (list all public airports and those with controlled air space)</b>				
<b>NAME</b>	<b>LOCATION</b>	<b>CONTACT</b>	<b>PHONE</b>	
Mifflin County Airport	Reedsville		717-667-6829	
Penns Valley Airport	Selinsgrove		570-374-7671	
Piper Memorial Airport	Lock Haven		570-748-5123	

### Emergency Contacts List

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig, Phone
Centre	NO		YES	800-479-0050
Clinton	NO		YES	570-748-2936
Union	NO		YES	570-523-1113
Snyder	NO		YES	570-372-0826
State Police Barracks:				
County and City	Union County (Milton)			
County and City	Clinton County (Lamar)			
County and City	Snyder County (Selinsgrove)			
County and City	Mifflin County (Lewistown)			
County and City	Centre County (Bellefonte)			
County and City				
County Sheriff (list only if not dispatched through county control):				
County:				
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town				
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME	Location:			
	Location:			
	Location:			
Hospitals				
NAME	ADDRESS			PHONE
Evangelical Community Hospital	1 Hospital Dr. Lewisburg, PA 17837			570-522-2000
Lewistown Community Hospital	400 Highland Ave. Lewistown, PA 17044			717-248-5411
Lock Haven Hospital	24 Cree Dr. Lock Haven, PA 17744			570-893-5000
Mt. Nittany Medical Center	1800 E. Park Ave. State College, PA 16803			814-231-7000

### Emergency Contacts List

#### Forest Insect Pest Suppression Project

Forest District:	Moshannon State Forest, D 9
District Office Call Sign	Clearfield
Project Year:	2023
Contract:	FPM 23-01 & 23-03

DISTRICT PERSONNEL/FACILITIES		RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
<b>Forest District Manager</b>					
	John Hecker	J-1	8145021919	8147625014	5707689871
<b>Assistant Forest District Manager(s)</b>					
	Brian Salvato	J-2	5709236011	8144043189	
	Ryan Ling	J-3	8147650821	8145929768	
<b>District Program Leader</b>					
	Brian Salvato	J-2	8147650821	8144043189	
<b>District Monitoring Crews</b>					
	Evan Hoffman	J-8	8147650821	8145929653	
	Richard Conrad	J-9	8145774560	8145774560	
	Scotty Kucharcik	J-5	8147650821	8147624519	
	Lance Jovenitti	J-6	8147650821	8143351488	
	Brendan Wilson	J-7	8147650821	8145948110	
	Zachary Miller	J-13	8147650821	7249916750	
	Cody Gulvas	J-10	8147650821	8145537518	
	Andrew Dubbs	J-16	8147650821		
	Brent Davison	J-18	8147650821	8142279488	
	Dan Fowler	J-14	8147623089	8147623089	
<b>Office Staff</b>					
	Lori McMahon	Clfd	8147650821	8147710430	
	Kay Robison	Clfd	8147650821	8145532302	
<b>Ranger Station(s)/Other District Facilities</b>					
	Eric Tracy	J-91	8147650821		
	Scott Ishman	J-92	8147650821		
<b>Airports: (list all public airports and those with controlled air space)</b>					
NAME	LOCATION	CONTACT		PHONE	
Clearfield Lawrence Twp	801 Airport Road, Clfd, PA			8147687710	
University Park Airport	2493 Fox Hill Rd., St College			8148655511	

### Emergency Contacts List

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
	County	Monitor BOF radio? Frequency	If so, Frequency	10 Dig, Phone
	Clearfield			8147651533
	Centre			8004790050
	Cameron			8144863361
	Elk			8147720000
State Police Barracks:				
	County and City	Pine, Covington, Girard, Goshen, Karthaus (Woodland)		8148573800
	County and City	Lawrence		8147651648
	County and City	Huston (DuBois)		8143714652
	County and City	Woodland		8148573800
	County and City			
	County and City			
County Sheriff (list only if not dispatched through county control):				
	County:			
	County:			
	County:			
	County:			
Local Police (list only if not dispatched through county control):				
	City or Town			
	City or Town			
	City or Town			
	City or Town			
	City or Town			
Ambulance (list only if not dispatched through county control):				
NAME		Location:		
		Location:		
		Location:		
Hospitals				
	NAME	ADDRESS		PHONE
	PennHighlands Clfd	809 Turnpike Avenue, Clearfield, PA 16830		8147655341
	PennHighlands DuBois	100 Hospital Avenue, DuBois, PA 15801		8143712200
	PennHighlands Elk	763 Johnsonburg Road, St Marys, PA 15857		8147888000
	Mount Nittany Medical C	1800E Park Avenue, State College, PA 16803		8142317000

### Emergency Contacts List

<b>Forest Insect Pest Suppression Project</b>	
Forest District:	Sproul
District Office Call Sign	Renovo
Project Year:	2023
Contract:	FPM 23-01, 23-02 & 23-03

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
Gregg Kisko	K-1	5704398322	5703379365	
<b>Assistant Forest District Manager(s)</b>				
Denny Sorgan	K-2	5706607046		5707482917
Bob Fitterling	K-3	5708996992		5709232040
<b>District Program Leader</b>				
Brad Myers	K-6	5708612432	5702956560	
<b>District Monitoring Crews</b>				
Todd Myers	K-4		5702955265	
George Mills	K-5		5702959161	
Position will be filled by the start of Spraying	K-7			
Lin Greenaway	K-8	5707697208	5706602477	
Steve Melman	K-9		8145744836	
Michelle Alexander	K-12	5708610365	5706606187	
Alyssa Peters	K-30		5702957013	
Khyle Gibson	K-31	5703980974	5703370481	
Jeremy Dayhoff	K-10	5706607111	7175159945	
<b>Office Staff</b>				
Bobbie Fletcher	K-16		5703671465	
Jessica Deluccia	K-17		5703176531	8145468002
<b>Ranger Station(s)/Other District Facilities</b>				
Cooks Run Maintenance		5709236023		
Hynor Run Maintance		5709236022		
Snow Shoe Maintance		8143876872		
<b>Airports: (list all public airports and those with controlled air space)</b>				
NAME	LOCATION	CONTACT	PHONE	
Piper Airport	Lock Haven			

### Emergency Contacts List

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig, Phone
Clinton	no		yes	5707482936
Centre	no		yes	8004790050
Potter	no		out of Tioga	5707247911
Lycoming	no		yes	5703294732
State Police Barracks:				
County and City	Clinton County Lamar Barracks			5707266000
County and City	Centre County Rockview Barracks			8143557545
County and City				
County and City				
County and City				
County and City				
County Sheriff (list only if not dispatched through county control):				
County:	Clinton County			5708934070
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town	Renovo			5709232268
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME		Location:		
		Location:		
		Location:		
Hospitals				
NAME	ADDRESS			PHONE
Bucktail Medical Centre	1001 Pine Street, South Renovo, PA			5709231000
Lock Haven Hospital	24 Cree DR., Lock Haven, PA			5708935000
Mount Nittany Medical	1800 East Park Ave., State College, PA			8142317000

## Emergency Contacts List

### Forest Insect Pest Suppression Project

Forest District:	Tiadaghton FD-12
District Office Call Sign	Waterville
Project Year:	2023
Contract:	FPM23-01, FPM23-02 & FPM23-03

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
<b>Forest District Manager</b>				
Tom Casilio	M-1	570-753-5409	570-517-6387	
<b>Assistant Forest District Manager(s)</b>				
Luke Ulsamer	M-2	"	570-484-1012	
Jason Stellfox	M-3	"	570-220-9954	
<b>District Program Leader</b>				
McClure Flook	M-4	"	570-732-8055	570-772-6847
<b>District Monitoring Crews</b>				
Eric Frizinger	M-7	"	570-980-8197	
Ben Gamble	M-11	"	570-534-7022	570-971-5401
Angela Poletto	M-9	"	570-295-0161	
B.J. Heintz	M-5	"	570-660-6594	
Ben Sands	M-10	"	814-571-4757	
Jacob Jeffries	M-30	"	570-502-5287	
Doug Frederick	M-6	"	570-660-3906	
Jason Smith	M-8	"	570-502-4399	
Levi Lorson	M-32	"	570-505-2026	
<b>Office Staff</b>				
Linda Rhinehart	M-85	"	570-982-4561	
Wendy Neumann	M-86	"	570-772-0373	
<b>Ranger Station(s)/Other District Facilities</b>				
Waterville	M-23	570-982-4561		
Rauchtown	M-21	570-725-2296		
Jersey Mills	M-23	570-753-6011		

### Airports: (list all public airports and those with controlled air space)

NAME	LOCATION	CONTACT	PHONE
Williamsport Regional	Williamsport		570-368-2444
Jersey Shore Airport	Jersey Shore		570-398-1391
Piper Memorial Airport	Lock Haven		570-748-5123

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig, Phone
State Police Barracks:				
County and City	Clinton County Lamar, PA			570-726-6000
County and City	Lycoming County Montoursville, PA			570-368-5700
County and City				
County and City				
County and City				
County and City				
County Sheriff (list only if not dispatched through county control):				
County:				
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town				
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME	Location:			
	Location:			
	Location:			
Hospitals				
NAME	ADDRESS			PHONE
Lock Haven	24 Cree Fr. Lock Haven, PA 17745			570-893-5000
Jersey Shore	1020 Thompson St. Jersey Shore, PA 17740			570-398-0100
Williamsport	700 High St. Williamsport, PA 17701			570-321-1000

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
<b>Forest District Manager</b>				
Joe Kellert	N-1	814-486-3353	814-203-8921	
<b>Assistant Forest District Manager(s)</b>				
Pete Zoschg	N-2	814-486-3353	970-301-3981	
Wade Kisler	N-3	"	814-558-3509	
<b>District Program Leader</b>				
Wade Kisler	N-3	814-486-3353	814-558-3509	
<b>District Monitoring Crews</b>				
Wade Kisler	N-3	814-486-3353	814-558-3509	
Sam Johnson	N-4	"	814-594-0082	
James Walizer	N-6	"	570-295-7698	
Thomas Asp	N-7	"	814-512-4683	814-837-1257
Paul Hultman	N-8	"	814-558-6173	
Rob Ference	N-9	"	724-433-7364	
Toby Herzing	N-10	"	814-594-9325	
<b>Office Staff</b>				
Kimberly Cooney		814-486-3353	814-598-6901	814-647-8450
Darla Bundy		"	814-512-2983	814-772-0239
<b>Ranger Station(s)/Other District Facilities</b>				
Sizerville Maintenance Complex HQ	N-20	814-486-0832		
Brooks Run Maintenance HQ	N-30	814-647-8901		
Hicks Run Maintenance HQ	N-40	814-787-4214		

Airports: (list all public airports and those with controlled air space)			
NAME	LOCATION	CONTACT	PHONE
St. Mary's Municipal Airport	St. Mary's Pa		814-834-4671

EMERGENCY RESPONSE					TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)					
	County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig, Phone
	Elk		Transmit: 458.7375 Receive: 453.7375	YES	814-776-4600
	Tioga			YES	570-724-7911
State Police Barracks:					
	County and City	Cameron County : Emporium Barracks			814-486-3321
	County and City				
	County and City				
	County and City				
	County and City				
	County and City				
County Sheriff (list only if not dispatched through county control):					
	County:	Cameron County Sheriff Department / Sheriff: Al Neyman			814-486-9373
	County:				
	County:				
	County:				
Local Police (list only if not dispatched through county control):					
	City or Town	Emporium Borough Police Department/ Chief: Dave Merritt			814-486-3384
	City or Town				
	City or Town				
	City or Town				
	City or Town				
Ambulance (list only if not dispatched through county control):					
NAME	Cameron County Ambulance Service	Location:	299 E 2nd St, Emporium PA		814-486-0260
	Sinnemahoning Ambulance	Location:	186 Railroad St, Sinnemahoning		814-546-2487
	Austin Ambulance Service	Location:	42 Main St, Austin PA		814-647-5594
	Bennetts Valley Ambulance Service	Location:	12479 Bennetts Valley Hwy, Penfield PA		814-637-5725
	Port Area Ambulance Service	Location:	22279 Us 6, Port Alleghany PA		814-642-2057
Hospitals					
	NAME	ADDRESS			PHONE
	St. Marys Regional Health Care	763 Johnsonburg Rd, St. Marys PA			814-788-8596
	Charles Cole Memorial Hospital	122 E 2nd St, Coudersport PA			814-274-5436

## Emergency Contacts List

### Forest Insect Pest Suppression Project

Forest District:	Susquehannock FD-15
District Office Call Sign	Coudersport
Project Year:	2023
Contract:	FPM23-01 & FPM23-03

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
<b>Forest District Manager</b>				
Chris Nicholas	R-1	(814)-274-3600	814-203-7792	
<b>Assistant Forest District Manager(s)</b>				
Marc Popchak	R-2	(814)-274-3600	814-243-1414	
Eric Allenbaugh	R-3	(814)-274-3600	814-655-1449	
<b>District Program Leader</b>				
Eric Monger	R-8	(814)-274-3600	(585)261-0304	
<b>District Monitoring Crews</b>				
Chris Beaver	R-4	(814)-274-3600	814-598-5336	
Nate Confer	R-5	(814)-274-3600	814-203-9034	
Dan Smith	R-6	(814)-274-3600	814-810-7244	
Marshall Hamilton	R-7	(814)-274-3600	814-558-6304	
Jesse Monroe	R-9	(814)-274-3600	570-854-5235	
Brandon Roush	R-10	(814)-274-3600	570-765-8996	
Troy Stimaker	R-11	(814)-274-3600	814-203-8397	
Cory Gulvas	R-12	(814)-274-3600	814-591-7277	
Mike Cole	R-13	(814)-274-3600	814-558-7017	
Jed Rimel	R-15	(814)-274-3600	814-203-0138	
Kyle Williams	R-26	(814)-274-3600	717-434-5173	
Katherine Kelly	R-27	(814)-274-3600	814-203-5644	
<b>Office Staff</b>				
Amy Plumstead		(814)-274-3600	814-203-5417	
Wendy Rossetti		(814)-274-3600	570-404-0858	
Kathy Stephenson		(814)-274-3600	716-713-1020	
<b>Ranger Station(s)/Other District Facilities</b>				
Lyman Run maintenance	Lyman run	814-435-5009		
Crossfork maintenance	Crossfork	570-823-6029		
Bark Shanty (not staffed)		814-642-5912		
<b>Airports: (list all public airports and those with controlled air space)</b>				
NAME	LOCATION	CONTACT	PHONE	
Bradford regional	Lafayette (RT 59)	Denny	814-368-5928 ext 26	

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig, Phone
Tioga (covers Potter)	no	if requested FD-15	yes	570-724-7911
McKean	no		yes	814-887-4911/4913
State Police Barracks:				
County and City	Potter, Coudersport			814-274-8690
County and City	McKean, Lewis Run			814-368-9230
County and City				
County and City				
County and City				
County and City				
County Sheriff (list only if not dispatched through county control):				
County:				
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town				
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME	Location:			
	Location:			
	Location:			
Hospitals				
NAME	ADDRESS			PHONE
Coudersport	1001 East 2nd st, coudersport PA 16915			814-274-9300
Bradford	116 Interstate parkway, Bradford, PA 16701			814-368-4143
KANE COMMUNITY	4372 Rt 6, Kane PA			814-837-8585

## Emergency Contacts List

### Forest Insect Pest Suppression Project

Forest District:	Tioga FD-16
District Office Call Sign	Wellsboro
Project Year:	2023
Contract:	FPM 23-01 & 23-03

