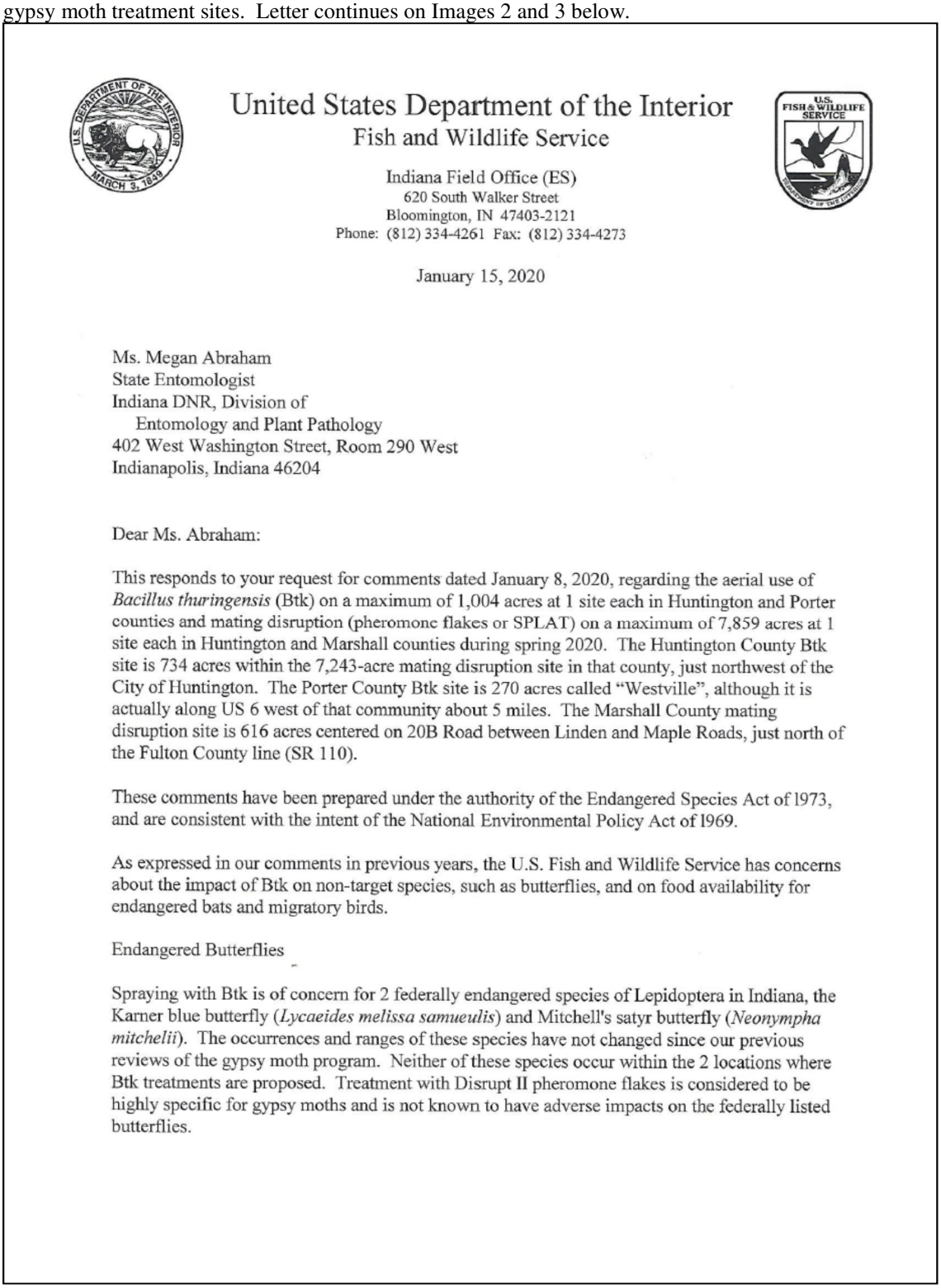
APPENDIX C. AGENCIES AND PERSONS CONSULTED

Image 1: U.S. Fish & Wildlife Service response letter for environmental review of the 2020 proposed gypsy moth treatment sites. Letter continues on Images 2 and 3 below.



United States Department of the Interior
Fish and Wildlife Service

Indiana Field Office (ES)
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

January 15, 2020

Ms. Megan Abraham
State Entomologist
Indiana DNR, Division of
Entomology and Plant Pathology
402 West Washington Street, Room 290 West
Indianapolis, Indiana 46204

Dear Ms. Abraham:

This responds to your request for comments dated January 8, 2020, regarding the aerial use of *Bacillus thuringensis* (Btk) on a maximum of 1,004 acres at 1 site each in Huntington and Porter counties and mating disruption (pheromone flakes or SPLAT) on a maximum of 7,859 acres at 1 site each in Huntington and Marshall counties during spring 2020. The Huntington County Btk site is 734 acres within the 7,243-acre mating disruption site in that county, just northwest of the City of Huntington. The Porter County Btk site is 270 acres called "Westville", although it is actually along US 6 west of that community about 5 miles. The Marshall County mating disruption site is 616 acres centered on 20B Road between Linden and Maple Roads, just north of the Fulton County line (SR 110).

