

**FINAL**  
**ENVIRONMENTAL ASSESSMENT**

And

**FINDING OF NO SIGNIFICANT IMPACT**

COOPERATIVE GYPSY MOTH ERADICATION PROJECT  
CLARK COUNTY, WASHINGTON

April 17, 2015



Prepared by

Washington State Department of Agriculture  
Plant Protection Division

In cooperation with

United States Department of Agriculture  
Animal and Plant Health Inspection Service  
Plant Protection and Quarantine

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**TABLE OF CONTENTS**

I.0 PURPOSE AND NEED FOR ACTION..... 5

    1.1 Proposed Action..... 5

        1.1.1 Need for Action ..... 5

    1.2 Related Documents. .... 6

    1.3 Decisions to be Made ..... 7

    1.4 Authorizing Laws and/or Policies ..... 7

        1.4.1 State Authorizing Laws..... 7

        1.4.2 Federal Authorizing Laws..... 7

        1.4.3 Environmental Laws and Other Regulations ..... 8

2.0 TREATMENT ALTERNATIVES ..... 8

    2.1 Treatment Alternatives Considered ..... 8

        2.1.1 No action

        2.1.2 *Bacillus thuringiensis* var. *kurstaki* (Btk)..... 8

        2.1.3 Difubenzuron (Dimilin®)..... 8

        2.1.4 Gypsy Moth Virus (Gypcheck®)..... 8

        2.1.5 Mass trapping ..... 8

        2.1.6 Mating disruption ..... 8

        2.1.7 Sterile insect technology ..... 8

    2.2 Alternatives Considered and Eliminated ..... 9

    2.3 Preferred Treatment Alternative..... 9

3.0 AFFECTED ENVIRONMENT ..... 9

    3.1 Site Description..... 9

    3.2 Threatened, Endangered, and Sensitive Species..... 10

|  |    |
|--|----|
| 4.0 ENVIRONMENTAL CONSEQUENCES.....              | 11 |
| 4.1 No Action Alternative .....                  | 11 |
| 4.2 Preferred Treatment Alternative.....         | 12 |
| 4.2.1 Human Health and Safety .....              | 12 |
| 4.2.2 Non-Target Organisms.....                  | 14 |
| 5.0 LIST OF PREPARERS.....                       | 15 |
| 6.0. LIST OF AGENCIES AND PERSONS CONSULTED..... | 15 |
| 7.0 APPENDICES .....                             | 16 |
| A.    References                                 |    |
| B.    Treatment Site Maps                        |    |
| C.    Public Involvement and Issues              |    |
| D.    Monitoring                                 |    |
| E.    Product Label and Safety Data Sheet        |    |
| F.    Letters                                    |    |
| G.    Finding of No Significant Impact           |    |

## **1. PURPOSE AND NEED FOR ACTION**

### **1.1 Proposed Action**

The WSDA, in cooperation with USDA-APHIS and other appropriate Federal, State and local agencies, proposes to take action to eradicate an isolated infestation of European gypsy moth in Clark County, Washington. The action will be designed to give the project the best chance for achieving the goal of eradicating the gypsy moth infestation while minimizing risks to human health as well as minimizing detrimental environmental consequences. This action will be taken in order to prevent the establishment and spread of this pest insect and thereby avoid the adverse economic, social, and ecological effects associated with large-scale gypsy moth infestations. The proposed treatment area is in an area (approximately) 1 mile northeast of Yacolt.

16 adult male gypsy moths were caught in the Yacolt area during WSDA's summer trapping program in 2014. Follow-up inspections in the area of the catches revealed alternate gypsy moth life stages (1 egg mass, 1 spent egg mass and several pupal cases) indicating the existence of a reproducing population.

After evaluating treatment options available in the USDA 1995 FEIS and 2012 FSEIS, WSDA proposes three to five aerial applications of the insecticide Btk to 220.3 acres of vegetation at the core of the infestation. The Btk applications will target early instar larvae shortly after egg hatch in late April and early May.

#### **1.1.1 Need for Action**

Since its accidental release in the United States in 1869, the European strain of gypsy moth has spread throughout New England and areas to the north, south and west. It has become established in all or parts of 19 states, the District of Columbia, and parts of Canada. It continues to spread to uninfested areas. The gypsy moth has caused dramatic economic, social, and ecological impacts throughout the infested area (USDA, 2012, vol. II, chapter 1, p. 2-3).

Strategies described in the FEIS and FSEIS (see section 1.2 for explanation of FEIS and FSEIS) depend upon the infestation status of the area: generally infested, transition, or uninfested. The three strategies of suppression, eradication, and slow the spread -- or their absence -- are included in the six alternatives described in the FEIS. The sixth alternative is the preferred alternative presented in the FEIS. The sixth alternative is comprised of all three strategies.

Based on the infestation status of “no established population”, Washington State’s strategy in 2015 will be eradication.

Treatments available for eradication projects include: (the biological insecticides) *Bacillus thuringiensis* var. *kurstaki* (Btk) and the gypsy moth nucleopolyhedrosis virus (Gypchek); a chemical insecticide (diflubenzuron); and treatments employing mass trapping, mating disruption, and sterile insect release techniques. A detailed description of these treatment options and the decision making process can be found in Section 2 of this EA.

The European strain of the gypsy moth has been found every year in Washington State since 1974 with the exceptions of 1976 and 1977. The European gypsy moth is usually introduced to Washington State by people visiting or relocating from the infested area of eastern North America. For more than 30 years, WSDA has successfully detected new introductions of the European strain of gypsy moth and successfully eradicated all reproducing populations.

## **1.2 Related Documents**

In 1995, the USDA Forest Service and APHIS issued a final environmental impact statement, "Gypsy Moth Management in the United States: a cooperative approach", (hereinafter referred to as FEIS), which describes and analyzes methods of gypsy moth control available for use in USDA cooperative programs. In 2012 the USDA Forest Service and APHIS issued a supplement to the 1995 FEIS (hereinafter referred to as FSEIS)

This Environmental Assessment (EA) is tiered to the FEIS and the FSEIS in accordance with the Council on Environmental Quality regulations for implementing the National Environmental Policy Act of 1969 (NEPA) (40 CFR 1502.20 and 40 CFR 1508.28). This EA provides the basic background information necessary for the site-specific analysis of the potential environmental effects of WSDA's proposed 2015 Cooperative Gypsy Moth Eradication Project. The FEIS, FSEIS, and this site-specific EA jointly constitute the environmental analysis and documentation required under NEPA.

