

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

Prepared by:

Andrew Rohrbaugh, Forest Health Supervisor
Pennsylvania Department of Conservation and Natural Resources,
Bureau of Forestry-Division of Forest Health
P.O. Box 8552, 6th Floor, RCSOB
Harrisburg, PA 17105

March 21, 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
Private Resid								
State Forest	23	15,018	0	0	128	204,553	151	219,571
State Parks	20	2,740	0	0	1	227	21	2,967
PGC								
Fed	1	79					1	79
Totals	44	17,837	0	0	129	204,780	173	222,617

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

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:

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,



Ph: 717-425-5370
kesitch@pa.gov



PENNSYLVANIA GAME COMMISSION

BUREAU OF WILDLIFE MANAGEMENT

2001 ELMERTON AVENUE HARRISBURG, PA 17110-9797 | (717) 787-5529

November 14, 2023

Andrew Rohrbaugh
DCNR
400 Market Street
Ecological Services, Bureau of Forestry
Harrisburg, Pennsylvania 17101
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 PNDEI ER Tool found at 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

A PNHP Partner



SLG/slg



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
PNFI 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 https://www.fws.gov/media/national-bald-eagle-management-guidelines . To assist you in making a decision regarding impacts to bald eagles, a screening form can be found at https://www.fws.gov/media/northeast-bald-eagle-project-screening-form	

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

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 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

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.

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 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, flowing style.

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, 2nd Floor | Harrisburg, PA 17120-0093
Phone: 717.787.9121 | Email: 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).