DISTRICT PERSONNEL/FACILITIES		RADIO CALL SIGN	WORK PHONE	CELL PHONE	HOME PHONE
Forest District Manager					
Jim Hyland		S-1	570-724-8123	570-541-9514	570-971-7220
Assistant Forest District Manager(s)					
Ron Doughtie		S-2	570-724-8134	570-439-1014	828-243-1521
Benn Carlson		S-3	570-724-8129	570-439-3652	570-439-3047
District Program Leader					
Erick Butters		S-5	570-724-8124	570-418-1099	570-404-1068
District Monitoring Crews					
Sam Raisch		S-4	570-724-8122	570-220-7686	570-323-6226
Thomas Oliver		S-6	570-724-8130	717-926-6948	717-649-2004
Colin Schmouder		S-12	570-724-8150	570-494-6982	570-324-2080
Greg Koernig		S-11	570-724-8150	570-404-9677	570-673-3115
Ashlee Gulvas		S-8	570-724-8140	814-599-8223	814-591-7277
Logan Garverick		S-13	570-724-8150	570-404-4645	N/A
Dan DiCamillo		S-9	570-724-8135	570-605-8952	570-662-8952
Office Staff					
Robin Regester			570-724-8121	570-404-6091	
Allanna Whittemore			570-724-2868	570-404-2206	
Ranger Station(s)/Other District Facilities					
Ansonia Shop			570-724-5141		
Armenia Shop			570-6733545		
Airports: (list all public airports and those with controlled air space)					
NAME	LOCATION	CONTACT			PHONE
Wellsboro Johnston - N38	112 Runway Road, Wellsboro, PA 16901				570-724-3746

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig. Phone
Tioga				570-723-8191
State Police Barracks:				
County and City	Tioga - Mansfield			570-662-2151
County and City	Potter - Coudersport			814-274-8690
County and City	Lycoming - Montoursville			570-368-5700
County and City				
County and City				
County and City				
County Sheriff (list only if not dispatched through county control):				
County:				
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town				
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME	Location:			
	Location:			
	Location:			
Hospitals				
NAME	ADDRESS			PHONE
Soldiers and Sailors Memorial Hospital (UPMC Susquehanna)	32-36 Central Ave, Wellsboro PA 16901			570-723-7764
Williamsport Regional Medical Center (UPMC Susquehanna)	700 High Street, Williamsport, PA 17701			570-321-1000
Charles Cole Memorial Hospital	1001 East Second Street, Coudersport, PA 16915			814-274-9300
Robert Packer Hospital (Guthrie)	1 Guthrie Square, Sayre, PA 18840			570-888-6666

## Emergency Contacts List

### Forest Insect Pest Suppression Project

Forest District:	Delaware Forest District 19
District Office Call Sign	Swiftwater
Project Year:	2023 Gypsy Moth Suppression Program
Contract:	FPM 23-01

DISTRICT PERSONNEL/FACILITIES	RADIO CALL SIGN	WORK PHONE	WORK CELL	Personal Cell/ Home
<b>Forest District Manager</b>				
Tim Dugan	W 1	570-895-4005	570-205-5745	610-393-1612
<b>Assistant Forest District Manager(s)</b>				
Mike Roche	W 2	570-895-4006	570-656-6672	570-470-0064
Vacant	W 3	570-895-4004	570-656-6619	
<b>District Program Leader</b>				
Garrett Beers	W 8	570-895-4039	570-656-6675	570-730-7467
<b>District Monitoring Crews</b>				
Matt Hazen	W 4	570-895-4008	570-933-1040	570-369-0863
Tim Carr	W 5	570-895-4008	570-875-8455	570-903-1268
Eric Kuntz	W 6	570-895-4008	570-205-3648	570-202-8820
Richard Rutan	W 9	570-895-4008	570-656-6665	610-737-9965
Nick Galante	W 11	570-895-4008	570-900-1006	631-965-1344
<b>Office Staff</b>				
Emilie Stoffel	W 80	570-895-4003	N/A	805-760-0369
Doris Williams	W 81	570-895-4002	N/A	484-707-3910
<b>Ranger Station(s)/Other District Facilities</b>				
Owego Maintenance Division	Owego	570-226-3927		
Snow Hill Maintenance Division	Snow Hill	570-595-2622		
Edgemere Fire Station	Edgemere	570-828-9571		
<b>Airports: (list all public airports and those with controlled air space)</b>				
NAME	LOCATION	CONTACT	PHONE	
Pocono Mts. Municipal	2780 Memorial Blvd. Tobyhanna, PA 18466		570-839-0258	
Stroudsburg-Pocono Airpark	East Stroudsburg, PA		540-980-3550	
Flying Dollar Airport	Canadensis, PA		570-595-3657	
Mount Bay Air Park	Greentown, PA		717-857-9366	

r: April 7, 2014

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig, Phone
Monroe County	No		Yes	570-992-9911
Pike County	No		Yes	570-296-7700
State Police Barracks:				
County and City	Monroe County: Stroudsburg			570-619-6480
County and City	Monroe County: Fern Ridge			570-646-2271
County and City	Pike County: Blooming Grove			570-226-5718
County and City				
County and City				
County and City				
County Sheriff (list only if not dispatched through county control):				
County:				
County:				
County:				
County:				
Local Police (list only if not dispatched through county control):				
City or Town				
City or Town				
City or Town				
City or Town				
City or Town				
Ambulance (list only if not dispatched through county control):				
NAME	Location:			
	Location:			
	Location:			
Hospitals				
NAME	ADDRESS			PHONE
Lehigh Valley Hospitale- Poc.	206 East Brown Street, East Stroudsburg, PA 18301			570-421-4000
Geisinger Com. Med. Cnrt.	1800 Mulberry Street Scranton, PA 18510			570-703-8222
Wayne Memorial Hospital	601 Park Street Honesdale, PA 18431			570-253-8100
Bon Secours Commun. Hsp.	160 East Main Street Port Jervis, NY 12770			845-858-7000

Forest Insect Pest Suppression Project	
Forest District:	Loyalsock FD-20
District Office Call Sign	Laporte
Project Year:	2023
Contract:	FPM 23-02 & 23-03

Forest District:	Loyalsock FD-20
District Office Call Sign	Laporte
Project Year:	2023
Contract:	FPM 23-02 & 23-03

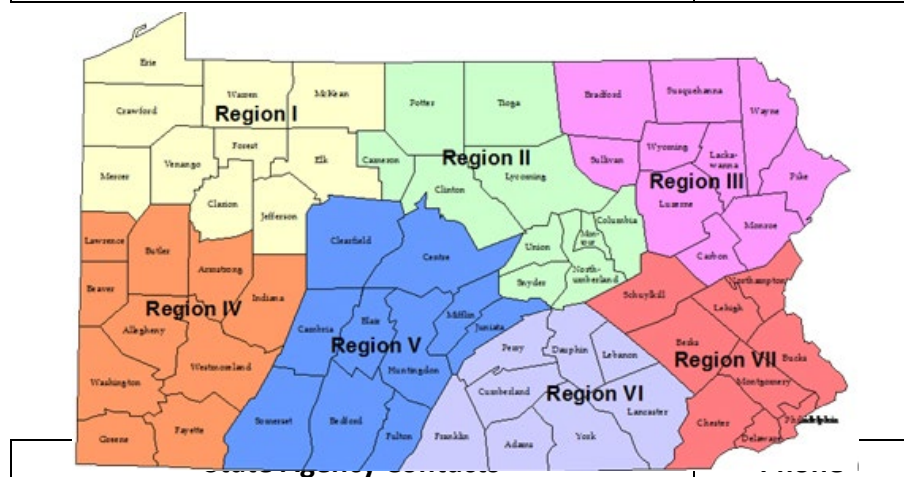
Airports: (list all public airports and those with controlled air space)			
NAME	LOCATION	CONTACT	PHONE
Williamsport Regional	Montoursville	Thomas J.Hart	570-368-2444
Wellsboro Johnston	Wellsboro	William "Skip" Shaw	570-724-3746

EMERGENCY RESPONSE				TELEPHONE
County Control: (list 10 dig phone number even if County has 911 access)				
County	Monitor BOF radio? Frequency	If so, Frequency	Have 911?	10 Dig. Phone
Lycoming	No	Lycoming County 1	Yes	570-433-4461
State Police Barracks:				
Sullivan County, Laporte				570-946-4610
Lycoming, Montoursville				570-368-5700
County Sheriff (list only if not dispatched through county control):				
Lycoming				570-327-2880
Local Police (list only if not dispatched through county control):				
Ambulance (list only if not dispatched through county control):				
NAME	Liberty	Location:	P.O. Box 126 Willow Street Liberty, PA 16930	570-324-2360
	Ralston	Location:	P.O. Box 1 Ralston, PA 17763	570-995-5555
	Plunketts Creek	Location:	179 Dunwoody Road Williamsport, PA 17701	570-478-2231
Hospitals				
NAME	ADDRESS			PHONE
UPMC Susquehanna	700 High Street Williamsport, PA 17701			570-321-1000
Robert Packer	1 Guthrie Square Sayre, PA			570-888-6666
Geisginer	100 North Academy Avenue Danville, PA 17822			570-271-6211
Soliders and Sailors	32-36 Central Ave Wellsboro, PA 16901			570-723-7764
Muncy Valley	215 E. Water Street Muncy, PA 17756			570-546-8282

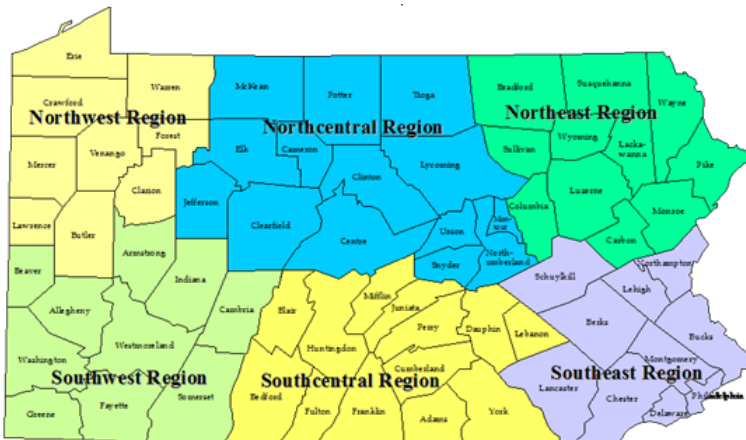
External Contacts (insecticide, weather, FAA)	Contact	Phone
Insecticide Manufacturers (Foray 76B)	Valent Biosciences	877-696-4204
	Jacques Dugal	418-261-0823
	Maria Dombrowsky	519-831-3171
Insecticide Contamination	Poison Control Center	1-800-315-9819
	National Pesticide Telecommunications Network	1-800-858-7378
Weather Information	FAA Flight Service Weather	1-800-992-7433
National Weather Service	(Nat. Weather Service) Philadelphia/Mt. Holly	609-261-6600
	(Nat. Weather Service) Pittsburgh	412-262-1591
	(Nat. Weather Service) State College	814-234-9412
Federal Aviation Administration (FAA)	FAA Regional Operations	718-553-3285
	Flight Standards District Office	610-595-2440
	National Transportation Safety Board (NTSB)	1-844-373-9922

State Agency Contacts	Phone
PA Dept. of Environmental Protection (State Hotline)	800-51-2050

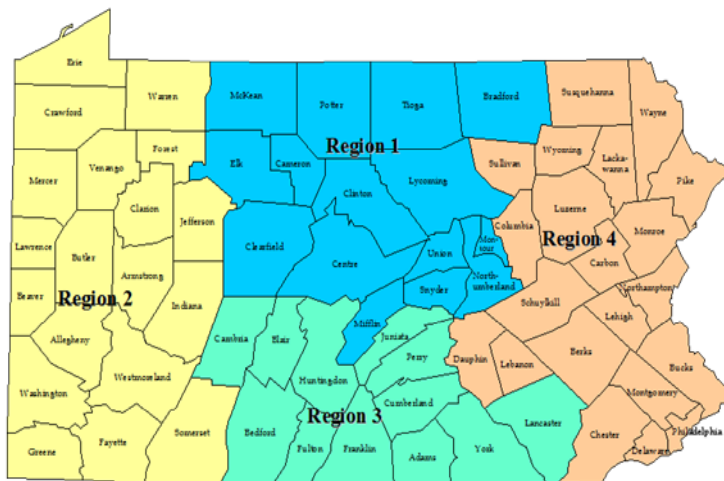
State Agency Contacts	Phone
PA Department of Agriculture Regional Offices	
Region 1	814-332-6890
Region 2	570-433-2640
Region 3	570-836-2181
Region 4	724-832-1073
Region 5	717-705-5500
Region 6	717-346-3223
Region 7	610-489-1003



PA Fish and Boat Commission Regional Offices	
Northwest Region	814-337-0444
Southwest Region	814-445-8974
Northcentral Region	814-359-5250
Southcentral Region	717-486-7087
Northeast Region	570-477-5717
Southeast Region	717-626-0228

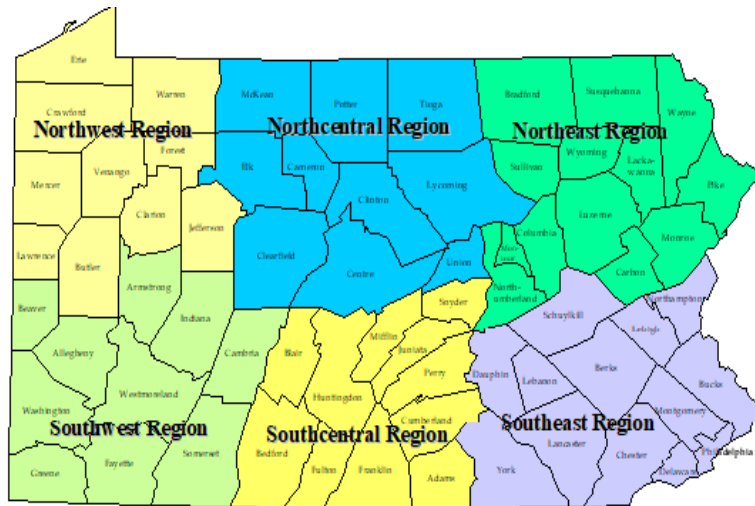


State Agency Contacts	Phone
DCNR State Parks	
Region 1	814-486-3365
Region 2	724-865-2131
Region 3	814-733-2202
Region 4	215-453-5000

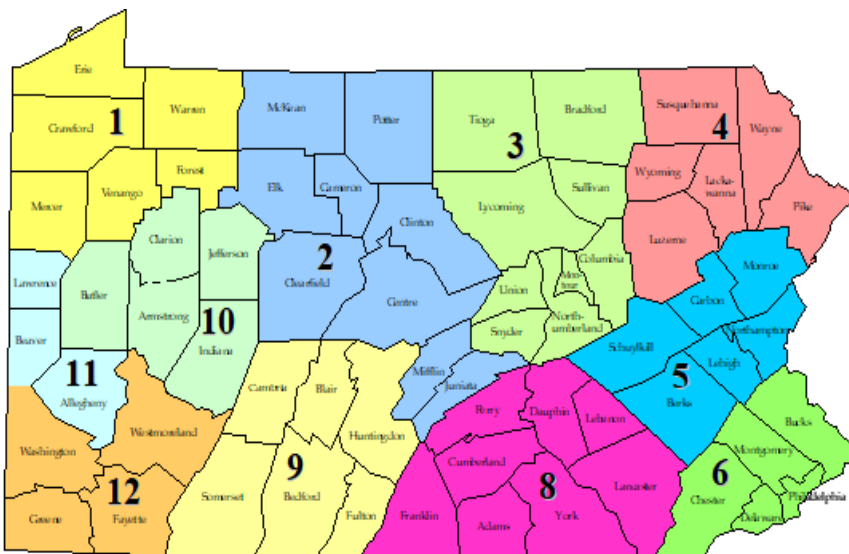


State Agency Contacts	Phone
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PA Game Commission	
Northwest	833-742-4868
Northcentral	833-742-4868
Northeast	833-742-4868
Southwest	833-742-4868
Southcentral	833-742-4868
Southeast	833-742-4868



State Agency Contacts	Phone
PA Dept. of Transportation	
District 1	814-678-7085
District 2	814-765-0400
District 3	570-368-8686
District 4	570-963-4061
District 5	610-798-4280
District 6	610-205-6700
District 8	717-787-6653
District 9	814-696-7250
District 10	724-357-2800
District 11	412-429-5000
District 12	724-439-7470



## ***Appendix 2. Aircraft Accident Reporting and Investigation***

In the event of an aircraft accident or serious incident involving aircraft under contract to the Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry, a report must be provided to the National Transportation Safety Board (NTSB) Field Office.