Copies of the FEIS, FSEIS, and the EA are available for review at:

Washington State Library  
6880 Capitol Blvd. S  
Tumwater, WA 98501

and

USDA, APHIS, PPQ  
APHIS Library, 1st floor  
4700 River Road  
Riverdale, MD 20737

and

USDA-APHIS-PPQ  
33400 9<sup>th</sup> Ave. S., Suite 200  
Federal Way, WA 98003

Additional environmental analysis and documentation has been prepared to satisfy Washington State requirements under Chapter 43.21 (c) of the Revised Code of Washington (State Environmental Policy Act or SEPA), and Chapter 197-11 of the Washington Administrative Code (SEPA rules).

Copies of the SEPA documentation are available for review at:

Washington State Library  
6880 Capitol Blvd. S  
Tumwater, WA 98501

and

Washington State Department of Agriculture  
[www.agr.wa.gov](http://www.agr.wa.gov)

### **1.3 Decisions to be Made**

There are three significant decisions which must be made as a part of evaluating a gypsy moth control action.

The first decision to be made is whether to propose a gypsy moth control project (the absence of a control project is a no-action alternative). The second decision to be made is whether or not tiering this environmental assessment to the USDA 2012 FSEIS is appropriate. The third decision to be made is what tools are being proposed for the project area.

### **1.4 Authorizing Laws and/or Policies**

#### **1.4.1 State Authorizing Laws**

WSDA has authority under Chapter 17.24 of the Revised Code of Washington, Insect Pests and Plant Diseases, to eradicate or control insect pests that may endanger the agricultural and horticultural industries in the state of Washington.

#### **1.4.2 Federal Authorizing Laws**

The USDA is responsible for management activities related to the gypsy moth for the Federal government. Two USDA agencies, the Forest Service and APHIS share this responsibility. Agency authorities are found in 7 CFR 2.8(a)(36) and 7 CFR 2.6(a)(38).

### **1.4.3 Environmental Laws and Other Regulations**

Many environmental laws, authorities and Executive Orders of the President influence how actions to manage pests, including the gypsy moth, are implemented at the site-specific level. Such laws include the National Environmental Policy Act; the Washington State Environmental Policy Act; the Federal Insecticide, Fungicide, and Rodenticide Act; the Clean Water Act and the Endangered Species Act.

## **2.0 TREATMENT ALTERNATIVES**

### **2.1 Treatment Alternatives Considered**

WSDA is proposing to conduct an Integrated Pest Management (IPM) program to eradicate gypsy moth in Washington State. Evidence of an isolated reproducing population of European gypsy moth in Washington State is a “trigger” to evaluate eradication options. Integrated Pest Management involves selecting those options and techniques that give the best chance of meeting the project goal of eradication. The FSEIS contains a range of alternatives from which WSDA has selected an IPM strategy. The treatment alternatives detailed in the FEIS and FSEIS include:

#### **2.1.1 No action**

**2.1.2 *Bacillus thuringiensis var. kurstaki* (Btk).** This is a biological insecticide containing the bacterium Btk. The insecticide is effective primarily against caterpillars of many species of moths and butterflies.

**2.1.3 Diflubenzuron (Dimilin®).** This is an insect growth regulator that interferes with the growth of some immature insects.

**2.1.4 Gypsy moth virus (Gypcheck®).** This is a nucleopolyhedrosis virus which occurs naturally and is specific to gypsy moth. Gypcheck is an insecticide product made from the gypsy moth nucleopolyhedrosis virus.

**2.1.5 Mass trapping.** This treatment consists of large numbers of pheromone traps used to attract the male gypsy moth and prevent them from mating with females, thereby causing a population reduction. The density of traps in this treatment option is nine or more traps per acre.

**2.1.6 Mating disruption.** This treatment consists of applying tiny plastic flakes or beads containing disparlure, a synthetic gypsy moth sex pheromone. The

pheromone confuses male moths and, thus, prevents them from locating and mating with females.

**2.1.7 Sterile insect technology.** This treatment consists of an aerial release of a large number of sterile male gypsy moths. This reduces the chance that female moths will mate with fertile males. The result is progressively fewer and fewer fertile egg masses being produced, and eventual elimination of the population.

## **2.2 Alternatives Considered and Eliminated**

The following treatment options were considered and not selected due to environmental or efficacy concerns. The no action alternative was dismissed in this case due to the high number of adult gypsy moths trapped in a single location, and the discovery of alternate life stages (egg masses and pupal cases) in the area. Diflubenzuron is an insect growth regulator that has adverse impacts on a broader range of non-target species than Btk. While Btk primarily impacts moths and butterflies, diflubenzuron can kill many other insects in addition to moths and butterfly caterpillars. Its use may adversely affect other insect populations and, therefore, it was not selected. Gypsy moth virus (Gypcheck) is very host-specific but is not widely available in the market; it is still somewhat experimental for eradication programs and, therefore, was not selected. Mass trapping has been used with some success to eradicate isolated populations, but at other times has failed. It is best employed following larval pesticide treatments in small, isolated low-level populations. Sterile insect releases have been approved but have rarely, if ever, been used in eradication efforts.

## **2.3 Preferred Treatment Alternative**

The WSDA/USDA-APHIS gypsy moth eradication strategy proposed for 2015 is aerial application of the biological insecticide Btk (treatment alternative 2.1.2). This strategy will give the project the best chance to achieve the goal of eradicating the gypsy moth infestation while minimizing risks to human health and minimizing detrimental environmental consequences.

## **3.0 AFFECTED ENVIRONMENT**

### **3.1 SITE DESCRIPTION** (see Appendix B for maps)

(Yacolt, WA 7.5 minute quadrangle, S25, 26 T5N R3E)

- Clark County, Washington
- 220 acres

- Zoning:

Current Zone Classification: Forest tier II-40 (FR-40), Forest tier I-80 (FR-80)  
Current Comprehensive zoning plan: FR-20, FR-40, FR-80

- Proposed Area:

The proposed 220 acre site is in rural Clark County, and consists of single family homes and forest land.

- Vegetation:

The site is a mix of conifer and deciduous trees and shrubs. Canopy coverage is 80-85%. Tree height is variable, with deciduous trees in excess of 150 feet.