These comments have been prepared under the authority of the Endangered Species Act of 1973, and are consistent with the intent of the National Environmental Policy Act of 1969.

As expressed in our comments in previous years, the U.S. Fish and Wildlife Service has concerns about the impact of Btk on non-target species, such as butterflies, and on food availability for endangered bats and migratory birds.

Endangered Butterflies

Spraying with Btk is of concern for 2 federally endangered species of Lepidoptera in Indiana, the Karner blue butterfly (*Lycaeides melissa samueulis*) and Mitchell's satyr butterfly (*Neonympha mitchelii*). The occurrences and ranges of these species have not changed since our previous reviews of the gypsy moth program. Neither of these species occur within the 2 locations where Btk treatments are proposed. Treatment with Disrupt II pheromone flakes is considered to be highly specific for gypsy moths and is not known to have adverse impacts on the federally listed butterflies.

Image 2: Continuation of U.S. Fish & Wildlife Service response letter for environmental review of the 2020 proposed gypsy moth treatment sites. Letter continues on Images 3 and 4 below.

As reported in the December 31, 2014 Federal Register (78775-78778), the U.S. Fish and Wildlife Service has initiated a status review of the monarch butterfly (*Danaus plexippus plexippus*) for possible listing under the Endangered Species Act; no decision has been made at this time. This species has generally been wide-spread, including throughout Indiana, until recent years and is likely to be present in varying numbers in all of the proposed gypsy moth treatment areas, but most particularly in the more agricultural sites where its larval food consisting of milkweed species (*Asclepias* spp.) are most likely to be found. Gypsy moth-specific mating disruption would not impact this species, but Btk treatment could affect feeding larvae if they are present during the spray period. We understand that specific spraying dates, which will occur twice, with the first occurring in mid to late May and the second approximately 4 to 7 days later, are dependent upon observation of gypsy moth larval instar stages and weather conditions; the first application could be earlier if warm spring weather causes an earlier gypsy moth egg hatch. Therefore, it appears unlikely that monarch butterfly larvae would be present during the spray periods.

Other Endangered Species

The proposed treatment sites are within the range of the federally endangered Indiana bat (*Myotis sodalis*) (entire state), clubshell mussel (*Pleurobema clava*) (Marshall County), rayed bean mussel (*Villosa fabalis*) (Marshall County), sheepnose mussel (*Plethobasus cyphyus*) (Marshall County), and snuffbox mussel (*Epioblasma triquetra*) (Huntington County), and the threatened northern long-eared bat (*Myotis septentrionalis*) (entire state), rufa red knot (*Calidris canutus rufa*) (entire state), and the eastern massasauga rattlesnake (*Sistrurus catenatus*) (Marshall and Porter counties).

Indiana bats hibernate in caves during the winter and then disperse to reproduce and forage during spring and summer in relatively undisturbed forested areas associated with water resources. Young are raised in nursery colony roosts in trees, typically near drainageways in undeveloped areas. Prior to hibernation Indiana bats feed intensively around forest near hibernacula to build up adequate fat reserves to survive hibernation.

The diet of Indiana bats consists entirely of insects, and based on previous studies they appear to be somewhat opportunistic feeders. Some studies have found lepidopterans as a major dietary component. It is possible that under some circumstances extensive elimination of lepidopterans over a large habitat area has the potential to adversely affect the food base of an Indiana bat nursery colony. This species has been found within the all of the treatment counties, including within the specific treatment sites in Marshall and Porter counties. No mist-net or acoustic studies for the Indiana bat have been conducted within the Huntington County treatment area, but suitable summer habitat is available.

During the summer, northern long-eared bats (NLEB) typically roost singly or in colonies in cavities, crevices, or hollows or underneath bark of both live and dead trees and/or snags (typically ≥3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices or presence of peeling bark. It has also been occasionally found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable).

Image 3: Final page of U.S. Fish & Wildlife Service response letter for environmental review of the 2020 proposed gypsy moth treatment sites. Enclosure 1 follows as Image 4 on next page.

They forage for insects in upland and lowland woodlots and tree lined corridors. During the winter, NLEBs predominately hibernate in caves and abandoned mine portals. This species is found in all the treatment counties; a portion of the Marshall County mating disruption site is within a 3-mile radius of an NLEB capture site (the USFWS assumes that a colony site may be anywhere within a 3-mile radius of an NLEB capture location).