### **PROCEDURE**

1. Place an immediate phone call to the DCNR Bureau of Forestry Aircraft Operations & Safety Officer at 717-919-2653 with pertinent information regardless of the time of day.
2. Secure the accident scene and do not disturb any of the wreckage except to preserve life. Additionally, note exactly who was present at the time of the accident or incident.
3. Using the attached form, the Field Project Coordinator (FPC) must report information to the Aircraft Operations & Safety Specialist (AOSS) at 717-919-2653, who will coordinate with the Pilot in Command, and/or owner operator for completion of the report to be submitted to the NTSB.

### **Items to be Included in Notification**

Type, nationality, and registration marks of the aircraft.

Name of owner and operator of the aircraft.

Name of the pilot-in-command.

Date and time of the accident, or incident.

Last point of departure, and point of intended landing of the aircraft.

Position of the aircraft with reference to some easily defined geographical point.

Number of persons aboard, number killed, and number seriously injured.

Nature of the accident, or incident, the weather, and the extent of damage to the aircraft so far as is known; and

A description of any explosives, radioactive materials, or other dangerous articles carried.

The most expeditious method of notification to the NTSB by the operator will be determined by the circumstances existing at that time. The NTSB has advised that any of the following would be considered examples of the type of notification that would be acceptable:

Direct telephone notification.

Telegraphic notification.

Notification to the FAA who would in turn notify the NTSB by direct communication, i.e., dispatch or telephone.

**1. Incident Background Information**

Incident Date (mm/dd/yy):		Incident Time:		Type of Incident:		Type of Report:	
County:		Spray Block or LZ Number:		Contractor:		Contract Number:	
Location (provide distance and direction from nearest town, intersection, or other reference that can be readily identified on state highway map):							
Describe incident:							

**2. Aircraft Information**

Type:	Make:	Helicopter models:	Fixed-wing models:	FAA registration number: N
Pilot Name:				

**3. Insecticide Information**

Type:	Formulation:	Rate/Acre:	Volume/Acre (oz):
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**4. Weather Information**

Temperature (°F):	Sky:	Visibility:	Relative Humidity:
Fog:	Haze:	Wind: Speed (MPH)	Direction:

**5. Complaint Information**

Name of complainant:		Telephone:		
Address:		City:	State:	Zip Code:

**6. Accident Information**

Injuries?	If "Yes", describe with name(s) of injured:
Fatalities?	If "Yes", describe with name(s) of deceased:
Aircraft damage?	If "Yes", describe:
Other damage?	If "Yes", describe:
Witnesses?	If "Yes", give names, addresses and telephone numbers:

**7. Notes**

Provide additional details and/or describe action taken regarding accident or to resolve complaint:
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Reported by:	Area/District:	Report Date (mm/dd/yy):
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## Appendix 3. Product Labels and MSDS Sheets



### For the control of Lepidopterous Larvae

#### ACTIVE INGREDIENT:

*Bacillus thuringiensis* subsp. *kurstaki*,  
strain ABTS-351, fermentation solids, spores,  
and insecticidal toxins ..... 18.44%  
Other Ingredients: ..... 81.56%  
Total: ..... 100.00%

Potency: 16,700 Cabbage Looper Units (CLU)/mg  
of product (equivalent to 76 billion CLU/GAL.).

The percent active ingredient does not indicate  
product performance and potency measurements  
are not federally standardized.

EPA Reg. No. 73049-49

EPA Est. No. 33762-IA-001

LIST NO. 60176

#### INDEX:

- 1.0 First Aid
- 2.0 Precautionary Statements
  - 2.1 Hazards to Humans and Domestic Animals
  - 2.2 Personal Protective Equipment (PPE)
  - 2.3 Agricultural Use Requirements
  - 2.4 Non-Agricultural Use Requirements
  - 2.5 User Safety Recommendations
  - 2.6 Environmental Hazards
- 3.0 Directions for Use
- 4.0 Storage and Disposal
- 5.0 Agricultural Use Requirements
- 6.0 Non-Agricultural Use Requirements
- 7.0 Application
- 8.0 Mixing
- 9.0 Spray Volumes
- 10.0 General Agricultural Use Instructions
- 11.0 Table 1
- 12.0 General Non-Agricultural Use Instructions
  - 12.1 Ground Application
  - 12.2 Aerial Application
- 13.0 Table 2
- 14.0 Notice of Warranty

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

#### 1.0

FIRST AID	
<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
HOT LINE NUMBER	
Have the product container with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-323-9597.	

#### 2.0

##### PRECAUTIONARY STATEMENTS

#### 2.1

##### HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse.

#### 2.2

##### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt
- Long pants
- Waterproof gloves
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions are available for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### 2.3

##### Agricultural Use Requirements

Mixers/loaders and applicators must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic reactions. When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must provide all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

#### 2.4

##### Non-Agricultural Use Requirements

Mixer/loaders and applicators not in enclosed cabs or aircraft must wear a dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, or P-95. Repeated exposure to high concentrations of microbial proteins can cause allergic sensitization.

CONTINUED

## 2.5 User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling the product. Wash outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## 2.6 Environmental Hazards

For terrestrial agricultural uses, do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

This product must not be applied aerially within 1/4 mile of any habitats of threatened or endangered lepidoptera. No manual application can be made within 300 feet of any threatened or endangered lepidoptera.

## 3.0 DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

Do not apply this product through any type of irrigation system.

## 4.0 STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal of waste.

**Pesticide Storage:** Store in a cool, dry place. Keep containers tightly closed when not in use. Store in temperatures above freezing and below 25° C (77° F).

**Pesticide Disposal:** To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

**Container Disposal:** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after flow begins to drip. Repeat this procedure two more times. Once cleaned, offer container for recycling, if available. If recycling is not available, puncture and dispose of container in a sanitary landfill or by other procedures approved by state and local authorities.

## 5.0 AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks

## 6.0 NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

For ground applications only. Exposure of unprotected persons can be mitigated by direct spraying. Spray should be allowed to dry undisturbed.

## 7.0 APPLICATION

Apply Foray 76B by ground or aerial equipment undiluted or with quantities of water sufficient to provide thorough coverage of plant parts to be protected. The amount of water needed per acre will depend upon crop size, weather, spray equipment, and local experience.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower /treatment coordinator are responsible for considering all of these factors when making decisions.

## 8.0 MIXING

Shake or stir Foray 76B before use. Fill spray or mixing tank half full of water. Begin agitation and pour Foray 76B into water while maintaining continuous agitation. Add other spray material (if any) and balance of water. Agitate as necessary to maintain suspension. Do not allow diluted mixture to remain in the tank for more than 72 hours.

CONTINUED

To improve weather-fastness of the spray deposits for hard to wet crops, such as cole crops, use a spreader-sticker approved for use on growing crops. Combinations with commonly used spray tank adjuvants are generally not deleterious to Foray 76B, if the mix is used promptly. Before mixing in the spray tank, identify possible problems with physical compatibility by mixing all components in a small container in proportionate quantities.

## 9.0 SPRAY VOLUMES

**Ground Application:** Use amount of Foray 76B, as indicated in the tables that follow, in ground equipment with quantities of water sufficient to provide thorough coverage of plant parts to be protected. The amount of water needed per acre will depend upon crop size, weather conditions, spray equipment used and local experience.

**Aerial Application:** Use amount of Foray 76B, as indicated in the tables that follow, in aerial equipment undiluted or with quantities of water sufficient to provide thorough coverage of plant parts to be protected. In the western U.S., use a normal minimum of 5-10 gallons per acre; in the eastern regions, use a normal minimum of 2-3 gallons per acre. The minimum amount of water needed per acre will depend upon crop size, weather conditions, spray equipment used and local experience.

## 10.0 GENERAL AGRICULTURAL USE INSTRUCTIONS

Foray 76B is a biological insecticide for the control of lepidopterous larvae. It contains the spores and endotoxin crystals of *Bacillus thuringiensis kurstaki*. Foray 76B must be ingested by the larvae to be effective. For consistent control, apply at first sign of newly hatched larvae (1st and 2nd instar larvae). Susceptible larvae that ingest Foray 76B cease feeding within a few hours and die within 2-5 days.

Foray 76B may be applied up to and on the day of harvest. For maximum effectiveness, follow the instructions listed below:

Monitor fields to detect early infestations.

Apply Foray 76B when eggs start hatching and larvae are small (early instars) and before significant crop damage occurs. Larvae must be actively feeding to be affected.

Repeat applications every 3 to 14 days to maintain control and protect new plant growth. Factors affecting spray interval include rate of plant growth, weather conditions, and reinfestations. Monitor populations of pests and beneficials to determine proper timing of applications.

Under conditions of heavy pest pressures or when large worms are present use the higher rate, shorten the application interval, and/or improve spray coverage to enhance control. When these conditions are present, consider use of a contact insecticide to enhance control.

Thorough coverage is essential for optimum performance. Ground applicators equipped with directed drop nozzles can improve coverage.

11.0 Table 1.

Crop	Pests	Rate <sup>1</sup> (fl. oz./acre)
Forests, Shade Trees, Ornamentals,	Gypsy Moth <sup>2</sup>	13.5 - 67.5
	Elm Spanworm	
Shrubs, Sugar Maple Trees, Ornamental Fruit, Nut & Citrus Trees <sup>2</sup>	Spruce Budworm	13.5 - 50.5
	Browntail Moth	
	Douglas Fir	
	Tussock Moth	
	Coneworm	
	Buck Moth	
	Tussock Moth	
	Pine Butterfly	
	Bagworm	
	Leafroller	
	Tortrix	10.0 - 27.0
	Mimosa Webworm	
	Tent Caterpillar	
	Jackpine Budworm	
	Blackheaded Budworm	
	Saddled Prominent	
	Saddleback Caterpillar	
	Eastern & Western	
	Hemlock Looper	
	Orangestriped Oakworm	
	Satin Moth	7.0 - 13.5
	Redhumped	
	Caterpillar	
	Spring & Fall	
	Cankerworm	
	California Oakworm	
	Fall Webworm	

### Special Instructions

<sup>1</sup>Use the higher recommended rates on advanced larval stages or under high density larval populations.

<sup>2</sup>In treating gypsy moth infested trees and shrubs in urban, rural, and semi-rural areas, exposure of non-target vegetation including, but not limited to, native and ornamental species and food or feed crops is permitted.

This product can be mixed and used with other pesticides only in accordance with the most restrictive of label limitations and precautions. This product cannot be mixed with any product containing a label prohibition against such mixing. No label dosage rates may be exceeded.

## 12.0 GENERAL NON-AGRICULTURAL USE INSTRUCTIONS

Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climatic modification and being grown in interior landscapes, ornamental gardens or parks, or on golf courses or lawns and grounds.

Not for use on trees being grown for sale or other commercial use, or for commercial seed production, or for the production of timber or wood products, or for research purposes except for wide-area public pest control programs sponsored by government entities, such as mosquito abatement, gypsy moth control, and Mediterranean fruit fly eradication.

Do not apply this product through any type of irrigation system.

Foray 76B contains the spores and endotoxin crystals of *Bacillus thuringiensis kurstaki*. Foray 76B is a stomach poison and is effective against lepidopterous larvae. After ingestion, larvae stop feeding within hours and die 2-5 days later. Maximum activity is exhibited against early instar larvae. Apply Foray 76B by ground or aerial equipment.

CONTINUED



Shake or stir Foray 76B before use. Add some water to the mix tank, pour the specified amount of Foray 76B into the tank, and then add the remaining amount of water to obtain the proper mix ratio. Agitate as necessary to maintain the suspension. Do not allow diluted mixture to remain in the tank for more than 72 hours.

#### 12.1 Ground Application

Use an adequate amount of tank mix to obtain thorough coverage without excessive run off. Use the indicated recommended per acre rates of Foray 76B in up to the following amounts of water:

High volume hydraulic sprayers	100 gallons
Mist blowers	10 gallons

#### 12.2 Aerial Application

Apply Foray 76B, either alone or diluted with water, aerially at the rates shown in the application rates table. Spray volumes of 28-67.5 fluid ounces of product per acre give optimum coverage.

13.0 Table 2.

Crop	Pests	Rate <sup>1</sup> (fl. oz./acre)
Forests, Shade Trees, Ornamentals, Shrubs, Sugar Maple Trees, Ornamental Fruit, Nut & Citrus Trees <sup>2</sup>	Gypsy Moth <sup>2</sup>	13.5 - 67.5
	Elm Spanworm	
	Spruce Budworm	13.5 - 50.5
	Browntail Moth	
	Douglas Fir Tussock Moth	
	Coneworm	
	Buck Moth	
	Tussock Moth	10.0 - 27.0
	Pine Butterfly	
	Bagworm	
	Leafroller	
	Tortrix	
	Mimosa Webworm	
	Tent Caterpillar	
	Jackpine Budworm	
	Blackheaded Budworm	
	Saddled Prominent	
	Saddleback Caterpillar	
	Eastern & Western Hemlock Looper	
	Orangestriped Oakworm	
	Satin Moth	
	Redhumped Caterpillar	7.0 - 13.5
	Spring & Fall Cankerworm	
	California Oakworm	
	Fall Webworm	

#### Special Instructions

<sup>1</sup>Use the higher recommended rates on advanced larval stages or under high density larval populations.

<sup>2</sup>In treating gypsy moth infested trees and shrubs in urban, rural, and semi-rural areas, exposure of non-target vegetation including, but not limited to, native and ornamental species and food or feed crops is permitted.

#### 14.0 NOTICE OF WARRANTY

To the extent consistent with applicable law, seller makes no warranty, express or implied, of merchantability, fitness or otherwise concerning the use of this product other than as indicated on the label. User assumes all risk of use, storage or handling not in strict accordance with accompanying directions.

*Foray* is a registered trademark of Valent BioSciences Corporation.



04-7294/R6 ©Valent BioSciences Corporation, July 2012

MATERIAL SAFETY DATA SHEET

PAGE 1

Foray® 76B

MSDS# BIO-0012 Rev. 3

ISSUED 03/11/11

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL NAME: Foray® 76B

EPA Reg.No.: 73049-49

Code Number: 35530

List Number: 60176

PCP Number : 24976

SYNONYMS: Biobit® XLP; VBC-6431

MANUFACTURER: Valent BioSciences Corporation

870 Technology Way, Suite 100

Libertyville, Illinois 60048

EMERGENCY TELEPHONE NUMBERS

Emergency Health or Spill:

Outside the United States: 651-632-6184

Within the United States: 877-315-9819

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME: Bacillus thuringiensis, var. kurstaki

CONCENTRATION: 18.44%

CAS NUMBER: 68038-71-1

OSHA-PEL 8HR TWA: N/L

STEL: N/L

CEILING: N/L

ACGIH-TLV 8HR TWA: N/L

STEL: N/L

CEILING: N/L

OTHER 8HR TWA: N/A

LIMITS STEL: N/A

CEILING: N/A

INGREDIENT NAME: Inert/Other ingredients - Proprietary Information

CONCENTRATION: 81.56%

CAS NUMBER: N/A

OSHA-PEL 8HR TWA: N/L

STEL: N/L

CEILING: N/L

ACGIH-TLV 8HR TWA: N/L

STEL: N/L

CEILING: N/L

OTHER 8HR TWA: N/A

LIMITS STEL: N/A

CEILING: N/A

MATERIAL SAFETY DATA SHEET

PAGE 2

Foray® 76B

MSDS# BIO-0012 Rev. 3

ISSUED 03/11/11

3. HAZARDS INFORMATION

EMERGENCY OVERVIEW: Product is non-toxic by ingestion, skin contact, or inhalation. May be irritating to skin and eyes.

ROUTE(S) OF ENTRY: Skin: No  
Inhalation: No  
Ingestion: No

SKIN CONTACT: Mild irritant

SKIN SENSITIZATION: Possible mild sensitizer (unconfirmed)

EYE CONTACT: Mild irritant

TARGET ORGANS: N/D

CARCINOGENICITY RATING: NTP: N/L IARC: N/L OSHA: N/L ACGIH: N/L  
None

SIGNS AND SYMPTOMS: Direct contact with eyes or skin may cause mild irritation.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: N/D

4. FIRST AID MEASURES

EYES: Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

SKIN: Remove from source of exposure. Flush with copious amounts of water. If irritation persists or signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

INGESTION: Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

INHALATION: Remove from source of exposure. If signs of toxicity occur, seek medical attention. Provide symptomatic/supportive care as necessary.