- Critical/Sensitive Areas:

Cedar Creek runs through the proposed treatment site. There are three small ponds and two unnamed perennial streams in the proposed treatment area as well. Both streams run into Cedar Creek. WSDA will be working under NPDES permit #WA0039047 issued by the Department of Ecology to the WSDA for the purpose of invasive moth control. The permit, titled "Invasive Moth Control National Pollutant Discharge Elimination System Waste Discharge Permit", authorizes discharge of insecticides into surface waters of the state of Washington that are consistent with the terms and conditions of this permit for the purpose of invasive moth control.

There are two areas with steep slopes (+40%) in the proposed area. (See topography map in Appendix B).

- Catch History:

16 European Gypsy Moths were caught in the area during the 2014 summer trapping program.

- Alternate Life Stages:

1 egg mass was found in the area during the fall of 2014.  
1 spent egg mass was found in the area during the fall of 2014.  
Several pupal cases were found in the area during the fall of 2014.

### **3.2 Threatened, Endangered, and Sensitive Species**

As required by Section 7 of the Endangered Species Act of 1973, the USDA has conferred with both the United States Fish and Wildlife Service (USFWS) and the National Marine

Fisheries Service (NMFS). 9 threatened or endangered species occur in Clark County. Threatened species: Oregon Spotted frog, Streak Horned lark, Yellow-Billed Cuckoo, Bull Trout, Golden Paintbrush, and Water howellia. Endangered species: Columbian White-Tailed deer, Gray wolf, and Bradshaw's desert-parsley. No critical habitats lie within the proposed treatment area. USDA-APHIS has determined that the proposed eradication project will have no effect on any listed, designated, proposed, or candidate species or their critical habitat.

In addition, the WSDA has consulted with the Washington State Department of Fish and Wildlife (WDFW) and the Washington State Department of Natural Resources (DNR). These agencies provided maps or other data intended to aide in the identification of habitats of concern and the presence of listed, proposed, candidate, threatened or endangered species. The information provided by WDFW Priority Habitats and Species Program identified Northern Spotted Owl management areas approximately 1-mile east of the proposed treatment area. Cedar Creek, two perennial streams and three ponds exist within the proposed site. WDFW lists the presence of priority anadromous fish including Coho salmon, fall chinook, spring chinook, chinook, winter steelhead, steelhead, rainbow trout, cutthroat, and residential coastal cutthroat. None of the priority anadromous fish are listed as proposed, candidate, threatened or endangered species.

The information provided by WDFW from their lepidopteran database found no butterfly species of concern in the immediate area. Any species of concern are >6 miles SW of the proposed site.

A review of the DNR Washington Natural Heritage Program database found no records for rare plants or high quality native ecosystems in the vicinity of the proposed site.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

### **4.1 No Action Alternative**

The gypsy moth is able to survive and reproduce in Washington State, as evidenced by numerous past isolated infestations. The current infestation, if left unchecked, could spread across a large area. The ecological and human health risk assessment for gypsy moth, should it become established, is detailed in the 2012 USDA FSEIS, vol. IV, appendix L (USDA Forest Service 2004).

Trees in forests and orchards, and residential and municipal shade trees and landscape plantings would be damaged and killed. Recreational and aesthetic values associated with trees and forested land would be diminished. Species composition of the vegetation on forested land could change, affecting the quantity and variety of food available for wildlife.

Water quality could be adversely affected in a number of ways including: 1) increased siltation from rapid runoff of rainfall from defoliated areas; 2) increases in water temperature

as it flows through areas made shadeless; and 3) nutrient overloading from the deposition of large quantities of caterpillar droppings.

The pesticide load in the environment would likely increase in quantity, variety, and net detrimental environmental impact as home and business owners respond to ever-increasing numbers of gypsy moth caterpillars, the damage they cause, and the nuisance they represent.

Human health effects associated with the presence of large numbers of gypsy moth caterpillars have been reported, including rashes and welts typical of allergic reactions, and respiratory complaints. These effects have been attributed to the irritating nature of the bristles found on the caterpillars. In some instances the reactions have been severe enough to require medical attention (Allen et al., 1991), (Tuthill, et al., 1984), (Aber, et al., 1982), (Beaucher and Farnham, 1982), (Shama, et al., 1982).

Agricultural, horticultural and forestry enterprises are dependent upon markets beyond the borders of Washington State. Washington must be able to comply with the plant pest and disease regulations of the Federal government, other states, and international markets. The establishment and spread of the gypsy moth in Washington State would result in the imposition of quarantines. The levels of production and value of plant products would be adversely affected.

## **4.2 Preferred Treatment Alternative**

### **4.2.1 Human Health and Safety**

#### *a. Bacillus thuringiensis var. kurstaki (Btk)*

The use of Btk for the eradication of isolated gypsy moth infestations is expected to have no adverse impact on human health or the environment. Various strains of *Bacillus thuringiensis* (B.t.) are a naturally occurring bacterial component of soils worldwide. Modern aqueous formulations of Btk used in gypsy moth control projects contain no organic solvents and have an excellent safety record associated with their use in gypsy moth suppression and eradication projects. An exemption from the requirement of a tolerance has been established for residues of Btk in, or on, all raw agricultural commodities. This exemption stipulates that manufacturers of Btk test each lot for pathogenicity and vertebrate toxicity. See Appendix E for Sample Label and SDS.

A detailed discussion of the human health effects of Btk may be found in the 2004 USDA Forest Service Btk risk assessment (USDA, 2004).

Due to advances in scientific knowledge, the law requires that pesticides which were first registered before November 1, 1984 be reregistered to ensure that they meet today's more stringent standards. In March of 1998 the United States Environmental Protection Agency came out with a Reregistration Eligibility Decision (EPA, 1998) in which they concluded:

Based on the reviews of the generic data for the active ingredient *Bacillus thuringiensis*, the Agency has sufficient information on the health effects of *Bacillus thuringiensis* and on its potential for causing adverse effects in fish and wildlife and the environment. The Agency has determined that *Bacillus thuringiensis* products, manufactured, labeled and used as specified in this Reregistration Eligibility Decision, will not pose unreasonable risks or adverse effects to humans or the environment. Therefore, the Agency concludes that products containing *Bacillus thuringiensis* for all uses are eligible for reregistration (EPA, 1998).