The rufa red knot, eastern massasauga, and the mussels are not known within any of the proposed treatment sites.

The FWS concurs that the federally assisted 2020 gypsy moth program is not likely to adversely affect any of these federally listed species. This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. If project plans are changed significantly, please contact our office for further consultation.

Please note that Pehkokia Woods, a nature preserve owned and managed by ACRES Land Trust, Inc., is entirely within the Btk treatment area in Huntington County (Enclosure No. 1). We have no information on the lepidoptera species present within this woodland preserve, including whether or not any Indiana listed species are known. Please contact ACRES to discuss the proposed treatment and any concerns they may have (260-637-2273 or acres@acreslandtrust.org).

If you have any questions regarding this information, please contact Elizabeth McCloskey at the Northern Indiana Suboffice at (219) 983-9753.

Sincerely yours,

Elizabeth S. McCloskey Acting
for Scott E. Pruitt
Supervisor

Sent via email January 15, 2020; no hard copy to follow.

Image 4: Enclosure 1 to the U.S. Fish & Wildlife Service response letter for environmental review of the 2020 proposed gypsy moth treatment sites.

Image 5: Response Letter ndiana Department of Natural Resources Environmental Assessment of the 2020 proposed gypsy moth treatment sites. Continues on Image 6 below.

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

DNR #: ER-22113 **Request Received:** January 8, 2020

Requestor: Indiana Department of Natural Resources
Megan Abraham
Division of Entomology & Plant Pathology
402 West Washington Street, Room W290
Indianapolis, IN 46204

Project: 2020 Proposed Gypsy Moth Treatment Sites

County/Site info: Huntington - Marshall - Porter

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

Regulatory Assessment: Formal approval by the Department of Natural Resources under the regulatory programs administered by the Division of Water is not required for this project.

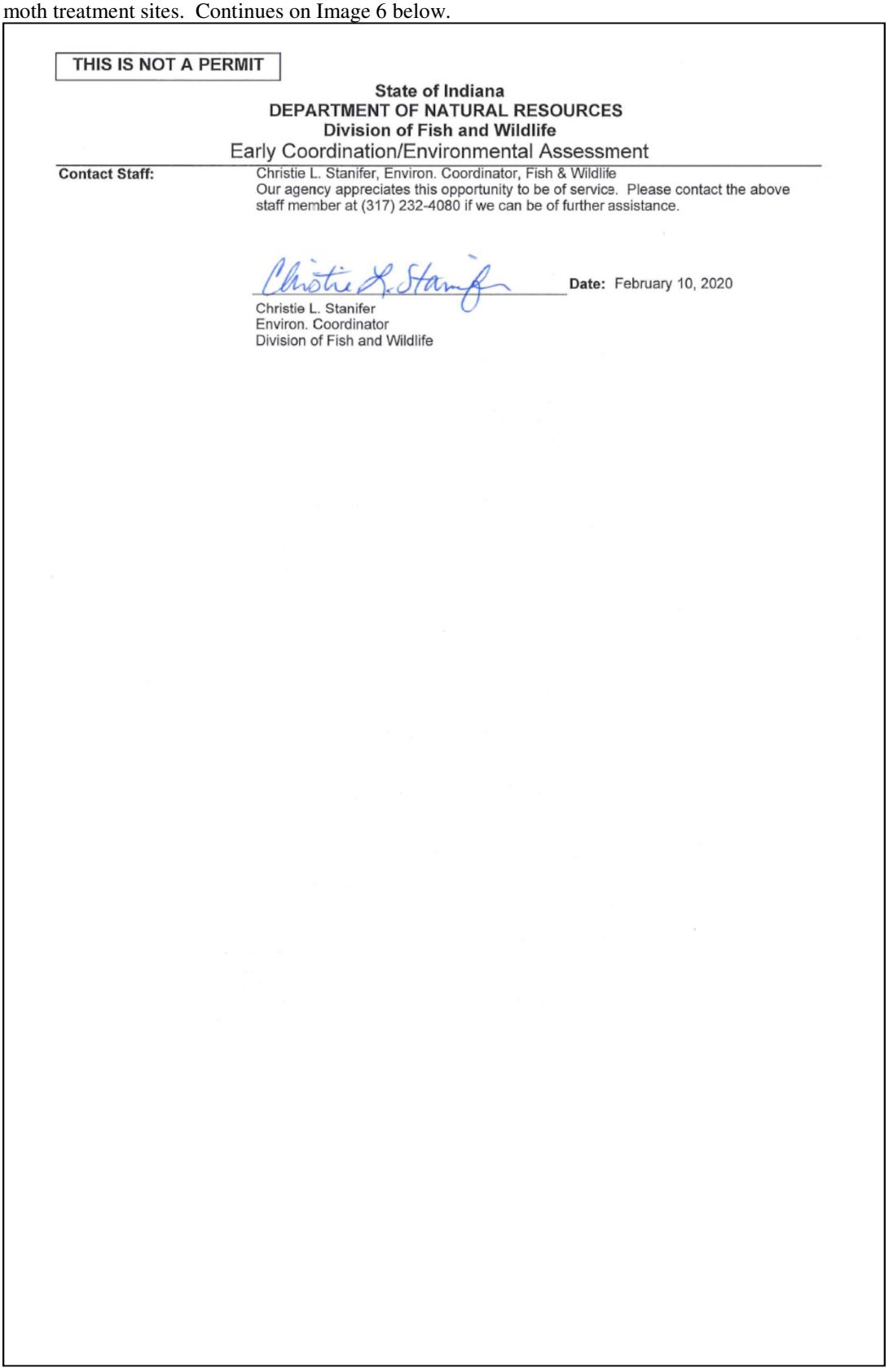
Natural Heritage Database: The Natural Heritage Program's data have been checked.
The species, nature preserve, and high quality natural communities below have been documented within 1/2 mile of the site locations, as indicated. The Division of Nature Preserves does not anticipate any impacts to the nature preserve, communities, or plant species as a result of this project.