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## 5. FIRE FIGHTING PROCEDURES

FLASH POINT: N/A (Aqueous suspension)  
FLASH POINT METHOD: N/A  
LOWER EXPLOSIVE LIMIT(%): N/A  
UPPER EXPLOSIVE LIMIT(%): N/A  
AUTOIGNITION TEMPERATURE: N/A

FIRE & EXPLOSION HAZARDS: Non-flammable and no explosive properties.

EXTINGUISHING MEDIA: Use appropriate media for underlying cause of fire.

FIRE FIGHTING INSTRUCTIONS: Wear protective clothing and self-contained breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

SPILL OR RELEASE PROCEDURES: Recover product and place in an appropriate container for disposal. Ventilate and wash the spill area.

## 7. HANDLING AND STORAGE

HANDLING: The usual precautions for handling chemicals should be observed.

STORAGE: Store in a closed container in a cool, dry place.

SPECIAL PRECAUTIONS: Wash thoroughly with soap and water after handling.  
Keep impervious gloves on until all potentially contaminated personal protective equipment is removed.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use local exhaust

RESPIRATORY PROTECTION: Not usually required. If necessary, use a dust/mist respirator meeting NIOSH standards of at least N-95, R-95 or P-95.

SKIN PROTECTION: Impervious gloves, clothing to minimize skin contact.

EYE PROTECTION: Not usually required. If necessary, use safety glasses or goggles.

OTHER PROTECTION: Wash thoroughly with soap and water after handling.

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9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE: Light brown aqueous suspension  
 ODOR: Pungent, musty odor  
 BOILING POINT: N/D  
 MELTING/FREEZING POINT: N/D  
 VAPOR PRESSURE (mm Hg): N/D  
 VAPOR DENSITY (Air=1): N/D  
 EVAPORATION RATE: N/D  
 BULK DENSITY: 1.12-1.2 g/cm3  
 SPECIFIC GRAVITY: N/D  
 SOLUBILITY: Readily mixable with water  
 pH: 4.1-4.8 as a 10% solution in water  
 VISCOSITY: N/D

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Not chemically reactive.  
 INCOMPATIBILITIES: Alkalinity inactivates product.  
 HAZARDOUS DECOMPOSITION PRODUCTS: N/D.  
 HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

ORAL LD50: N/D. > 5,000 mg/kg (rat) for a similar formulation. EPA Toxicity Category IV  
 DERMAL LD50: N/D. > 2,500 mg/kg (rabbit) for a similar formulation. EPA Toxicity Category III  
 INHALATION LC50: N/D. In a nose-only inhalation study with rats with a similar formulation, no lethality was observed at the highest attainable aerosol concentration of 6.81 mg/liter for 4 hours.  
 CORROSIVENESS: N/D. Not expected to have any corrosive properties.  
 DERMAL IRRITATION: Transient, slight or mild irritation noted in a dermal irritation study with a similar formulation. EPA Toxicity Category IV.  
 OCULAR IRRITATION: Transient, mild irritation was observed in test animals in a study a similar formulation. EPA Toxicity Category III.

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11. TOXICOLOGICAL INFORMATION, continued  
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DERMAL SENSITIZATION: N/D. The possibility of mild sensitization exists with this formulation, however, this has not been confirmed by actual experience.

SPECIAL TARGET ORGAN EFFECTS: N/D

CARCINOGENICITY INFORMATION: N/D. None of the components are classified as carcinogens.

12. ECOLOGICAL INFORMATION  
-----

ECOLOGICAL INFORMATION: Studies on non-targets have been performed without identifying any organisms at risk. The following species have been included in the testing: mammals (rats, rabbits); freshwater aquatic organisms (Daphnia magna, Rainbow Trout); birds (Mallard, Bobwhite); and non-target insects (Green Lacewing larvae, Ladybird Beetles, Honey Bee).

13. DISPOSAL CONSIDERATIONS  
-----

WASTE DISPOSAL METHODS: Dispose of product in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION  
-----

DOT STATUS: Not Regulated  
PROPER SHIPPING NAME: N/A  
HAZARD CLASS: N/A  
UN NUMBER: N/A  
PACKING GROUP: N/A  
REPORTABLE QUANTITY: N/A

IATA/ICAO STATUS: Not Regulated  
PROPER SHIPPING NAME: N/A  
HAZARD CLASS: N/A  
UN NUMBER: N/A  
PACKING GROUP: N/A  
REPORTABLE QUANTITY: N/A

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14. TRANSPORTATION INFORMATION, continued

IMO STATUS: Not Regulated  
 PROPER SHIPPING NAME: N/A  
 HAZARD CLASS: N/A  
 UN NUMBER: N/A  
 PACKING GROUP: N/A  
 REPORTABLE QUANTITY: N/A  
 FLASH POINT: N/A

15. REGULATORY INFORMATION

TSCA STATUS: Exempt RCRA STATUS: N/D  
 CERCLA STATUS: N/D PROP 65 (CA): N/D  
 SARA STATUS: N/D

16. OTHER INFORMATION

REASON FOR ISSUE: re-issue  
 APPROVAL DATE: 03/11/11  
 SUPERSEDES DATE: 09/12/07

LEGEND: N/A = Not Applicable  
 N/D = Not Determined  
 N/L = Not Listed  
 L = Listed  
 C = Ceiling  
 S = Short-term  
 ® = Registered Trademark of Valent BioSciences  
 ™ = Registered Trademark of Valent BioSciences

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# Mimic™ 2LV

## INSECTICIDE

### ACTIVE INGREDIENT:

Tebufenozide:	
Benzoic acid, 3,5-dimethyl-,1-(1,1-dimethylethyl)-2-(4-ethylbenzoyl) hydrazide .....	24%
OTHER INGREDIENTS .....	76%
TOTAL .....	100%

Contains 2 lbs. active ingredient per gallon.

EPA Registration No.: 8033-113-73049  
EPA Establishment No.: 5905-GA-01  
(Lot No. Suffix 'KF')  
EPA Establishment No.: 33762-IA-001  
(Lot No. Suffix 'PG') List No. 60160

### INDEX:

- 1.0 Precautionary Statements
  - 1.1 Hazard to Humans (And Domestic Animals)
  - 1.2 Personal Protective Equipment (PPE)
  - 1.3 User Safety Recommendations
  - 1.4 First Aid
  - 1.5 Environmental Hazards
- 2.0 Directions for Use
- 3.0 Storage and Disposal
- 4.0 General Information
- 5.0 Application Instructions
- 6.0 Terms And Conditions of Use

### KEEP OUT OF REACH OF CHILDREN CAUTION

#### 1.0 PRECAUTIONARY STATEMENTS

##### 1.1 HAZARD TO HUMANS (AND DOMESTIC ANIMALS) CAUTION

Causes moderate eye irritation. Harmful if inhaled. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist.

##### 1.2 Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs or aircraft in a manner that meet the requirements listed in the Worker Protection Standards (WPS) for agricultural pesticides [40 CFR 170.240(d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### 1.3 User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

#### 1.4 FIRST AID

**If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

**If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**If swallowed:** Call a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

#### HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 day or night, for emergency treatment information.

#### 1.5 Environmental Hazards

This product is toxic to aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Under some conditions, this chemical may also have a high potential for runoff into surface water for several weeks or months after application. Do not cultivate within 10 feet of aquatic areas so as to allow growth of a vegetative filter strip.

Drift from applications of this pesticide is likely to result in damage to sensitive aquatic invertebrates in water bodies adjacent to treatment area.

For terrestrial uses, do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high water mark, except under forest canopy when aerially applied to control forest pests. Do not contaminate water when disposing of equipment wash-waters and rinsate. Do not apply when weather conditions favor drift or runoff from areas treated.

CONTINUED

### 1.5 Environmental Hazards (Cont'd)

This pesticide demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

### 2.0 DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water, is:

- Coveralls
- Waterproof gloves
- Shoes plus socks

### 3.0 STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage:** Store in a cool dry well-ventilated area, but not below 32°F.

**Container Reuse:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

**Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

### 4.0 GENERAL INFORMATION

Mimic™ 2LV insecticide mimics the action of the natural insect hormone 20-hydroxyecdysone, the physiological inducer of the molting and metamorphosis process in insects. Mimic 2LV is highly active against most lepidopterous larvae while having practically no activity at typical use rates against other orders of insects. The selectivity of Mimic 2LV allows for the maintenance of the populations of beneficial and predatory insects which is a key element in integrated pest management programs. Mimic 2LV controls lepidopterous larvae through a novel mode-of-action by the induction of a premature lethal molt, which initiates within hours of ingestion of treated crop surfaces. Contact activity has also been observed in some insects. Actual death of the larvae will take several days to occur, although feeding by the insects generally ceases within 24 hours of ingestion.

#### Use Rate Determination

Carefully read, understand and follow label use rates, recommendations and restrictions. Apply the amount specified in the following table with properly calibrated aerial or ground spray equipment.

The low rates may be used for light infestations of the target lepidopterous species and the higher rates for moderate to heavy infestations. Mimic 2LV may be applied in either dilute or concentrate sprays so long as the application equipment is calibrated and adjusted to deliver thorough, uniform coverage. Use the specified amount of Mimic 2LV per acre regardless of spray volume used. Prepare only the amount of spray solution required to treat the measured acreage.

#### 4.0 GENERAL INFORMATION (Cont'd)

##### Mixing and Compatibility

Fill the spray tank one-third to one-half full of clean water and slowly pour Mimic 2LV into the spray tank. Maintain agitation in the spray tank during mixing, loading and application. Triple-rinse empty container and add rinsate to spray tank.

Mimic 2LV is believed to be compatible with most commonly used agricultural fungicides, insecticides, growth regulators, foliar fertilizers and spray adjuvants. If in doubt, mix proportional amounts of all spray ingredients in a test vessel. Shake the mixture vigorously and allow it to stand for fifteen minutes. Rapid precipitation of the ingredients and failure to re-suspend when shaken indicates that the mixture is incompatible and should not be applied.

##### Application Timing

The activity of Mimic 2LV is expressed primarily through ingestion by the target larvae. Consequently, the timing of application is dependent on the feeding behavior of the target pest. For internal feeding larvae, application must be made prior to the time that surface feeding occurs. For foliar or surface feeding larvae, application made while active feeding is occurring will be effective.

Re-application may be required to protect new flushes of foliage or rapidly expanding fruit. The re-application interval will vary depending on how rapidly the crop is growing and the generation time of the target pest. While Mimic 2LV is essentially equally effective against all instars, it is generally good practice to make applications to early instars to avoid the heavy damage that can be inflicted by later instar larvae.

For best results, begin applications when first signs of feeding damage or when threshold levels of moths, eggs or larvae occur. Consult the Cooperative Extension Service, or other qualified professional authorities, to determine the appropriate threshold for application in your area.

#### 5.0 APPLICATION INSTRUCTIONS

Because Mimic 2LV must be ingested by the larvae, application must be in a manner that assures uniform and thorough coverage. Higher water volume and increased spray pressure generally provide better coverage. Operating an airblast sprayer at ground speeds greater than 2 mph and making applications in an alternate row middle pattern in tree crops and vines may result in less than satisfactory coverage and poor performance, particularly in conditions of high pest infestation levels, extremely large trees and/or dense foliage. Avoid application under conditions when uniform coverage cannot be assured or when excessive spray drift may occur. A minimum of six hours drying time is required between the completion of application and the onset of precipitation to ensure optimum performance.

**Chemigation:** Do not apply this product through any type of irrigation system.

##### Spray Adjuvants

The addition of agricultural adjuvants is not required to maximize the performance, coverage or weatherability of Mimic 2LV. The addition of spray adjuvants is not recommended.

##### Resistance Management

Any insect population may contain individuals that are naturally resistant to a specific pesticide; therefore, the use of any one insecticide against many consecutive generations of a pest can result in the development of resistance problems. To prevent or delay the development of resistance, Valent BioSciences recommends rotation of Mimic 2LV with insecticides of alternate modes of action and the utilization of Integrated Pest Management practices such as routine monitoring, the use of treatment thresholds to time applications and cultural and biological controls wherever possible. We further recommend that Mimic 2LV not be used on more than three consecutive generations of a pest. Since the development of resistance cannot be predicted, we suggest that you consult local or State Extension personnel or your local Valent BioSciences representative for resistance management guidance appropriate to your crop, locality and production practices.

##### Rotational Crop Restrictions

The following rotational crops may be planted at intervals defined below following the final application of Mimic 2LV at the recommended rates for a registered use.

Crop	Re-Cropping Interval
Crops for which tebufenozide use is registered	No restrictions
All other crops	Prohibited

**Note:** When using Mimic 2LV with other registered pesticides, always refer to rotational restrictions and precautions on the other product's label and comply with the most restrictive rotational guidelines.

##### Forests<sup>1,2</sup>

Because Mimic 2LV must be ingested in order to be effective, it is essential that coverage is thorough and uniform. Higher carrier volumes and higher use rates are recommended for very large trees or dense stands and for heavy target pest infestations.

**Ground Application:** Hydraulic ground sprayers should be calibrated to deliver a minimum of 50 gallons per acre. For mist blowers or air blast sprayers, use a minimum of 10 gallons per acre.

**Aerial Application:** Make applications of Mimic 2LV in a minimum of 1 gallon per acre. For pests that feed in the top of the canopy, such as gypsy moths, use a minimum of 1/2 gallon per acre. Higher carrier volumes are recommended when environmental conditions are less than ideal for aerial applications.

<sup>1</sup> Forests include commercial, private and public forestland, conifer release sites, shelterbelts and windbreaks, and forest plantings.

<sup>2</sup> Not registered for use on forests in the state of California.

## 5.0 APPLICATION INSTRUCTIONS (Cont'd)

TARGET PESTS	APPLICATION RATE (fl. oz./acre)	APPLICATION TIMING	RESTRICTIONS
Bagworm ( <i>Thyridopteryx ephemeraeformis</i> ) Browntail Moth ( <i>Euproctis chrysorrhoea</i> ) Elm Spanworm ( <i>Ennomos subsignaria</i> ) Fall Cankerworm ( <i>Alsophila pometaria</i> ) Fall Webworm ( <i>Hyphantria cunea</i> ) Gypsy Moth ( <i>Lymantria dispar</i> ) Hemlock Looper ( <i>Chambdina fiscellaria</i> ) Jackpine Budworm ( <i>Choristoneura pinus</i> ) Puss Caterpillar ( <i>Megalopyge opercularis</i> ) Tent Caterpillar Forest, Eastern, Western ( <i>Malacosoma disstria</i> , <i>Malacosoma americanum</i> , <i>Malacosoma californicum</i> ) Zimmerman Pine Moth ( <i>Dioryctria zimmermani</i> )	4.0 to 8.0 (0.06 to 0.12 lb. a.i./acre)	Apply to early instar (1st, 2nd, or 3rd) larvae. In general, foliage development should be a minimum of 20%.	Do not apply more than 16 fluid ounces per year.  Uniform coverage of the foliage is essential to provide maximum protection from defoliation and reduction of egg mass deposition.
Spruce Budworm ( <i>Choristoneura fumiferana</i> and <i>C. occidentalis</i> ) Tussock Moth ( <i>Dasychira pinicola</i> , <i>Lophocampa maculata</i> , <i>Orgyia pseudotsugata</i> , <i>O. vetusta</i> )	4.0 to 8.0 (0.06 to 0.12 lb. a.i./acre)	Make applications to 4th to 5th instar larvae that are actively feeding on foliage or are feeding outside the candle caps.	
Pine Tip Moth ( <i>Rhyacionia frustrana</i> , <i>R. neomexicana</i> , <i>R. buoliana</i> , <i>R. rigidana</i> , <i>R. subtropica</i> )	8.0 (0.12 lb. a.i./acre)	Apply to early instar (1st to 2nd) larvae after each new foliage flush, in general, at approximately 25% shoot expansion.	