In the spring of 1999, Foray 48B was applied by aircraft to 52 square miles of Southern Vancouver Island to combat an infestation of European gypsy moth. Approximately 80,000 residents lived in the spray zones. The Capital Health Region coordinated a human health study of possible short-term health effects. The resulting report (Capital Health Region, 1999) concluded:

The results of this project did not show a relationship between aerial spraying of Foray 48B and short-term human health effects. Although some people self-reported health problems that they attributed to the spray program, the research and surveillance methods used in this project did not detect any change in health status that could be linked to the spray program. Our results showed that many of the health complaints people reported during the spray were as common in people before the spray as they were shortly after the spray. This conclusion is consistent with those of previous studies of the possible health effects of Btk- based pesticide spray programs.

Exposure to Btk spray resulting from its use as proposed in this gypsy moth eradication project is unlikely to cause significant human health effects. However, it is good practice to minimize exposure to any insecticide. One of the conclusions reached in the Oregon study by Green, et al. (1990), was that, "the level of risk for Btk and other existing or future microbial pesticides in immunocompromised hosts deserves further study."

#### b. General Precautions

The WSDA will take the following additional steps to assist the public in avoiding or reducing exposure to the spray material:

1. The Pesticide Sensitive Individuals database, maintained by the Pesticide Management Division of the WSDA, will be checked for people living in or near the proposed treatment area who require advance notification.
2. The WSDA will offer a toll-free telephone line with information regarding scheduled treatment days.
3. The WSDA will provide notification calls the day before scheduled applications to any resident in the proposed treatment area requesting them.

4. During treatments WSDA on-site spray monitors will notify bicyclists, joggers and other pedestrians that they are approaching the treatment area.
5. Information will be provided to residents of the treatment area about how to avoid or reduce exposure to the spray material.

#### **4.2.2 Non-Target Organisms**

##### **1. *Bacillus thuringiensis* var. *kurstaki* (Btk)**

###### **a. Animals**

A detailed discussion of the ecological effects of Btk on non-target organisms may be found in the 1995 FSEIS vol. II, chapter 4, pp. 52-55, and in vol. IV, chapter 5, pp. 5-10.

As used in gypsy moth eradication projects, Btk has not been shown to adversely affect fish, birds, mammals, or most non-target insects, including honey bees (USDA, 1995, vol. II, chapter 4, pp. 54-55). It is expected that Btk may kill other lepidopteran larvae (leaf-eating caterpillars) if they are present in project areas when treatments occur. In turn, animals dependent on caterpillars as food theoretically may be affected. However, reductions in native caterpillar populations are expected to be temporary due to the brief residual effectiveness of Btk deposits on foliage (4 to 10 days), the high reproductive capacity of most lepidoptera, and recolonization from adjacent untreated areas (USDA, 1995, vol. II, chapter 4, pp. 54-55). The small size of the proposed treatment area should aid in the recolonization process.

A study conducted in Oregon in connection with gypsy moth control programs in 1986 and 1987 found reduced numbers of caterpillars immediately following Btk treatments and reduced species diversity. This study also found that recovery in numbers of non-target caterpillars began the same season, but that recovery of species diversity lagged behind (Miller, 1990).

Two studies examined the indirect effect of Btk on the reproductive success of insectivorous birds through a possible reduction in food supply. The studies reported no significant differences between treated and untreated areas in numbers of eggs hatched or in nestling growth and development. When caterpillars weren't available, the birds switched to other available prey (Gaddis, 1987), (Gaddis and Corkran, 1986).

There is no evidence of significant adverse impacts of Btk on aquatic organisms. In a study conducted on a benthic stream community there was no evidence that addition of Btk to stream mesocosms created adverse effects for these communities even at greater than 100 times expected exposure rates (Richardson and Perrin, 1994).

## b. Plants

Btk is non-toxic to plants. Btk is sensitive to meteorological effects once it has been applied to plant surfaces. Btk is readily removed from plant surfaces by rain and is rapidly degraded by sunlight (USDA, 1995, vol. IV, chapter 7, pp. 15).

Changes in soil productivity and fertility due to Btk are not likely. Btk persists for a relatively short time, B.t. is known to occur naturally in soils worldwide, and applications of insecticides containing B.t. do not appear to increase levels of B.t. in soil (USDA, 1995, vol. I, p. 19). For more information about the fate of Btk in the soil refer to 1995 FEIS, vol. 4, chapter 7, p. 16.

## c. Threatened, Endangered, and Sensitive Species

In reference to the species listed in the Affected Environment section of this EA, all occur outside of the proposed treatment site. Therefore, it is not anticipated that the proposed use of Btk would adversely affect these named species.

## **5.0 LIST OF PREPARERS**

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## **6.0 LIST OF AGENCIES AND PERSONS CONSULTED/NOTIFIED**

USDA-APHIS Environmental Services; Riverdale, MD

National Marine Fisheries Service for review of the proposed treatment area for the presence of sensitive species or habitats

US Fish and Wildlife Service, for review of the proposed treatment area for the presence of sensitive species or habitats

Washington State Department of Health, Barbara Morrissey, for review of the proposed treatment with regard to human health concerns

Clark County Public Health Department, for review of the proposed treatment with regard to human health concerns

Washington State Department of Natural Resources, Natural Heritage Program, for review of the proposed treatment area for the presence of sensitive species or habitats

Washington State Department of Fish and Wildlife, Priority Habitats and Species (PHS) database, for review of the proposed treatment area for the presence of sensitive species or habitats

Washington State Department of Fish and Wildlife, Ms. Ann Potter, for review of the proposed treatment area for the presence of sensitive lepidopteran species

Washington Department of Ecology for NPDES and SEPA review

City of Yacolt

## **7.0 APPENDICES**

- A. References
- B. Treatment Site Maps
- C. Public Involvement and Issues
- D. Monitoring
- E. Product Label & Safety Data Sheet
- F. Letters
- G. Finding of No Significant Impact

