APPENDIX C. AGENCIES AND PERSONS CONSULTED

United States Department of the Interior
Fish and Wildlife Service

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

February 3, 2016

Mr. Philip T. Marshall
Indiana DNR, Division of
Entomology and Plant Pathology
402 West Washington Street, Room 290
Indianapolis, Indiana 46204

Dear Mr. Marshall:

This responds to your request for comments dated December 22, 2015, regarding the aerial use of *Bacillus thuringensis* (Btk) on 4,239 acres and mating disruption (pheromone flakes or SPLAT) on 24,428 acres to control gypsy moth at 8 sites in Fulton, Kosciusko, LaPorte, Marshall, Starke, St. Joseph and Whitley counties. 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.

It is our understanding that the decision concerning the use of either Btk or mating disruption is based upon the Slow the Spread Decision Support System 10-moth line, meaning an area where at least 10 male gypsy moths are caught in pheromone-baited traps, and the presence of at least 1 egg mass. Areas with less than 10 moths and no confirmed egg masses receive mating disruption treatment in an attempt to prevent male moths from finding and mating with female moths. Those sites with at least 10 moths and confirmed egg masses receive the Btk treatment in an attempt to directly kill the moth larvae as they feed. These treatments both take place along the front of the gypsy moth invasion, and areas with known severe outbreaks of the species, such as parts of Fort Wayne, do not receive treatment because neither method is considered effective on such large populations.

We further understand that the actual acreage sprayed will likely be less than the estimated/recommended 28,667 acres because of lack of funding. Additionally, we assume that the lakes and wetlands in some of the sites, such as Lakeville, Donaldson, and Atwood, and the large expanses of cropland in most of the sites except LaPorte East would not be sprayed because gypsy moths are not present in such habitats and the spraying would be wasted. If these assumptions are correct, this would reduce the exposure of non-target lepidopterans to the non-species-specific Btk treatments. 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. Mitchell's satyr butterfly does occur in LaPorte County but is not found within the LaPorte East treatment site. The Karner blue butterfly is not found in any of the counties where gypsy moth 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.

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. This species has generally been wide-spread, including throughout Indiana, until recent years and is likely to be present in varying numbers in all 8 of the proposed gypsy moth treatment areas, but most particularly in the more rural 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. 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*) (Fulton, Kosciusko, Marshall, and Starke counties), rayed bean mussel (*Villosa fabalis*) (Fulton, Kosciusko, Marshall, and Starke counties), and sheepnose mussel (*Plethobasus cyphyus*) (Fulton, Marshall, and Starke counties), the threatened northern long-eared bat (*Myotis septentrionalis*) (entire state), rufa red knot (*Calidris canutus rufa*) (entire state), northern copperbelly water snake (*Nerodia erythrogaster neglecta*) (Kosciusko and St. Joseph counties), and rabbitsfoot mussel (*Quadrula cylindrica cylindrica*) (Fulton County), and the proposed threatened eastern massasauga rattlesnake (*Sistrurus catenatus*) (Kosciusko, Marshall, and St. Joseph counties).

Indiana bats hibernate in caves during the winter and then disperse to reproduce and forage in relatively undisturbed forested areas associated with water resources during spring and summer. 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 in all of the treatment counties except Whitley but not within the specific treatment sites.

The northern long-eared bat (NLEB) is listed as threatened. At this time, no critical habitat has been proposed for the NLEB. During the summer, NLEBs typically roost singly or in colonies in cavities, underneath bark, crevices, or hollows 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). 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 most of the treatment counties but we do not have specific information about its presence or absence in the treatment sites.

The rufa red knot, northern copperbelly, and the mussels are not known within any of the proposed treatment sites. The eastern massassauga has been found at a number of sites in LaPorte and Marshall Counties, with a report from 1993 just outside of the Inwood treatment site. However, this and many of the other reports are quite old, with no more recent sightings listed.

The FWS concurs that the federally assisted 2016 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.

If you have any questions regarding this information, please contact Dan Sparks of the Bloomington Field Office at (812) 334-4261, extension 1219, or Elizabeth McCloskey at the Northern Indiana Suboffice at (219) 983-9753.

Sincerely yours,

Scott E. Pruitt
Supervisor

THIS IS NOT A PERMIT

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

DNR #: ER-18788 **Request Received:** December 21, 2015

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

Project: 2016 Proposed Gypsy Moth Treatment Sites

County/Site info: Kosciusko - LaPorte - St. Joseph - Whitley - Fulton - Marshall - Starke

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.
To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported within 1/2 mile of the Pierceton, Lakeville, or Atwood treatment sites.The species and managed land listed below have been documented within 1/2 mile of the other treatment sites, as indicated. The Division of Nature Preserves (DNP) does not anticipate any impacts to Menominee Wetland Conservation Area as a result of this project.

A) Argos 2016:
MAMMAL: American Badger (Taxidea taxus), state species of special concern
B) Lorane 2016:
BIRD: Henslow's Sparrow (Ammodramus henslowii), state endangered
C) LaPorte East 2016:
BIRD: Marsh Wren (Cistothorus palustris), state endangered
D) Inwood 2016:
REPTILE: Eastern Massasauga (Sistrurus catenatus catenatus), state endangered
E) Donaldson 2016:
1. FISH: Northern Brood Lamprey (Ichthyomyzon fossor), state endangered
2. MANAGED LAND: Menominee Wetland Conservation Area

Fish & Wildlife Comments: We do not forsee any impacts to the animal species listed above as a result of this project as long as the chemicals are not sprayed directly over the Yellow River.

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. At this time, no harm to state or federal listed species resulting from the proposed control measures is known or anticipated.

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.

Date: January 14, 2016

Christie L. Stanifer
Environ. Coordinator
Division of Fish and Wildlife

Michael R. Pence, Governor
Cameron F. Clark, Director

DNR Indiana Department of Natural Resources

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

January 5, 2016

Philip T. Marshall
Indiana Department of Natural Resources
Division of Entomology and Plant Pathology
402 W. Washington Street, Room 290W
Indianapolis, IN 46204

State Agency: Indiana Department of Natural Resources

Re: Project information concerning the gypsy moth treatment sites for 2016 (DHPA No. 18665)

Dear Mr. Marshall:

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 December 18 and 23, 2015, for the above indicated project in Kosciusko, La Porte, St. Joseph, Whitley, Fulton, Marshall, Starke 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 Kim Marie Padgett at (317) 234-6705 or kpadgett@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA No. 18665.

Very truly yours,

Mitchell K. Zoll
Director, Division of Historic Preservation & Archaeology

MKZ:KMP:kmp