## 6.0 TERMS AND CONDITIONS OF USE

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid.

Otherwise, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

### Warranty Disclaimer

Valent BioSciences warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. Valent BioSciences MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

### Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperature, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all

of which are beyond the control of Valent BioSciences or the seller. All such risks shall be assumed by buyer.

### Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Valent BioSciences' election, one of the following:

1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used

Valent BioSciences shall not be liable for losses or damages resulting from handling or use of this product unless Valent BioSciences is promptly notified of such loss or damage in writing. In no case shall Valent BioSciences be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer, Inherent Risks of Use, and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of Valent BioSciences or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

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Chiyoda-Ku, Tokyo, JAPAN  
100-8165



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MIMIC 2LV INSECTICIDE  
BIO-0615rev.0

Date: 2/23/11

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: Mimic 2LV Insecticide

COMPANY IDENTIFICATION:  
Valent BioSciences Corporation  
870 Technology Road  
Libertyville, IL 60048

EMERGENCY TELEPHONE NUMBER:  
1-877-315-9819

EPA Reg number: 8033-113-73049

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

No		CAS REG NO	WEIGHT (%)
1	RH-5992 (Tebufenozide) .....	112410-23-8	23-25
2	Glycerol .....	56-81-5	75-77
3	Related reaction products .....	None	
4	Alkylaryl polyether alcohol .....	Trade Secret	
5	Oils, glyceridic, canola .....	120962-03-0	
6	Water .....	7732-18-5	

See Section 8, Exposure Controls / Personal Protection

### 3. HAZARDS IDENTIFICATION

Primary Routes of Exposure

Inhalation  
Skin Contact  
Eye Contact

Inhalation

Inhalation of vapor or mist is possibly harmful.

Eye Contact

Direct contact with material can cause the following: possible irritation

Skin Contact

Prolonged or repeated skin contact can cause the following: slight skin irritation

Delayed Effects

Repeated overexposure to the active ingredient in this material can cause the following:



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- adverse reproductive effects - blood changes



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#### 4. FIRST AID MEASURES

##### Inhalation

Move subject to fresh air.

##### Eye Contact

Flush eyes with a large amount of water for at least 15 minutes. Consult a physician if irritation persists.

##### Skin Contact

Wash affected skin areas thoroughly with soap and water. Remove and wash contaminated clothing thoroughly. Do not take clothing home to be laundered. Consult a physician if irritation persists.

##### Ingestion

If swallowed, give 2 glasses of water to drink. Never give anything by mouth to an unconscious person. Consult a physician.

##### Note to Physician

If swallowed, careful evacuation of the stomach is advisable.

#### 5. FIRE FIGHTING MEASURES

Flash Point .....	Noncombustible
Auto-ignition Temperature .....	No Data
Lower Explosive Limit .....	Not Applicable
Upper Explosive Limit .....	Not Applicable

##### Unusual Hazards

Pesticide particulates can become airborne.

##### Extinguishing Agents

Use the following extinguishing media when fighting fires involving this material: carbon dioxide – dry chemical - water spray

##### Personal Protective Equipment

Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.

##### Special Procedures

Contain run-off. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire.



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## 6. ACCIDENTAL RELEASE MEASURES

### Personal Protection

Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations. If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow. Remove all contaminated clothing promptly. Wash all exposed skin areas with soap and water immediately after exposure. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

### Procedures

Floor may be slippery; use care to avoid falling. Contain spills immediately with inert materials (e.g. sand, earth). Transfer liquids and solid diking material to separate suitable containers for recovery or disposal.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

## 7. HANDLING AND STORAGE

### Storage Conditions

The minimum recommended storage temperature for this material is 0C/32F. The maximum recommended storage temperature for this material is 50C/122F. Do not store this material near food, feed or drinking water. Keep container tightly closed when not in use.

### Handling Procedures

Do not handle material near food, feed or drinking water.

### Other

Triple rinse (or equivalent) and puncture empty container. Dispose empty container in a sanitary landfill or by incineration as allowed by state and local authorities. Avoid inhalation of smoke if incinerated.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limit Information

No	CAS REG NO	WEIGHT (%)
1 RH-5992 (Tebufenozide) .....	112410-23-8	23-25
2 Glycerol .....	56-81-5	75-77
3 Related reaction products .....	None	
4 Alkylaryl polyether alcohol .....	Trade Secret	
5 Oils, glyceridic, canola .....	120962-03-0	



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6 Water ..... 7732-18-5



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Comp. No.	Units	Valent BioSciences		OSHA		ACGIH	
		TWA	STEL	TWA	STEL	TWA	STEL
1	mg/m <sup>3</sup>	1.3	None	None	None	None	None
2	mg/m <sup>3</sup>	None	None	10 Mist	None	10 Mist	None
3		None	None	None	None	None	None
4		None	None	None	None	None	None
5		None	None	None	None	None	None
6		None	None	None	None	None	None

Respiratory Protection

A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in 'Exposure Limit Information'.

**Up to 10 times the exposure limit:** Wear a MSHA/NIOSH approved (or equivalent) half-mask, air-purifying respirator.

**Up to 100 times the exposure limit:** Wear a MSHA/NIOSH approved (or equivalent) full-face piece, airpurifying respirator, OR full-face piece, airline respirator in the demand mode.

**Above 100 times the exposure limit or Unknown:** Wear a MSHA/NIOSH approved (or equivalent) selfcontained breathing apparatus in the pressure demand mode, OR MSHA/NIOSH approved (or equivalent) full-face piece, airline respirator in the pressure demand mode with emergency escape provision.

Air-purifying respirators should be equipped with MSHA/NIOSH approved (or equivalent) cartridges for protection against pesticides.

Eye Protection

Use chemical splash goggles (ANSI Z87.1 or approved equivalent).

Hand Protection

Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection: Nitrile - Butyl/Neoprene rubber. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Other Protection



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Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

#### Engineering Controls (Ventilation)

Use local exhaust ventilation with a minimum capture velocity of 100 ft/min. (0.5 m/sec.) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

#### Other Protective Equipment

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Color .....	Off-white, cream color
State .....	Liquid
Odor Characteristic .....	Mild odor
pH .....	6.5 to 7.5
Viscosity .....	1000 to 1500 CPS
Specific Gravity (Water = 1) .....	1.0
Vapor Density (Air = 1) .....	< 1 Water
Vapor Pressure .....	17 mm Hg @ 20°C/68°F Water
Melting Point .....	-9°C/15°F
Boiling Point .....	100°C/212°F Water
Solubility in Water .....	Dispersible
Percent Volatility .....	60% Approximate
Evaporation Rate (BAc = 1) .....	< 1 Water

See Section 5, Fire Fighting Measures

### 10. STABILITY AND REACTIVITY

#### Instability

This material is considered stable.

#### Hazardous Decomposition Products

Thermal decomposition may yield the following: isobutylene

#### Hazardous Polymerization



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Product will not undergo polymerization.

#### Incompatibility

Avoid contact with strong oxidizing agents.

### 11. TOXICOLOGICAL INFORMATION

#### Acute Data

No toxicity data are available for this material.  
Toxicity data for a compositionally similar material are listed below.

Oral LD50 - rat: >5000 mg/kg  
Dermal LD50 - rat: >5000 mg/kg  
Skin Irritation - rabbit: slight irritation  
Eye irritation - rabbit: inconsequential irritation  
Inhalation LC50 - rat: >2.7 mg/L for 4 hr

#### Subchronic/Chronic Data

The following data pertains to studies conducted with the technical material, 97% active ingredient: In thirteen-week dietary studies in rats, mice and dogs, the observed NOEL was 200 ppm (10 mg/kg/day), 20 ppm (3 mg/kg/day) and 50 ppm (1.7 mg/kg/day), respectively. The hemopoietic system is the target organ of toxicity in these species.

#### Mutagenicity Data

The following data pertains to studies conducted with the technical material, 97% active ingredient:

Ames mutagenicity: Negative  
Mammalian Point Mutation: Negative  
In vitro cytogenetic assay (Chinese hamster ovary cells): Negative  
In vivo cytogenetic assay (rat): Negative  
In vitro rat hepatocyte Unscheduled DNA Synthesis: Negative

#### Reproductive/Teratology Data

The following data pertains to studies conducted with the technical material, 97% active ingredient:

No developmental toxic effects were observed in rats nor rabbits when studied up to and including 1000 mg/kg/day.



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Slight reproductive effects were observed at a high dose (2000 ppm) in a rat two-generation reproduction study; the NOEL for reproductive effects was 150 ppm (7.5 mg/kg/day).



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## 12. ECOLOGICAL INFORMATION

### Environmental Toxicity

Bluegill sunfish (*Lepomis macrochirus*), 96 Hour LC50: 3.0 mg/l  
Rainbow trout (*Salmo gairdneri*), 96 Hour LC50: 5.7 mg/l  
Daphnia magna, 48 Hour EC50: 3.8 mg/l  
Bobwhite quail, LD50: > 2150 mg/kg  
Bobwhite quail, LC50: > 5000 ppm  
Mallard duck, LC50: > 5000 ppm  
Honeybee, LD50: > 234 µg/bee  
Earthworm, 14 Day LC50: > 1000 mg/kg  
Oyster shell (*Crassostrea virginica*), Deposition EC50: 0.64 mg/l

The above Environmental Toxicity data are from studies conducted on the technical material, 97% active ingredient.

## 13. DISPOSAL CONSIDERATIONS

### Procedure

Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

## 14. TRANSPORT INFORMATION

US DOT Hazard Class ..... NON-REGULATED

## 15. REGULATORY INFORMATION

### Workplace Classification

This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200). This product is subject to regulation under the Canadian Pest Control Products Act (P.C.P. Act). Therefore, this product is excluded from the supplier labeling and material safety data sheet requirements as specified in Section 12 of the Hazardous Products Act.

### SARA TITLE 3: Section 311/312 Categorizations (40 CFR 370)

This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as a delayed health hazard.



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SARA TITLE 3: Section 313 Information (40 CFR 372)

This product does not contain a chemical, which is listed in Section 313 at or above de minimis concentrations.

CERCLA Information (40 CFR 302.4)

This material contains no hazardous or extremely hazardous substances as defined by CERCLA or SARA Title III, and releases are therefore not reportable.

Waste Classification

When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP).

United States

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

## 16. OTHER INFORMATION

### MSDS STATUS: New

The information and recommendations contained herein are based upon tests believed to be reliable. However, Valent BioSciences does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform with actual conditions of usage may be required. Valent BioSciences assumes no responsibility for results obtained or for incidental or consequential damages arising from the use of these data. No freedom from infringement of any patent, copyright or trademark is to be inferred.



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## SECURITY PLAN

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## **I. PURPOSE**

To provide an outline of procedures to be followed to minimize potential security issues with personnel, product, equipment, data and communications during *Lymantria dispar* suppression operations.

## **II. AUTHORIZED PERSONNEL**

Only authorized personnel listed in the contacts section of the Safety Plan shall be allowed on-site during the project. The Contractor's project supervisor and the Department's project coordinator (PC) shall identify and monitor other persons permitted on site (i.e., emergency, airport representatives, and landowner at LZ or media representatives). The project coordinator must maintain contact information, as warranted, for these personnel.

## **III. AIRCRAFT SECURITY**

The Contractor must abide by any current regulations issued by the FAA, Homeland Security, or other federal/state agencies with regard to aircraft, insecticide safeguarding, and security, as well as, any rules and/or recommendations that are issued by the National Association of Aerial Applicators, the USDA Forest Service, or any other responsible agency. At a minimum, the Contractor must provide the following:

- All spray aircraft must be disabled when not in use so that they cannot be started by anyone other than authorized personnel.
- All spray aircraft and any associated insecticide and insecticide-handling equipment must be attended or safeguarded at all times.
- Access to the insecticide loading and storage areas must be restricted to authorized personnel of the Contractor and Department.
- When guard service for the aircraft, insecticide, and/or support equipment is required, the Contractor must provide the necessary personnel.

## **IV. MATERIALS HANDLING**

### **A. Pre-Delivery/Off-Site – Insecticide**

#### **1. Manufacturer**

The manufacturer of an insecticide or adjuvant responsible for the production and delivery of the insecticide being used for a project. The manufacturer handles security of this material until delivery on-site to the Contractor.

#### **2. Transportation**

Transportation of the material to be used on the project is generally sub-contracted by the manufacturer to a carrier that is insured and responsible for the security, and shipping of the material. This carrier provides the service of transporting the material from the manufacturer to a location agreed upon by the Contractor.

### **3. Chain-of-Custody**

During the transport of insecticide, chain-of-custody documentation provides a record of the personnel/organizations responsible at any given time for the movement of the material from manufacturer to the Contractor's designated location. This record must be dated and signed by the handler when passage of the material occurs. The chain-of-custody begins with the manufacturer and includes all intervening parties thereby providing an historical record of the custody of the material at all times throughout the pre-delivery stages.

## ***B. Post-Delivery/On-Site – Insecticide and Fuel***

### **1. Handling and Distribution**

Only trained and authorized personnel of the Contractor, using appropriate personal protective equipment, shall handle and load materials such as insecticides and fuel.

### **2. Materials Storage**

Security for the on-site storage of insecticide, adjuvant, fuel and mix-water is the responsibility of the Contractor. All undiluted insecticide and adjuvant must be stored in its original containers and kept in a secured location to restrict unauthorized access. The fill ports on the fuel and water tanks on nurse trucks or other storage tanks must be locked at all times. The delivery systems of all tanks must be sealed and disabled overnight and during non-operational periods. Storage facilities should be clearly identified to all project personnel in order to enlist the support of all personnel in safeguarding the material.

### **3. Storage and Delivery Systems**

All insecticide holding containers, hoppers, mix tanks, pumps, hoses, and similar equipment for fuel and mix water must be inspected for evidence of tampering prior to the start of operations.

## **V. FACILITY SECURITY**

### ***A. Airport Lighting and Fencing***

The Contractor must evaluate airport security lighting in the aircraft ramp area as well as in vehicle parking lots. Spray aircraft should be moved into a lighted area to adequately secure the aircraft overnight.

Security fencing around an airport limits the potential for an intruder to tamper with aircraft. The lighting and fencing are normally identified on the airport operations plan, which can aid the Contractor in negotiating ramp space for aircraft parking.

### ***B. Emergency Services***

The Contractor must identify what emergency services are available on-site and from nearby communities. The location of hospitals, police, fire and other emergency service providers is listed in the safety plan. All project personnel should be familiarized with this information. A daily safety briefing is required.

### **C. Spectators**

No spectators or other unauthorized personnel are permitted within the designated perimeters of the landing/loading zone or takeoff area. A visitor staging area should be clearly identified and maintained to provide for the safety and security of personnel actively engaged in the project and the visitors to the site. Unauthorized people at the airport or helicopter landing zone are to be asked to leave, and are to be reported to the Field Project Coordinator.

### **E. Heliport Security**

Security of a heliport located in a rural area can best be protected by being as inconspicuous as possible so not to attract unwanted attention and visitors. If aircraft and/or equipment and supplies must be left at a heliport overnight, the Contractor must provide adequate security as described above or use a guard service.

## **VI. COMMUNICATIONS**

### **A. Pennsylvania Emergency Management Agency Notification**

The Pennsylvania Department of Agriculture (PDA), in cooperation with the Pennsylvania Emergency Management Agency (PEMA), has developed a voluntary, coded notification system for aerial applicators working in Pennsylvania. The applicator fills out a form with the appropriate security code, the area in which they are working, and a description of their aircraft and faxes or e-mails the form to PEMA on a daily basis. PEMA, in turn, alerts the 911 operators in the affected spraying of the planned treatments. The Division of Forest Health Project Leader will submit daily reports to PEMA for the applicators working on the project.

### **B. Public Information**

It is important to keep the public informed prior to and during the aerial spraying operation. However, specific information with regard to security procedures must not be divulged except in generic terms. Media interviews are generally handled by the Project Safety Officer, his designee or the Contract Coordinator.

### **C. Computers**

Computer hardware, software, passwords, and e-mail addresses must be kept secure at all times. Specific guidelines are found in the following Commonwealth of Pennsylvania Management Directive: MD 210.5, July 29, 2010.