## APPENDIX A

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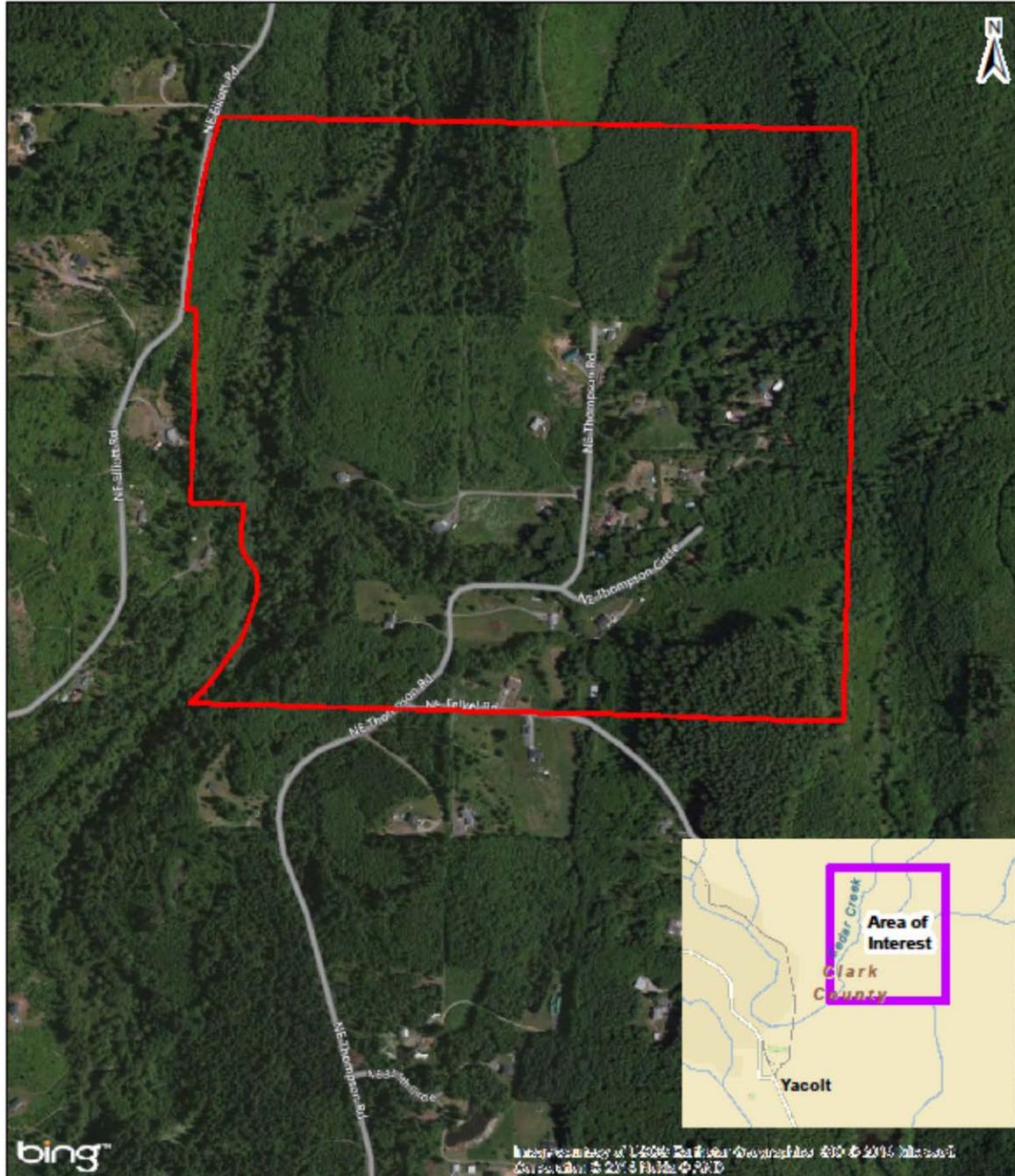
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**APPENDIX B**