I. Huntington MD 20 & Huntington BTK 20: American Badger (Taxidea taxus)
II. Green Twp MD 20: Hairy Valerian (Valeriana edulis var. ciliate), state endangered
III. Westville BTK 20:
A) Managed Land: DNR's Moraine Nature Preserve (just south of project)
B) Plant: Michaux's Stitchwort (Minuartia michauxii var. michauxii), state threatened (in Moraine NP)
C) Communities (all in Moraine NP):
1. Northwestern Morainal Dry-mesic Upland Forest
2. Northwestern Morainal Mesic Upland Forest
3. Pond

Fish & Wildlife Comments: Badgers are a wide ranging species that prefer an open, prairie-type habitat, with Indiana being at the eastern edge of their natural range. The range of the badger continues to expand as a result of land-use changes from forest to farmland and open pastureland. Impacts to the American badger or its preferred habitat are unlikely as a result of this project.

In all, the devastating effects of uncontrolled gypsy moth infestations are well documented. Effects on non-target species are possible and care should be taken near areas that could possibly possess endangered or threatened species, or special concern species. The effects on target species will depend on a variety of factors and are impossible to predict with certainty. However, controlling the spread of gypsy moths is important to reduce the negative effects the caterpillars have on trees, particularly oaks.

Image 6: Indiana Department of Natural Resources Environmental Assessment of the 2020 proposed gypsy moth treatment sites. Continues on Image 6 below.



THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

Contact Staff: Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.

Christie L. Stanifer **Date:** February 10, 2020
Environ. Coordinator
Division of Fish and Wildlife

Image 7: Response letter for Historic Preservation and Archaeology review of 2020 proposed gypsy moth treatment sites from Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology.

DNR Indiana Department of Natural Resources

Eric Holcomb, Governor
Cameron F. Clark, Director

Division of Historic Preservation & Archaeology·402 W. Washington Street, W274·Indianapolis, IN 46204-2739
Phone 317-232-1646·Fax 317-232-0693 dhpa@dnr.IN.gov

HISTORIC PRESERVATION AND ARCHAEOLOGY

February 5, 2020

Megan Abraham
State Entomologist
Indiana Department of Natural Resources
Division of Entomology and Plant Pathology
402 W. Washington Street, Room 290W
Indianapolis, Indiana 46204

State Agency: Indiana Department of Natural Resources

Re: Project information concerning the gypsy moth treatment sites for 2020 (DHPA No. 24883)

Dear Ms. Abraham:

Pursuant to Indiana Code 14-21-1 the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology ("DHPA") has conducted a review of the materials dated and received by the DHPA on January 8, 2020, for the above indicated project in Marshall, Huntington, and Porter Counties, Indiana.

Based on our analysis, we do not believe that any historic properties will be altered, demolished, or removed by the proposed project.

If you have any further questions regarding this determination, please contact the DHPA. Questions regarding our comments for this project should be directed to Chad Slider at (317) 234-5366 or cslider@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA No. 24883.

Very truly yours,

Chad W. Slider

Beth K. McCord
Director, Division of Historic Preservation & Archaeology

BKM:CWS:cws

emc: Angela Rust, Division of Entomology
Megan Abraham, Division of Entomology

The DNR mission: Protect, enhance, preserve and wisely use natural, cultural and recreational resources for the benefit of Indiana's citizens through professional leadership, management and education.

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