### **D. Radio Usage**

#### **1. Safeguarding Frequencies**

Radio frequencies used during the spray project are not to be divulged to the general public or media.

## **2. Radio Transmissions**

Radio transmissions must be limited to project needs only. Consider coding aircraft call signs rather than using pilot names and aircraft tail numbers and coding geographic locations with numeric or alphanumeric identifiers. Specific guidelines are detailed in Management Directive: MD 245.15, January 14, 2015.

## **E. Telephone**

Cellular telephone transmissions are not as secure as hard-wired phones. Using the same coding protocol as described above for radios will provide an additional degree of security. Specific guidelines are detailed in Management Directive: MD 240.11, April 11, 2012.

## **VII. THREAT RESPONSE REPORTING PROTOCOL**

If a security breach or threat is detected at any time, do not put yourself in harm's way by attempting to resolve the situation yourself. Insofar as possible, secure the area to make sure that nothing is tampered with and then use the following protocol:

- Contact the Contractor project supervisor and the Field Project Coordinator
- Contact the local and state law enforcement by dialing 911 for immediate emergencies or by dialing the law enforcement agency's telephone number
- If warranted, contact the local FBI office

Terrorist events such as shooting or attacking an aircraft while in flight must be reported to the local FBI field office as this is a federal offense. Aircraft accidents must also be reported as spelled out in the project safety plan.

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## *AIR OPERATIONS WORK PLAN*

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## **I. INTRODUCTION: Project Purpose, Objective, and Scope**

The purpose of the 2024 suppression project is to reduce *Lymantria dispar* populations in order to mitigate the aesthetic, economic, and environmental losses caused by *Lymantria dispar* caterpillars feeding in forested areas. Under current Pennsylvania Department of Conservation and Natural Resources (DCNR) policy, treatment areas are restricted to forested residential communities, public recreational areas, forest stewardship lands, and high-value state-owned forest stands. The objective is to prevent defoliation in excess of 30 percent on 80 percent or more of the highly favored host trees within a treatment area. In 2024, it is anticipated that 222,617 acres in 173 spray blocks will be treated with single application, and 5,203 acres in 12 blocks will be treated with a double application of Btk. The suppression project will consist of two treatment projects (rotary Btk and fixed wing tebufenozide).

Some targeted forested acres will receive a single application of the biological insecticide *Bacillus thuringiensis* var. *kurstaki* (Btk) (Foray® 76B) undiluted at a dose of 38 BCLU per acre and a rate of ½ gallon per acre; in a few instances, a second application of Btk will follow (12 blocks, 5,203 acres). Other targeted areas will receive a single application of the insect growth regulator tebufenozide (Mimic 2LV) at a rate of 6 fl oz per acre and spray volume of ½ gallons per acre. A map showing the distribution of the proposed treatment areas is provided in Appendix 5.

## **II. PERSONNEL AND ORGANIZATION**

### **A. Project Organization**

The *Lymantria dispar* suppression program in Pennsylvania is conducted by the DCNR Bureau of Forestry and coordinated by the Bureau's Division of Forest Health (DFH). State Forests and State Parks are eligible for *Lymantria dispar* suppression if there is need and the area qualifies. In addition to using state government funds, funding support for the program is also provided by the USDA Forest Service. Under this program, State Forest District Managers and State Park Managers submit proposals that are evaluated by DCNR to ensure compliance with standards established by DCNR. DCNR then contracts for and conducts the spraying of the approved acres.

The Commonwealth is divided into 20 forest districts with each district supervised by a forest district manager (District Forester). Some personnel needed to conduct the operational phase of a spray project come from the staff of these forest districts. The number of personnel needed is dependent upon the amount of acreage to be sprayed and the number of aircraft that will work on the project. See Appendices 1 and 2 for

an organizational chart and the names, addresses and telephone numbers of the district foresters and the Bureau's Division of Forest Health area staff.

Approximately 60 persons employed by DCNR and the aerial applicators will be actively involved throughout the spray operations. The following shows the various job titles with a description of the responsibilities and the estimated number of people doing the job.

**1. Bureau of Forestry Employees**

**a. Forest Health Manager**

The forest health manager is a full-time professional forest health manager who serves as chief of the Division of Forest Health and who has overall responsibility for the suppression program. The division chief is also responsible for managing and allocating the funds available for overtime, travel expenses, equipment, supplies, materials, and contracts, and for processing all forms and reports necessary to obtain federal funds. This person also serves as a safety officer on the project.

**b. Forest Health Supervisor**

The forest health supervisor is the head of the Program Services & Support Section who serves as the program supervisor and is responsible for the overall planning, coordination, and supervision of the statewide suppression program. The program supervisor develops guidelines, sets deadlines, and establishes procedures that ensure that the program is conducted in a manner that satisfies all existing regulations and policies and meets program objectives. The program supervisor's support staff aids in planning and conducting annual program monitoring, evaluation, and quality-control projects; ordering and distributing necessary equipment and supplies; training district program leaders; and providing the services necessary for the successful completion of the program. This person also coordinates the program's communications and notifications with the Pennsylvania Emergency Management Agency (PEMA).

**c. Field Operations Supervisor**

The Field Operations Supervisor is the supervisor of the Field Operations Section and responsible for overseeing and supervising all field operations during the program, specifying and approving spray systems, troubleshooting problems with mix and spray systems, monitoring calibration and characterization procedures, analyzing quality control checks, enforcing safety requirements, reviewing and approving/disapproving Application for Spray Aircraft Pilot Approval Forms and Aircraft Description Forms, and compiles and communicates

daily progress reports to the Program Supervisor. Also responsible for GIS data generation and management; coordination and oversight of cooperators; ensure adherence to proposal and operational guidelines and deadlines.

**d. District Program Leader**

Each forest district manager designates an employee from the district's professional staff to serve as the district program leader (DPL). This person is responsible for preparation of a State Forest proposal within the district according to established procedures and also for acting as liaison with the Division of Forest Health. The DPL is supported during the course of a project by other permanent district staff and, as necessary, temporary seasonal help.

**e. Area DFH Specialist and Assistant Area Specialists**

The area specialist (ADFHS), under the direct supervision of the Field Operations Supervisor, serves as the field representative of the Division of Forest Health and is responsible for organizing and coordinating the conduction of an annual area wide suppression project according to established procedures, guidelines, and contract specifications. The ADFHS is responsible for making initial information contacts, in cooperation with the district forester, with county or other municipal officials; making an estimate by July 1 of the acreage requiring treatment for the following season; providing initial and annual update training for DPLs and county *Lymantria dispar* program coordinators; reviewing performance of county *Lymantria dispar* program coordinators; reviewing and approving private residential and State Forest proposals; evaluating and approving State Park, federal, and other agency proposals; reviewing and approving all spray block maps; determining type of aircraft best suited for treating each spray block; determining types of aircraft and numbers of each needed within the area; conducting or arranging for training sessions for new or inexperienced temporary and/or permanent employees and/or State Forest Volunteers; and collecting data to evaluate spray block treatment effectiveness.

The ADFHS may delegate this authority and assign any of the above duties to the assistant ADFHS as the workload dictates.

**f. Field Project Coordinator**

Depending upon the overall size of the annual suppression project, one or more ADFHSs may be designated as a field project coordinator. In larger project years, each area may have its own contract with the responsible ADFHS serving as the field project coordinator.

In addition to the duties described under (d) above which are specific to their area, the field project coordinator is responsible for organizing inter-district logistics and arranging personnel assignments necessary to effectively conduct the operational phase of the suppression project; making the spray-timing decision; notifying the spray contractor of the starting date and location; verifying the calibration of the spray aircraft; performing contract compliance check of contractor; conducting pre-spray briefing for pilots and other contractor personnel; coordinating the inter-district movement of spray aircraft within the contract area; making spot checks during the course of the spray operation to assess the contractor's performance relative to mixing procedures, aircraft calibration, application quality, and general contract compliance; and providing an annual overall assessment of the field portion of the suppression project.

The field project coordinator is also responsible for documenting and reporting any deviations from standard procedures to the DFH division chief, program supervisor, or Field Operations supervisor for resolution. The field project coordinator has the authority, as the DFH division chief's designee, to halt spraying operations if spraying is being conducted under unacceptable conditions or in an unacceptable manner.

**g. Aircraft Dispatcher**

The aircraft dispatcher position entails considerable responsibility and is filled by an employee or a district employee in the forester or forest technician classification on a volunteer basis. One dispatcher is assigned to each spray aircraft or group of aircraft working from a single landing zone and remains with that aircraft in all forest districts and counties for the duration of the project. The dispatcher is responsible for gathering and recording all information required on the Daily Aircraft Record; for preparing load-by-load manifests of spray blocks and reviewing them with the pilot and other contractor personnel; and for monitoring application timing. This person must also critically observe insecticide mixing and is responsible for reporting any inconsistencies in the mixing procedure to the contractor's project supervisor and to the field project coordinator. In conjunction with the field project coordinator, the dispatcher relays the stop-spraying decision to the contractor personnel. Other duties may also be assigned.

**h. Field Monitoring Technician**

The monitoring technician is responsible for monitoring larval and foliage development and collecting weather data in the spray blocks.

The field monitoring technician may be an employee or a full-time or temporary forest district employee. One to three monitoring technicians

with a radio-equipped vehicle are assigned to each spray aircraft. The monitoring technician is assigned to a specific aircraft while the aircraft is in the monitoring technician's forest district. A new monitoring technician is assigned to the aircraft when it moves to another forest district. Each monitoring technician must be thoroughly familiar with the assigned spray blocks - this often necessitates a visit to the area prior to the spray date. The monitoring technician must be equipped with a portable radio. The monitoring technician is required to report any out-of-the-ordinary situations such as groups of people within the treatment area and to report observations of the completeness and uniformity of insecticide application. Data on larval and foliage development and weather conditions are collected as instructed by the field project coordinator or aircraft dispatcher.

**i. Aircraft Operations Safety & Training Specialist**

The Bureau of Forestry's Aircraft Operations Safety & Training Specialist annually reviews the decision of the field project coordinator regarding the acceptability of aircraft and pilots for use on the suppression project. If necessary, the field project coordinator may request the aircraft operations specialist to conduct inspections of the aircraft and meet with the pilots on site or at the contractor's headquarters to determine that all aircraft are properly certificated and airworthy and that the pilots are properly licensed and rated. The aircraft operations specialist is required to complete this inspection and to report any problems with aircraft or pilots to the program supervisor in sufficient time to prevent any delay of the suppression project. The aircraft operations specialist also oversees implementation of the project's safety plan.

**j. Radio Engineer**

The radio engineer is a full-time DCNR employee who monitors and ensures the satisfactory performance of Department radio units and relays used throughout the suppression program.

**k. DFH Radio Technician**

The DFH radio technician is a full-time Bureau of Forestry employee who is responsible for checking the contractor's compliance with contract-specified, radio-related equipment, evaluating the performance of that equipment, and maintaining and distributing an DFH cache of portable radios. During spray operations, the technician troubleshoots radio-related problems.

**l. Office Staff**

This Bureau of Forestry employee is responsible for maintaining communications between the district office and the field operations via telephone and a base station radio. The office staffer must keep up to date on the operation and be able to field questions regarding the project which may arise from sources such as supervisors, the press, other involved agencies, and the public by answering the questions or directing the inquirer to the proper person.

## **2. Contractor Employees**

### **a. Contractor Project Supervisor**

The project supervisor is a full-time employee of the contractor who directs the on-site operations of the contractor, resolves operational problems, and represents the company in contractual matters.

### **b. Spray Pilot**

The spray pilot is a full-time or contracted employee of the contractor who flies the aircraft that applies the insecticide. The pilot is responsible for flying safely and applying the material in the proper manner at the prescribed rate to the designated areas.

### **c. Observation Pilot**

The observation pilot is a full-time or contracted employee of the contractor who flies an observation airplane which is used to provide reconnaissance, navigational, and swath alignment assistance to one or two fixed-wing spray aircraft. An observation pilot is required, only as necessary, to provide assistance to spray pilots working in unfamiliar territory. An observation aircraft will not be used in 2013.

### **d. Navigator**

The navigator is a full-time or contracted employee of the contractor who, if needed to assist the observation pilot, rides in the observation aircraft and aerially previews all spray blocks and provides reconnaissance, orientation, and spray run alignment assistance to one or two fixed-wing spray aircraft pilots. No navigators are slated for use on the 2013 project.

### **e. Mixer/Loader**

The mixer/loaders are full-time or temporary employees of the contractor who drive the ground-support trucks, mix the insecticides, load the aircraft, and perform any other duties assigned to them by the pilot or project supervisor.

### **3. Other Agency Employees**

#### **a. Other State Agencies**

The DCNR's Bureau of State Parks temporarily assigns full-time employees to assist with various aspects of the program if needed. Occasionally, other state agencies make similar commitments. Pennsylvania Game Commission conducts their own suppression program on State Game Lands.

#### **b. Federal**

USDA Forest Service personnel assist by insuring that all necessary paperwork, including carding, is completed to meet federal requirements for reimbursement funding. The Area Aviation Officer may also conduct on-site visits during operations. The USDA Forest Service will also be providing a federal contractor to function as the Airspace Coordinator. This individual will create Notices to Airmen (NOTAMs) indicating areas of operation and serve as the project's liaison with the FAA, military, and any other aviation agencies.

### ***B. Program Administration***

The line-of-responsibility chart (Appendix 1) shows that the state forester (i.e., director of the Bureau of Forestry) has final responsibility for the entire suppression program. As his designee, the chief of the Division of Forest Health formulates the scope of the program and is responsible for obtaining funding. The Forest Health Suppression supervisor works within the rules and regulations of the Commonwealth and DCNR to administer the spray program. To accomplish this, the program supervisor relies on the help and expertise of the division staff to ensure compliance with rules and regulations and to make sure the project is accomplished in a safe and efficient manner. The Field Operations Supervisor and designated field project coordinators are responsible for the direct supervision of the operational portion of the project.

## **III. TREATMENT AREAS**

### ***A. Treatment Area Selection***

The coordinator conducts field surveys and submits a digital map proposal to DCNR by October 1. DCNR personnel work closely with the cooperator while the proposal is being prepared to ensure that the proposal meets the minimum infestation and forest cover requirements as specified in the Program manuals. State, federal, and certain other lands are proposed for spraying by the agencies or owners that are responsible for their management. These areas are proposed in mid-September, digitized, and reviewed before December 1.

All proposed treatment areas have a biological evaluation conducted to determine their acceptance for inclusion in the suppression project. After a treatment area is approved for inclusion in the project, it can be dropped if the local manager objects to the spraying, or it is determined that there are not sufficient numbers of insects present to justify treatment.

## **B. Block Boundaries**

Spray block boundaries are drawn using Geographic Information System (GIS) software to facilitate spraying following forest boundaries, insofar as possible. For residential blocks, the objective is to provide treatment of the forest for a distance of 500 feet around the residence. Blocks in the State Forest, State Park, Federal, and Other ownership categories are drawn only large enough to protect the resource.

Each spray aircraft is equipped with an electronic tracking, guidance, and recording system (ETGARS) that assists the pilot in accurately locating the spray block and ensures that it is effectively sprayed. If requested by the spray pilot because of extraordinary circumstances, selected reference points are marked in the spray block using helium-filled balloons according to a standard code developed for the contract area. If necessary, exclusion areas, such as objector properties, are identified with balloons of a unique color. If used, the balloons are attached to a piece of cotton string of adequate length to allow the balloon to rise above the treetops.

# **IV. PRESpray OPERATIONS**

## **A. Biological Monitoring**

Spraying will start in all of the contract areas in late April or early May depending upon insect development and tree foliage expansion. The contractors will be given a five-day advance notice of the date to report on-site with their equipment and aircraft. To determine this starting date, treatment areas are periodically checked by foresters and/or area DFH staff starting in mid-April. Both *Lymantria dispar* egg hatch and foliage development are closely monitored to ensure proper timing of the application.