**TREATMENT SITE MAPS**

# Yacolt Proposed Gypsy Moth Treatment, 2015



 Proposed Eradication Boundary

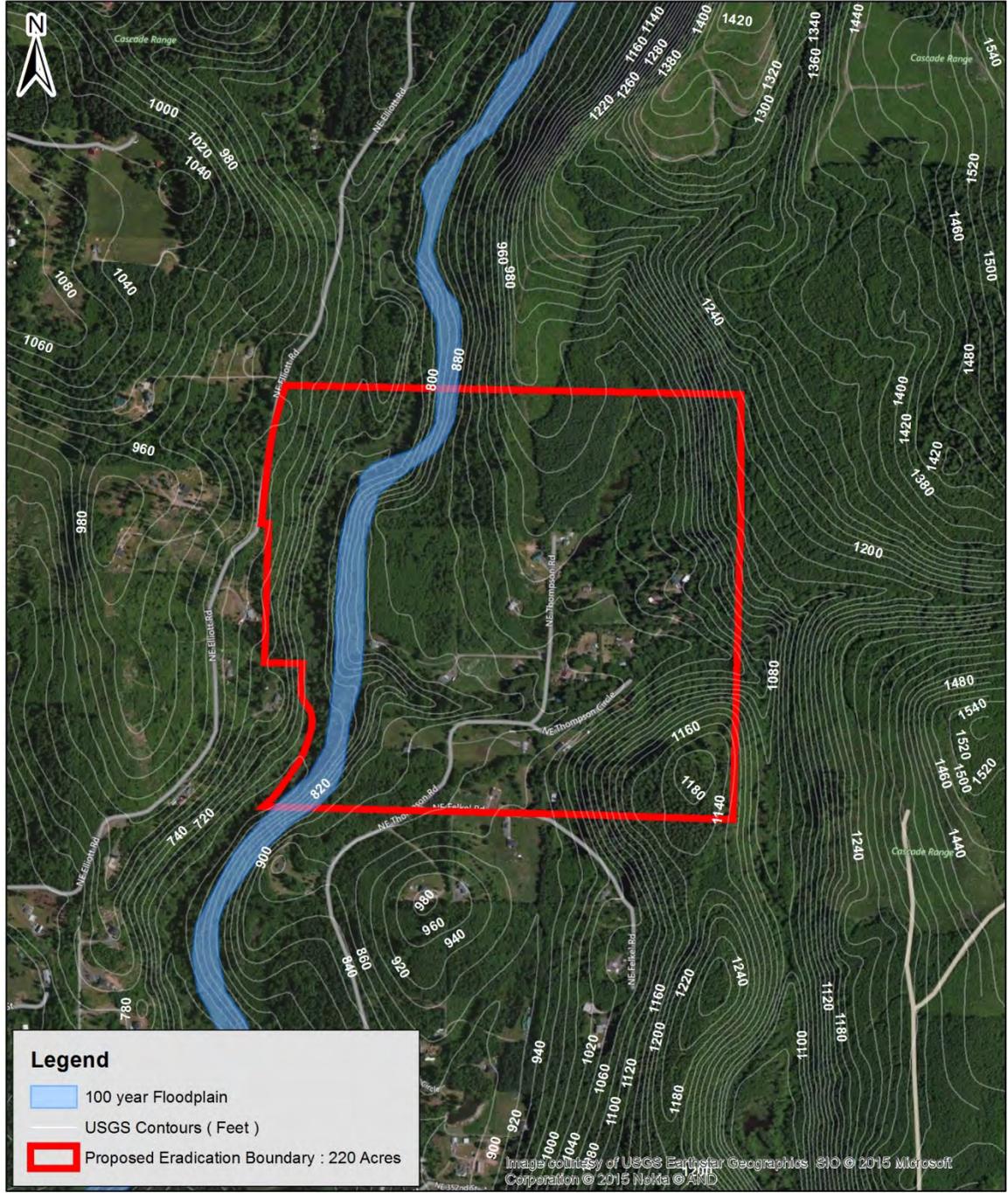
0 0.1 0.2 0.4 Mi

**Approx. 220 Acres**

Cartography by: Landon Udo ; 12/15/2014



# Yacolt Proposed Gypsy Moth Eradication, Topographic Map 2015



This data is provided on an 'AS IS', 'AS AVAILABLE' and 'WITH ALL FAULTS' basis. The content of this map and data are from many sources and are NOT warranted to be complete, accurate or current. All critical information should be independently verified. WSDA and its officials and employees assume no responsibility or legal liability for the accuracy, completeness, reliability, timeliness, or usefulness of any of the information.

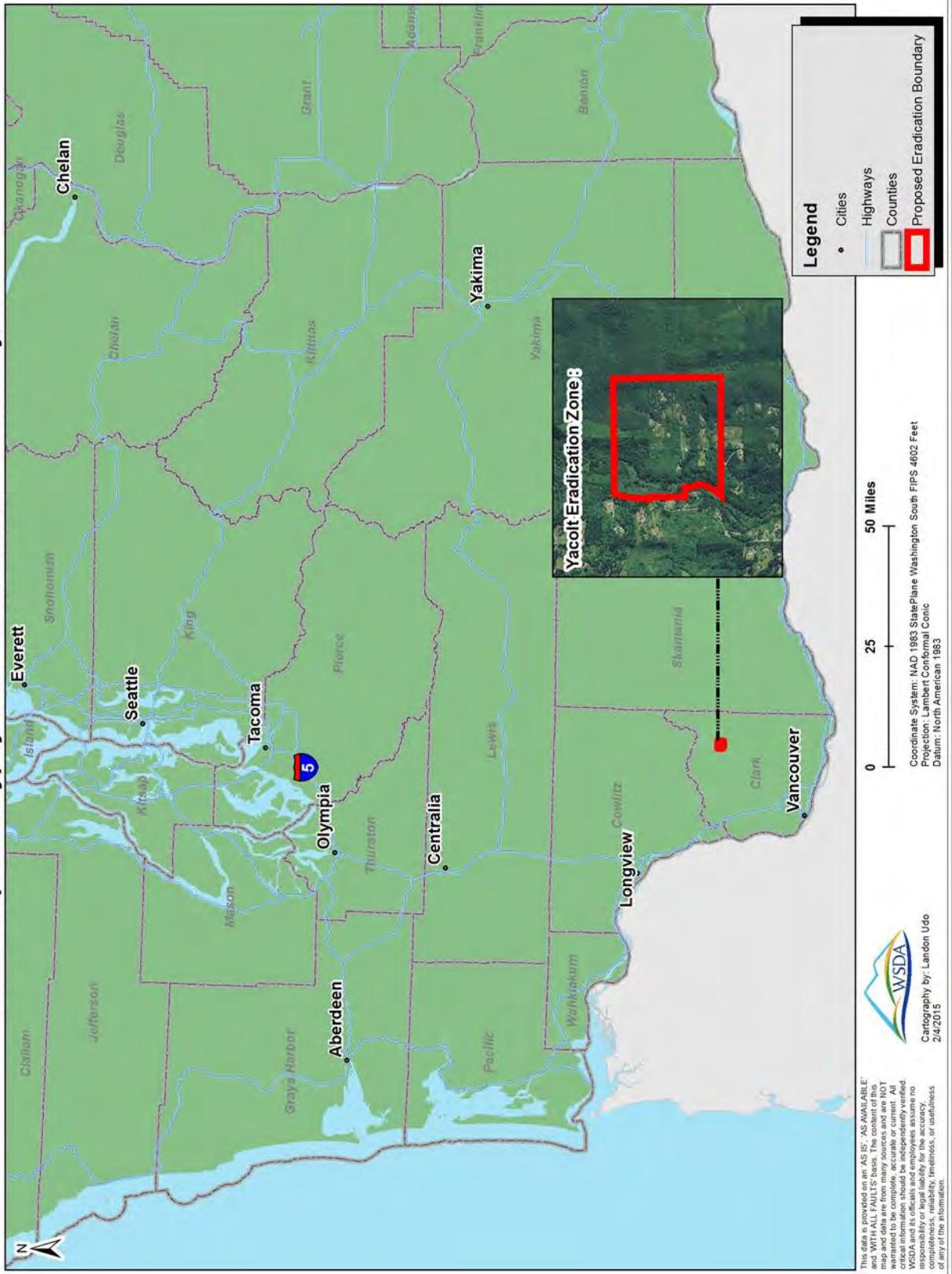
Cartography by: Landon Udo ; 2/4/2015

0 0.125 0.25 0.5 Miles

Coordinate System: NAD 1983 StatePlane Washington South FIPS 4602 Feet  
 Projection: Lambert Conformal Conic  
 Datum: North American 1983



# Yacolt Proposed Gypsy Moth Eradication Zone Vicinity, 2015



## APPENDIX C

### PUBLIC INVOLVEMENT and ISSUES

#### A. Public Notification and Involvement

-Initial door-to-door contacts in what would become the proposed treatment zone are made in the fall of 2014. Contacts are made in conjunction with inspecting the area and searching for gypsy moth egg masses.