In *Lymantria dispar* treatment blocks classified as tentative, prespray larval counts are made after hatch and dispersal to verify the presence of defoliating populations. Most of these tentative *Lymantria dispar* areas do not contain large numbers of egg masses, but are highly susceptible to larval blow-in. Any area without defoliating population levels of any of the target species will not be treated. Larval counts will also be made in all areas subject to overwinter egg mass mortality to confirm the presence of defoliating populations. Blocks where significant overwinter mortality has occurred will be dropped from the program.

## **B. Calibration**

Verification of aircraft calibration takes place within five days of the start of spraying. Before the check, each aircraft is inspected for compliance with contract specifications concerning certificates, maintenance documentation, and safety equipment and for a general assessment of airworthiness based upon appearance.

The field project coordinator verifies aircraft spray system calibration. The spray system is checked for the numbers, type, and size of the rotary atomizers, boom length, orientation of the rotary atomizers on the boom, possible system leaks while under pressure, and residue from other products in the system. A desired flow rate in gallons per minute is determined based upon air speed, lane separation, and volume per acre. The flow rate for individual rotary atomizers in a timed interval is measured as part of the check. Lane separations provided by the USDA Forest Service are assigned based upon accepted standards for the aircraft type, spray system type, and material being sprayed. Droplet size and density are also dependent upon the same factors. Rotary atomizers will be used on all aircraft. These rotary atomizers will produce a droplet spectrum with no more than a 150-micron VMD (volume median diameter) for the Btk application.

Btk will be applied undiluted in a single application at 38 BCLU per acre. The initial flow-rate checks for the Btk will be made with water. Each aircraft is equipped with an electronic spray timer and flow meters that will be used throughout the program to maintain  $\pm 5$  percent accuracy on the volume applied per acre.

## **C. Prespray Training**

All personnel involved in the suppression operation are given training before the project begins. Each year the Forest Health Suppression supervisor conducts a prework briefing for the area DFH specialists and the contractors' representatives for all contract areas. The session covers program changes, logistics, and safety and emergency procedures. The area DFH specialists provide updated training (see Appendix 3) to district program leaders, experienced aircraft dispatchers, marking/monitoring technicians, and others that work on the program for the district, including newly hired permanent and inexperienced temporary employees and State

Forest volunteers. Finally, the field project coordinator conducts a pre-spray briefing for the spray aircraft pilots, observation pilots and navigators, and the contractor's ground personnel (see Appendix 4).

## V. SPRAY OPERATIONS

### A. Communications

Each spray aircraft is equipped with a two-way FM portable radio. The pilot is required to have constant radio contact with the ground-support personnel and, if one is used, an observer in a chase plane. This enables the pilot to communicate with field crews if questions concerning spray block marking or location arise. The radio frequency used is dependent on where spraying is occurring (see table below).

Name	Transmit Freq	Receive Freq	Transmit Call Guard	Receive Call Guard	Notes
<b>AIRGUARD</b>	168.625	168.625	110.9	110.9	Emergency Use Only
<b>COMPACT</b>	159.285	159.285	CSQ	CSQ	A/G for all other districts
<b>AirCent</b>	159.375	151.2725	250.3	CSQ	Flight Following
<b>TAC-1</b>	151.4	CSQ	151.4	CSQ	Secondary Use only
<b>TAC-2</b>	151.3325	CSQ	151.3325	CSQ	Secondary Use only
<b>FD01 DIR</b>	154.3475	154.3475	71.9	71.9	Secondary Use only
<b>FD02 DIR</b>	156.1275	156.1275	192.8	192.8	Secondary Use only
<b>FD03 DIR</b>	155.9325	155.9325	77	77	Secondary Use only
<b>FD04 DIR</b>	151.3625	151.3625	192.8	192.8	Secondary Use only
<b>FD05 DIR</b>	151.28	151.28	79.7	79.7	Secondary Use only
<b>FD06 DIR</b>	159.435	159.435	74.4	74.4	Secondary Use only
<b>FD07 DIR</b>	151.34	151.34	85.4	85.4	Secondary Use only
<b>FD09 DIR</b>	151.145	151.145	218.1	218.1	Secondary Use only
<b>FD10 DIR</b>	159.1575	159.1575	179.9	179.9	Secondary Use only
<b>FD12 DIR</b>	151.415	151.415	162.2	162.2	Secondary Use only
<b>FD13 DIR</b>	151.1075	151.1075	203.5	203.5	Secondary Use only
<b>FD14 DIR</b>	151.0925	151.0925	85.4	85.4	Secondary Use only
<b>FD15 DIR</b>	151.19	151.19	167.9	167.9	Secondary Use only
<b>FD16 DIR</b>	159.2325	159.2325	173.8	173.8	Secondary Use only
<b>FD20 DIR</b>	151.3475	151.3475	85.4	85.4	Secondary Use only
<b>Air East</b>	151.175	159.255	241.8		Secondary Use only
<b>Air West</b>	155.1075	159.1875	233.6		Secondary Use only

### B. Military Training Routes

Military agencies who are operating on a military training route (low-level flight) as designated on the Commonwealth of Pennsylvania Aeronautical Chart or other map supplied by the aircraft operations advisor are notified of any impending spray operations through the issuance of NOTAMs (Notice to Airmen). These NOTAMs are issued by the airspace coordinator through the FAA Flight Service Stations prior to the start of operations or whenever an operation is moved. The NOTAM references a point located at a given bearing and distance from a VOR (very high frequency omni-directional range radio navigational aid) and states the time that operations will be conducted within a certain radius of that point. Federal regulations require that all military agencies involved in low-level flights include these NOTAMs in their pilot briefings.

### **C. *Spray Schedule and Constraints***

Because of the short spray-window available when using a biological insecticide, it is essential that advantage be taken of any acceptable spray weather within the limits imposed by insect and foliage development, pilot duty and flight hour limits, certain time-of-spray restrictions, and safety considerations. Therefore, spraying must take place whenever weather conditions permit including evenings, weekends, and holidays. However, evening spray operations are not to be routinely scheduled. Evening spray operations are only to be considered due to extenuating circumstances. District and Division of Forest Health field personnel are authorized to use overnight travel status whenever necessary even if within 50 miles of home or headquarters to facilitate the safe and expedient completion of the suppression project.

Spraying in and under certain conditions must be curtailed at times to avoid potential conflicts with land users.

- No spraying in state, federal, or other parks and/or campgrounds is permitted from noon on Friday through Sunday or from noon the day preceding a holiday through the holiday unless special arrangements have been made with the park manager. These special arrangements must include a written waiver signed by the park manager that persons utilizing that area are not being exposed to insecticide treatment against their will or without their knowledge.
- Evening spraying (1:00 p.m. until dusk) on Saturday, Sunday, or a holiday must be restricted to State Forest land or other land ownerships where potential land user conflicts would be minimal. Evening spraying is not routine and will only be used if the project falls behind schedule due to extensive poor weather conditions.
- No spraying may be conducted over school buses while they are actively picking up or discharging students or over any group of schoolchildren or other persons congregated within the spray block.

Spraying may only be conducted under the following weather conditions:

- Wind velocity must be 10 mph or less when measured in or near the spray block with a hand-held wind gauge. If excessive drifting of the spray cloud occurs because of higher wind velocity above the forest canopy, spray operations must be suspended even though surface-level wind conditions are 10 mph or less. Caution must also be exercised when dead calm conditions exist because of the formation of temperature inversion layers. Under such conditions, the smaller droplets in the spray cloud will remain suspended and will not settle into the forest canopy. Spray operations must be curtailed until such conditions clear.
- Probability of precipitation within six hours after the completion of spraying must be 50 percent or less as provided by Flight Service Weather (1-800-992-7433) or National Weather Service (closest local source). Any Btk, Mimic, or Gypchek block that incurs significant precipitation (0.25 inch or more) within four hours of spraying must be evaluated and, if necessary, resprayed.
- Relative humidity (RH) must be high enough to prevent evaporation of the smaller droplets in the spray cloud before they contact the foliage (large droplets may still be deposited). Spray deposition must be monitored closely when RH drops below 50 percent with spraying curtailed when excessive evaporation is observed.
- Air temperature in the shade at approximately five feet above the ground should be 40°F-80°F. Spraying may continue above 80°F if thermals are not developing and the spray cloud is settling into the canopy without excessive evaporation. Spraying may continue below 40°F as long as weather conditions are suitable for aircrafts to safely operate.
- Foliage must not be dripping wet from precipitation or overnight dew.

#### ***D. Pilot and Ground Personnel Briefing***

Prior to the start of spraying, the aerial application contractor's pilots and ground-support personnel are briefed by the field project coordinator on the objectives, procedures, and constraints of the spraying program. The outline used for this briefing is included in Appendix 4. Each pilot must sign a copy of this briefing outline attesting that it was given to him/her and the listed ground-support personnel.

A manifest for each day's operation is developed the preceding day. The pilot has a chance to study the maps, photographs, or other images and become familiar with landmarks that will be utilized as reference points. In addition, during the spray operation while the aircraft is being reloaded with insecticide and fuel, the pilot and dispatcher should take the opportunity to review the manifest and go over any details

that are pertinent or specific to the area that will be treated with the next load. This is especially important if there are designated sensitive areas associated with the treatment area. Sensitive areas are highlighted on the pilot's map and, when appropriate, are marked on the ground with orange balloons.

#### ***E. Insecticide Handling, Mixing, and Safety***

The contractor is responsible for handling and transporting the insecticide in a safe and judicious manner. All insecticide is provided by the contractor, and unused insecticide is the responsibility of the contractor. All empty containers are to be disposed of by the contractor in accordance with the manufacturer's recommendations.

Since the insecticide used presents little hazard to users, no special precautions other than those listed on the label and those observed in the normal handling of any insecticide need be observed. Providing personal protection equipment (PPE) to the contractor's personnel is the responsibility of the contractor.

Department personnel are not required to handle insecticide in this operation. If the contractor requires assistance in handling spray-related equipment, it is required to provide any required personnel protective equipment for Department personnel.

Persons in the spray area are instructed not to look up when the droplets are falling since eye contact may cause irritation and discomfort.

The following general safety precautions for handling these insecticides are observed at all times.

- The entire label must be read before opening an insecticide container, noting all warnings and cautions. Instructions must be followed carefully keeping in mind that all insecticides are toxic.
- No smoking is permitted while spraying or mixing insecticide.
- After handling insecticides, ensure that hands and face are thoroughly washed before eating or smoking.
- If liquid insecticides are spilled on the skin, wash the exposed area immediately and thoroughly. If spilled on clothing, the clothing must be removed and washed before being worn again. Contaminated work clothes must not be laundered with other clothing.
- Drops or particles of insecticides in the eye must be removed by flushing with large quantities of clear water.

- Respirator or goggles must be worn if required by the product label.
- In handling and mixing insecticides, clean synthetic rubber gloves must be worn if required by the product label.
- If insecticide is ingested, the local poison control center must be contacted.
- A list of area hospitals, doctors, fire and ambulance service, and law enforcement agencies with phone numbers must be available at the base of operations.

#### ***F. Application Monitoring***

All spray aircraft will be equipped with an electronic tracking and guidance system that will be used to improve spray application accuracy. This system utilizes the global positioning satellites (GPS) to keep the spray aircraft on course and to inform the pilot when to spray. An electronic record that can be reviewed as needed by DCNR is maintained of the aircraft's position relative to the spray block along with the spray boom-on time. By using this system, overall application will be more uniform, and application skips and misses can be detected and quickly touched up.

Application uniformity can also be assessed by marking/monitoring technicians checking for spray deposition on foliage, rocks, mailboxes, vehicles, and similar objects within the block. Ground crews will have radio contact to advise the aircraft dispatcher of any observed skips, malfunctioning rotary atomizers, or similar problems.

The volume of insecticide applied per acre will be monitored primarily by periodic checks of the aircraft spray timer to maintain the flow rate within 5 percent of the rate established for that aircraft at calibration. Unannounced spot-checks will be made to verify aircraft calibration, pilot and ground crew performance, and contractor's compliance with contract specifications.

#### ***G. Project Progress Reporting***

Each aircraft dispatcher electronically reports total acreage treated by county and insecticide to the Division of Forest Health after each spray session via e-mail. This information is compiled for all spray contracts, entered into a database by the program supervisor, and reported daily to the USDA Forest Service field office in Morgantown, West Virginia, by 11 p.m. each day. The Monday report will cover Friday's evening spraying as well as any completed on the weekend.

## **VI. PUBLIC NOTIFICATION AND INFORMATION**

## **A. News Media**

The county uses the news media to inform the people of the program and its objectives during the summer prior to the suppression project. News releases are developed by the state and the cooperator. Public meetings are also held during this period to explain the situation and answer questions from local residents.

During the actual spraying, local news media carry information about the project. Residents can keep informed of the spraying schedule and locations by accessing the DCNR Bureau of Forestry web page and listening to the local news media reports or by contacting the local forest district office or the local program coordinator.

## **B. Notification of Hypersensitive Individuals**

Within 12 to 72 hours prior to spraying, Area Forest Pest Management Specialists must notify persons whose names appear on the Pennsylvania Department of Agriculture's Pesticide Hypersensitivity Registry of the impending spraying if they, by virtue of any of their contact points (primary address, secondary address, or other), are in or within 500 feet of any area scheduled for treatment. The notification must contain:

- Date, location (application site), earliest possible start time, and latest possible finish time of application [the range between start and finish times shall be no greater than twenty-four (24) hours].
- Brand name, EPA number, and active ingredient common name (if on the label) of all insecticide products that may be used.
- Name, telephone number, and pesticide business license number of the pesticide application business.
- Within ten days of a request, a copy of the label for every pesticide used.

## **VII. SAFETY PLAN**

A safety plan has been prepared for the overall project. As part of this plan, each district program leader must prepare an emergency contacts handout that incorporates names and phone numbers to be contacted in case of an accident, spill, or other emergency while spraying is being conducted within the district. The emergency contacts handouts for all districts involved in the annual project are combined into the overall safety plan for the entire project. A copy of this safety plan is given to all personnel involved in the operational phase of the project prior to the start of spraying.

## **VIII. POST-TREATMENT EVALUATIONS**

The ADFHS or assistant ADFHS will visit a representative sample of the spray blocks during the peak defoliation period in June and July to determine if our objective was met. The evaluation will be based on a visual assessment of the amount of defoliation within and outside the treatment area. Aerial observations will be made of many of the treatment areas during peak defoliation to compare them with surrounding untreated areas. An evaluation report will describe the effectiveness of the project in terms of meeting our stated objective.

## **IX. FINAL REPORT**

The DFH forest pest suppression supervisor prepares a detailed final report on the overall project that is available for distribution in December.