-Elected officials are emailed a notification letter regarding the proposed gypsy moth eradication, gypsy moth fact sheet, and map of the proposed gypsy moth eradication area. Elected officials included Senator Ann Rivers, Representatives Liz Pike and Brandon Vick, Clark County Commissioners, and the Mayor, and town council members of Yacolt. **(December 15, 2014)**

-WSDA employees hand deliver packets containing a notification letter regarding the proposed gypsy moth eradication, gypsy moth fact sheet, and map of proposed gypsy moth eradication area. All residence in the affected area received a packet. Landowners living outside of the affected area are mailed a packet. **(December 17, 2014)**

-WSDA issues a press release about the proposed gypsy moth eradication in the spring of 2015. **(December 22, 2014)**

-Clark County Public Health puts information on their website about Btk and human health. **(January, 2015)**

-The Columbian Newspaper runs a story about the proposed gypsy moth eradication in their paper and on their website. **(January 21, 2015)**

-WSDA issues a press release about the upcoming open house and proposed gypsy moth eradication. **(February 6, 2015)**

-Elected officials are emailed an invitation to the upcoming open house. **(February 9, 2015)**

-The Reflector Newspaper runs a story about the proposed gypsy moth eradication and upcoming open house. **(February 10, 2015)**

-Invitations to the open house are hand delivered to residence of the affected area. **(February 11, 2015)**

-WSDA holds an open house at Yacolt Primary School. Information was provided about gypsy moth trapping, proposed eradication activities, and health effects. A 15-minute

informational video about the gypsy moth was also show. WSDA entomologists and pest biologists, along with a USDA-APHIS entomologist, were on hand to answer any questions/concerns attendees had. **(February 17, 2015)**

-The Reflector Newspaper runs a story about the newly released draft Environmental Assessment. **(March 25, 2015)**

-30 day comment period on the draft Environmental Assessment ends. No comments were received on the document. **(April 9, 2015)**

## **B. Issues and Concerns**

Questions attendees asked at the open house:

**Q:** *“When will the treatments be administered?”* **A:** Aerial treatments will take place between late April-late June.

**Q:** *“What kind of damage does the gypsy moth do?”* **A:** The gypsy moth causes extensive defoliation. The person was then shown photos of damaged vegetation and encouraged to watch the 15-minute video.

**Q:** *“Will you spray if it's raining?”* **A:** No. If steady rain is falling or forecast, we will postpone the treatment and wait for more favorable weather.

**Q:** *“Will Btk affect my animals?”* **A:** No. Btk is specific to lepidopteran (leaf-eating caterpillars). Animals can be kept indoors for at least 30-minutes after treatments are done.

**Q:** *“Will Btk affect my asthma?”* **A:** Studies have shown Btk has no effects on asthma. The individual was added to the call list (notify the day before treatments), and told to stay inside for at least 30-minutes after treatments are done.

**Q:** *“How do gypsy moths get here?”* **A:** Gypsy moth egg masses usually “hitchhike” from infested states. They are often found on R.V. wheel wells, outdoor furniture, and birdhouses.

## **APPENDIX D**

### **MONITORING**

A WSDA or USDA representative (monitor) will be present during loading and application of the insecticide. The monitor will insure compliance of all federal, state and local laws/regulations.

The treatment site will be intensively monitored in the summers of 2015, 2016, and 2017 using pheromone-baited traps to determine the effectiveness of the treatment, assist in the eradication and delimit any residual populations of gypsy moths. The results of this monitoring will dictate the need for any future action.

# APPENDIX E

## PRODUCT LABEL and SAFETY DATA SHEET

**Flowable Concentrate**

**Foray 48B**

**Biological Insecticide**

**For Commercial Forestry and Wide-Area Pest Treatment – Aerial Application Only**

Lit No. 60181-04



|   |         |
|---|---------|
| Active Ingredient:<br>Bacillus thuringiensis subsp. kurstaki, Strain ABTS-351,<br>fermentation solids, spores and insecticidal toxins | 12.65%  |
| Other Ingredients   | 87.35%  |
| Total   | 100.00% |

Potency: 10,600 Cabbage Looper Units (CLU) per mg of product  
(equivalent to 48 billion CLU per gallon).

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

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

| FIRST AID   |   |
|---|---|
| <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 or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-315-9819 (24 hours) for emergency medical treatment and/or transport emergency information. For all other information, call 1-800-323-9597. |   |

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

**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.

**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 sensitization.

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 spill or equipment breakdown.

**Non-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 sensitization.

**USER SAFETY RECOMMENDATIONS**

- Users should:
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
  - Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

**Environmental Hazards**

Except under the forest canopy, 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.

**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.

**AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions For Use section for information about this standard.

Refer to the Directions For Use (below) for further directions.

**STORAGE AND DISPOSAL**

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

**Pesticide Storage:** Store in a cool, dry place. Keep containers tightly closed when not in use. Store in temperatures above freezing and below 32 degrees C (90 degrees F).

**Pesticide Disposal:** To avoid wastes, use all material in this container by application according to label directions. If wastes can not 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 the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

**Refillable Container:** Refill this container with pesticide only. Do not use this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**Warranty and Disclaimer**

To the extent permitted by 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 risks of use, storage or handling not in strict accordance with accompanying directions.

**DIRECTIONS FOR USE BOOKLET**

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.

Apply this product only through aerial application.

**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 (that involves contact with anything that has been treated, such as plants, soil, or water) is:

- Coveralls
- Waterproof gloves
- Shoes plus socks

**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.

**APPLICATION**

Apply Foray 48B, undiluted or with quantities of water sufficient to provide thorough coverage of plant parts to be protected, only by aerial equipment. 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.

#### HANDLING & MIXING

If Foray 48B is applied undiluted, the operator must ensure that the bulk quantity is well agitated and homogeneous.

When Foray 48B is shipped by bulk tankers and transferred via a closed-loop mixing/loading system, the material is measured by passing through in-line flow meters directly into the aircraft, minimizing exposure to ground handling personnel.

In a similar manner, smaller containers of Foray 48B are also to be used with a closed-loop mixing/loading system to minimize the potential for accidental spills and exposure of ground handling personnel.

If dilution with water is needed for full crop coverage, fill tank with approximately 3/4 of the water required for dilution. Begin agitation and pump Foray 48B into the water while maintaining continuous agitation. Agitate as necessary to maintain suspension. Do not allow diluted mixture to remain in the tank for more than 72 hours.