## **APPENDICES**

Appendix 1. Line-of-Responsibility Chart

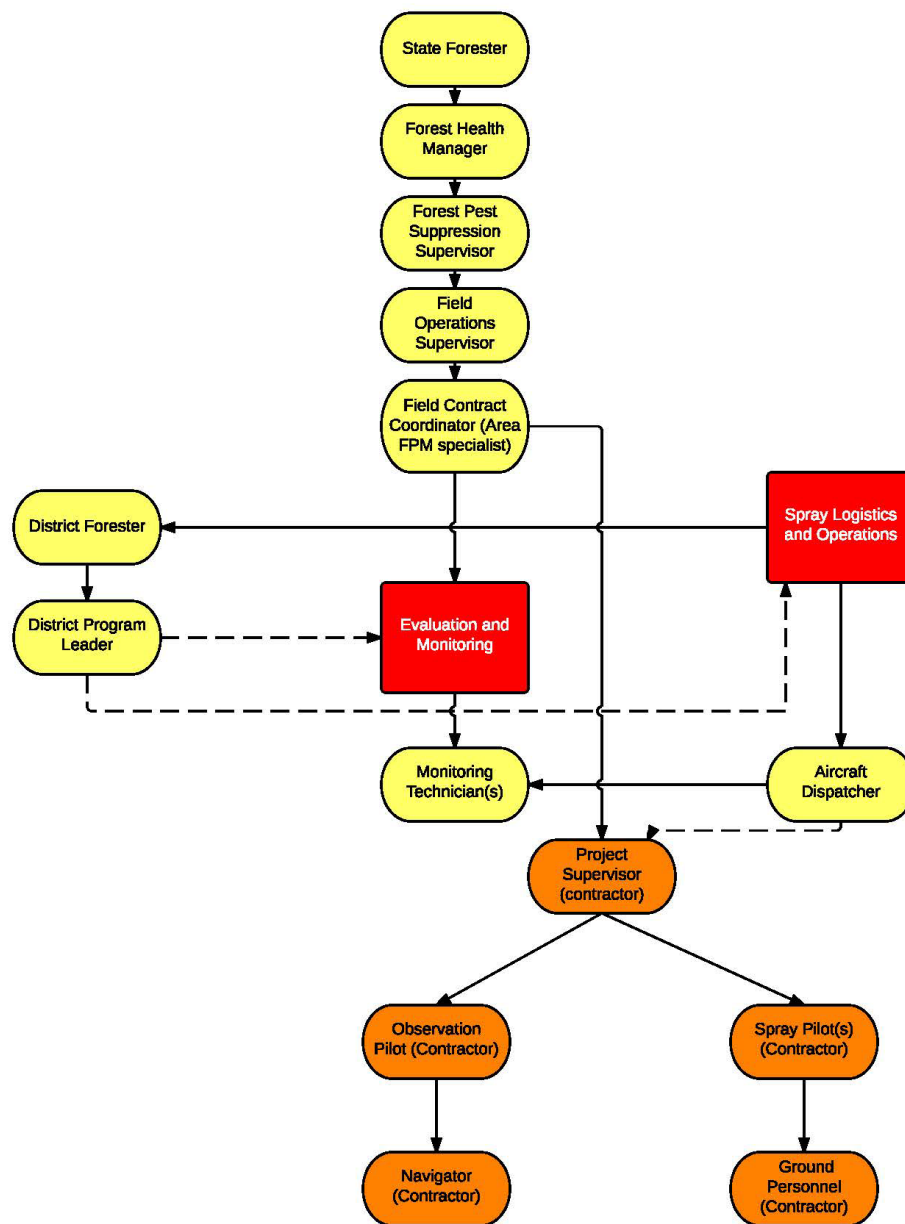
Appendix 2. PA Bureau of Forestry Forest Districts and Forest Pest Management Areas

Appendix 3. Temporary and New Permanent Employees and State Forest Volunteers  
Training Session Outline

Appendix 4. Briefing Agenda for Spray Aircraft Pilots and Ground-Support Personnel

Proposed Treatment Areas in Pennsylvania – 2024

## Appendix 1. Line of Responsibility Chart

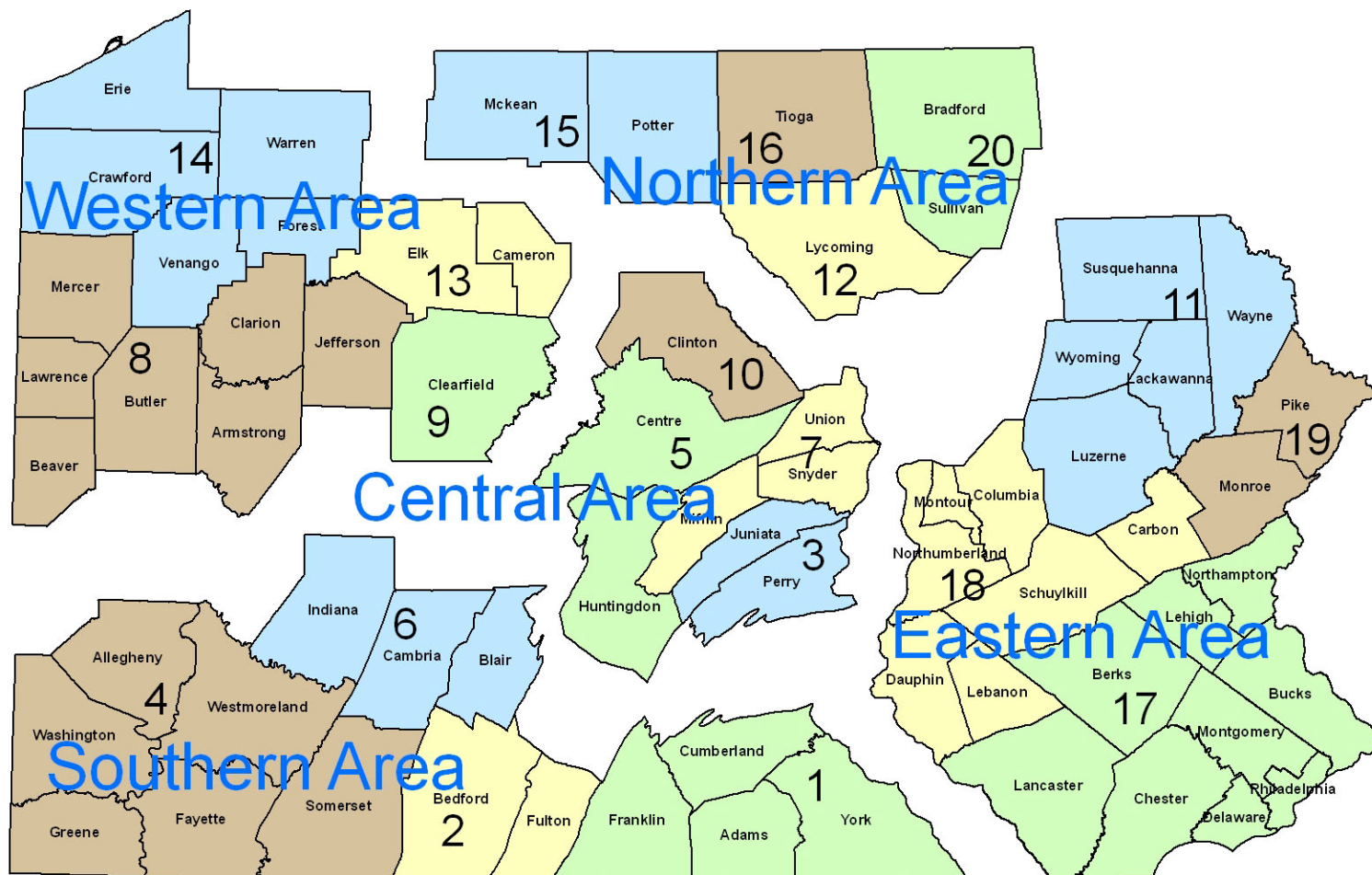


## **Appendix 2. DCNR-Bureau of Forestry-District Offices**

<b>SF District</b>	<b>District Forester</b>	<b>Street Address</b>	<b>City /Zip</b>	<b>Phone</b>	<b>Fax</b>
#1 MICHAUX	Roy Brubaker	10099 Lincoln Way	East Fayetteville, PA 17222	717-352-2211	717-352-3007
#2 BUCHANAN	Karli Naugle	440 Buchanan Trail	McConnellsburg, PA 17233	717-485-3148	717-485-9283
#3 TUSCARORA	Scott Miller	4455 Big Spring Rd	Blain, PA 17006	717-536-3191	717-536-3335
#4 FORBES	Edward A. Callahan	1291 Route 30 (PO Box 519)	Laughlintown, PA 15655	724-238-1200	724-238-5000
#5 ROTHROCK	Mark C. Potter	181 Rothrock Lane	Huntingdon, PA 16652	814-643-2340	814-643-6304
#6 GALLITZIN	Bob Wetzel	155 Hillcrest Dr	Ebensburg, PA 15931	814-472-1862	814-472-1876
#7 BALD EAGLE	Matt Beaver	18865 Old Turnpike Rd	Millmont, PA 17845	570-922-3344	570-922-4696
#8 CLEAR CREEK	Nathan Fice	158 South Second Ave	Clarion, PA 16214	814-226-1901	814-226-1704
#9 MOSHANNON	John Hecker	3372 State Park Rd	Penfield, PA 15849	814-765-0821	814-765-0621
#10 SPROUL	Greg Kisko	15187 Renovo Rd	Renovo, PA 17764	570-923-6011	570-923-6014
#11 LACKAWANNA	Nicholas P. Lylo	1839 Abington Rd	Scranton, PA 18503	570-945-7133	570-945-7249
#12 TIADAGHTON	Tom Casilio	10 Lower Pine Bottom Rd	Waterville, PA 17776	570-753-5409	570-753-5721
#13 ELK	Joe Kellert	258 Sizerville Road	Emporium, PA 15834	814-486-3353	814-486-5617
#14 CORNPLANTER	Cecile M. Stelter	323 N. State St	North Warren, PA 16365	814-723-0262	814-723-0270
#15 SUSQUEHANNOCK	Marc Popchak	3150 E. Second St. (PO Box 673)	Coudersport, PA 16915	814-274-3600	814-274-7459
#16 TIOGA	Benn Carlson	One Nessmuk Lane	Wellsboro, PA 16901	570-724-2868	570-724-6575
#17 WILLIAM PENN	Richard Hartlieb (ADF)	845 Park Rd	Elverson, PA 19520	610-582-9660	610-582-9692
#18 WEISER	Heather Yeager (ADF)	16 Weiser Lane (PO Box 315)	Aristes, PA 17920	570-875-6450	570-875-3605
#19 DELAWARE	Timothy R. Dugan	2174A Rt. 611	Swiftwater, PA 18370	570-895-4000	570-895-4041
#20 LOYALSOCK	Richard A. Glinski	6735 Route 220	Dushore, PA 18614	570-946-4049	570-946-4059
PENN NURSERY	Annetta Ayers	137 Penn Nursery Rd	Spring Mills, PA 16875	814-364-5150	814-364-5152

# Bureau of Forestry Forest Districts

## Division of Forest Pest Management Field Areas



### **Appendix 3. Training Overview for Temporary and New Permanent Employees and State Forest Volunteers**

#### TRAINING SESSION OUTLINE

- 1) *Lymantria dispar*
  - a) Background and History
  - b) Scope of Program
    - i) Statewide
    - ii) District
  - c) Objectives of Program
    - i) Residential
    - ii) State Forest
    - iii) State Park
    - iv) Other
  - d) The Insects
    - i) Biology
    - ii) Recognition
      - (1) Instar determination, if necessary
- 2) Work Schedule
  - a) Weekdays
  - b) Saturday, Sunday, and Holidays
  - c) Evenings
- 3) Work Assignments
  - a) Crew
  - b) Vehicle
- 4) Map Use
  - a) County Highway Maps
    - i) Orientation
    - ii) Map symbols
    - iii) Road designation
  - b) Topographic Maps
    - i) Orientation
    - ii) Map symbols
    - iii) Roads
    - iv) Contour lines
    - v) Boundary lines
      - (1) Political
      - (2) Other
  - c) Spray Blocks
    - i) Numbering
    - ii) Boundaries
  - d) Landing Zones

- 5) Radio Communications
  - a) Use and Operation of Radio
  - b) Daily Check of Operation
  - c) Messages
    - i) Short and precise
    - ii) Plain English
  - d) Emergencies
- 6) Data Gathering and Reporting
  - a) Weather Conditions
    - i) Wind – wind gauge
    - ii) Air temperature – thermometer
    - iii) Humidity – psychrometer
    - iv) Foliage wetness
    - v) Spray cloud settling
  - b) Spray Card Placement
  - c) Foliage Development
    - i) Tree identification
    - ii) Acceptable foliage size
  - d) People-Related Activity
    - i) School buses
    - ii) Schoolchildren
    - iii) Other congregations of people
    - iv) Considerable backyard activity
- 7) Public Relations
  - a) Courtesy
  - b) General Public Inquiry
    - i) Answer if possible
    - ii) Refer to DPL or district office
  - c) Media Inquiry
    - i) Limit response to current activity
    - ii) Refer to DPL or district office
- 8) Review of Safety Plan

#### ***Appendix 4. Briefing Agenda for Contractor Spray Aircraft Pilots and Support Personnel***

- 1) Contract Specifications (provide copy to each spray pilot)
  - a) General Review
  - b) Detailed Review of the *Agreed Damages for Failure to Perform* Section
  - c) Instruct to Read Entire Document
- 2) Overall Project – Specific
  - a) Extent and Distribution
    1. Blocks

## 2. Acreage

- b) Personnel – Area, District, and Contractor
    - i) Duties
    - ii) Responsibilities
    - iii) Telephone numbers
  - c) Logistics
    - i) Aircraft assignment(s)
    - ii) Order of spraying
      - a. Blocks
      - b. Landing zones
- 3) Safety Plans (review and provide copies)
- a) Review Common Features
  - b) Review District Specifics
  - c) Provide Copies
- 4) Public Relations
- a) LZ Owner
  - b) General Public
  - c) Media
- 5) Spray Maps
- a) Symbols
  - b) Block Numbering
  - c) Landing Zones
  - d) Known Hazards to Aerial Navigation
  - e) Latitude/Longitude Coordinates
  - f) Returning Spray Maps to District
- 6) Aircraft and Support Equipment
- a) Production Capacity – Five-Hour Minimum
  - b) Security
  - c) Maintenance
    - i) Major – before start of project
    - ii) Routine – during down time
    - iii) Emergency
      - (1) Time limits
      - (2) Replacements
  - d) Releases (review form)
    - i) Temporary release
      - (1) Delay in operations
      - (2) Off-contract spraying
      - (3) Recalibration
    - ii) Reassignment to another district
    - iii) Release from project

- 7) Insecticide
  - a) Handling and Storage
    - i) Contractor responsibilities
    - ii) District responsibilities
  - b) Application Rates
- 8) Operations
  - a) Radio Communications
    - i) Daily operating and maintenance
    - ii) Daily operating condition check
    - iii) Identifiers
      - (1) Aircraft
      - (2) LZ dispatcher
      - (3) Others
  - b) Precautions
    - i) Reconnaissance flight
      - (1) FAR Part 137
      - (2) Identifying navigational hazards
      - (3) Delineating the spray block
    - ii) Objectors
      - (1) Avoidance
        - (a) No-spray buffer zone
        - (b) Flyovers
      - (2) Map designation
    - iii) Campground/park policy
    - iv) School bus/schoolchildren policy
    - v) Weekend/holiday policy
    - vi) Open water
      - (1) Shut off when over
      - (2) Avoid drift
  - c) Spraying
    - i) Daily cancellation procedure
    - ii) Delays
      - (1) Insect development
      - (2) Foliage development
      - (3) Weather
        - (a) Probability of precipitation
        - (b) Wind
        - (c) Humidity
        - (d) Temperature
        - (e) Moisture on foliage
    - iii) Daily start/stop decision
      - (1) District responsibilities
      - (2) Pilot responsibilities
        - (a) Unsafe flying conditions
        - (b) Unacceptable spraying conditions

- iv) Evening spraying decision
- v) Load manifest
  - (1) Spray blocks in order listed
  - (2) Complete block before starting another
- vi) Within-block specifics
  - (1) Start at house/facility
  - (2) Work to edge of block
  - (3) Treat
    - (a) Forested area
    - (b) Large trees around house/facility
    - (c) Provide proper buffer
  - (4) Do not treat
    - (a) Fence rows
    - (b) Scattered small ornamentals
- vii) Additional gallonage to finish block
- d) Application Monitoring
  - i) Ground observation
  - ii) Aerial observation
  - iii) Resprays
    - (1) Contractor expense
    - (2) Commonwealth expense
- e) Quality Control
  - i) Interim calibration checks
    - (1) Spray timer
    - (2) Nozzle flow rate
  - ii) Spray system check
    - (1) Nozzle wear
    - (2) Nozzle screens
    - (3) Boom filters
    - (4) Pump pressure
    - (5) Leaks

\_\_\_\_\_  
Date of Briefing

\_\_\_\_\_  
Signature – Area DFH Specialist or Designee

\_\_\_\_\_  
Print name.

I hereby certify that I and the assigned support person(s) assigned to work with my spray aircraft were provided with the above-outlined briefing on the date stated and by the person above signed and were afforded the opportunity to discuss in detail and to have clarified any item or subject that was in question.

List of support person(s), name, and title:

\_\_\_\_\_  
Signature – Spray Aircraft Pilot

\_\_\_\_\_  
Print pilot's name.

\_\_\_\_\_  
Print contractor's name.

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## Appendix 5. Map of Treatment Area