When applying a diluted spray mixture, the use of a spreader-sticker approved for use on growing crops will improve the weather-fastness of the spray deposits. Add the spray adjuvant to the tank after the Foray 48B is added, and before the final volume of water is added to complete the mixture. Reduce or momentarily halt tank agitation and then add the required amount of adjuvant to the diluted mix. Use a closed-loop system to siphon the required quantity of adjuvant or pour the adjuvant into the top hatch of the tank. Once added, close tank opening, and resume agitation; add the rest of the water to complete the spray mix.

Combinations with commonly used spray tank adjuvants are generally not deleterious to Foray 48B, 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. Check with an adjuvant supplier for advice on spray adjuvants that are compatible with biological pesticides such as Foray 48B to avoid incompatibilities.

#### SPRAY VOLUMES

**Aerial Application:** Use appropriate amount of Foray 48B, 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. The minimum amount of water needed per acre will depend upon crop size, weather conditions, spray equipment used and local experience.

#### GENERAL AGRICULTURAL USE INSTRUCTIONS

Foray 48B is a biological insecticide for the control of lepidopterous larvae. It contains the spores and endotoxin crystals of *Bacillus thuringiensis kurstaki*. Foray 48B 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 48B cease feeding within a few hours and die within 2-5 days.

Foray 48B 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 48B 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 reinfestation. 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 contact insecticide to enhance control.

Thorough coverage is essential for optimum performance.

| Crop   | Pests   | Rate <sup>1</sup> (fl. oz./acre) |
|--|---|----------------------------------|
| Forests, Shade Trees, Ornamentals, Shrubs, Sugar Maple Trees, Seed Orchards, Ornamental Fruit, Nut & Citrus Trees <sup>2</sup> | Gypsy Moth & Asian Gypsy Moth<br>Elm Spanworm   | 21 - 107                         |
|  | Spruce Budworm<br>Browntail Moth<br>Douglas Fir Tussock Moth<br>Coneworm<br>Buck Moth   | 21 - 80                          |
|  | Tussock Moths<br>Pine Butterfly<br>Bagworm<br>Leafrollers<br>Tortrix<br>Mimosa Webworm<br>Tent Caterpillar<br>Jackpine Budworm<br>Blackheaded Budworm<br>Saddled Prominent<br>Saddleback Caterpillar<br>Eastern & Western Hemlock Looper<br>Orangestriped Oakworm<br>Satin Moth | 16 - 43                          |
|  | Redhumped Caterpillars<br>Spring & Fall Cankerworm<br>California Oakworm<br>Fall Webworm  | 11 - 31                          |

#### Special Instructions:

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

<sup>2</sup>In treating Gypsy Moth and Asian 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.

Use and mix this product with other pesticides only in accordance with the most restrictive of label limitations and precautions. Do not mix this product with any product containing a label prohibition against such mixing. Do not exceed label dosage rates.

#### 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 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 wide-area public pest control programs sponsored by government entities, such as mosquito abatement, Gypsy Moth control, and Mediterranean Fruit Fly eradication.

Foray 48B contains the spores and endotoxin crystals of *Bacillus thuringiensis kurstaki*. Foray 48B 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 48B only by aerial application.

Use Foray 48B with a closed-loop mixing/loading system that will minimize the potential for accidental spills and exposure of ground handling personnel.

If dilution with water is needed for full crop coverage, fill tank with approximately 3/4 of the water required for dilution. Begin agitation and pump Foray 48B into the water while maintaining continuous agitation. Agitate as necessary to maintain suspension. Do not allow diluted mixture to remain in the tank for more than 72 hours.

Monitor to detect early infestations.

| Crop   | Pests   | Rate <sup>1</sup> (fl. oz./acre) |
|--|---|----------------------------------|
| Forests, Shade Trees, Ornamentals, Shrubs, Sugar Maple Trees, Seed Orchards, Ornamental Fruit, Nut & Citrus Trees <sup>2</sup> | Gypsy Moth & Asian Gypsy Moth<br>Elm Spanworm   | 21 - 107                         |
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|  | Tussock Moths<br>Pine Butterfly<br>Bagworm<br>Leafrollers<br>Tortrix<br>Mimosa Webworm<br>Tent Caterpillar<br>Jackpine Budworm<br>Blackheaded Budworm<br>Saddled Prominent<br>Saddleback Caterpillar<br>Eastern & Western Hemlock Looper<br>Orangestriped Oakworm<br>Satin Moth | 16 - 43                          |
|  | Redhumped Caterpillars<br>Spring & Fall Cankerworm<br>California Oakworm<br>Fall Webworm  | 11 - 31                          |

#### Special Instructions:

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

<sup>2</sup>In treating Gypsy Moth and Asian 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.

Use and mix this product with other pesticides only in accordance with the most restrictive of label limitations and precautions. Do not mix this product with any product containing a label prohibition against such mixing. Do not exceed label dosage rates.

#### Aerial Application

Apply Foray 48B, either alone or diluted with water, aeriaily at the rates per acre shown in the application rates table. Spray volumes of 32-107 fluid ounces of product per acre give optimum coverage. Best results are expected when Foray 48B is applied to dry foliage.

For smaller spray volumes, mix the proper number of teaspoons of Foray 48B from the following chart to attain the desired rates:

| If the rate is:            | Add this amount per gallon of mix: |
|----------------------------|------------------------------------|
| 8 fl. oz. (0.5 pt./acre)   | 1/2 teaspoon                       |
| 16 fl. oz. (1.0 pts./acre) | 1 teaspoon                         |
| 24 fl. oz. (1.5 pts./acre) | 1-1/2 teaspoons                    |
| 32 fl. oz. (2.0 pts./acre) | 2 teaspoons                        |
| 48 fl. oz. (3.0 pts./acre) | 3 teaspoons                        |
| 64 fl. oz. (4.0 pts./acre) | 4 teaspoons                        |

EPA Registration No. 73049-427

EPA Est. No. 33762-1A-1

62008



94-570183

Foray® 48B  
MSDS# BIO-0315 Rev. 3

ISSUED 03/19/08

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL NAME: Foray® 48B  
EPA Reg.No.: 73049-427  
Drug Code: N/A  
List Number: N/A

SYNONYMS: VBC-60013

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: 12.65%  
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: 87.35%  
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

Foray® 48B  
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3. HAZARDS INFORMATION  
-----

EMERGENCY OVERVIEW: Product is non-toxic by ingestion, skin contact, or inhalation. May cause mild eye irritation.

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

INGESTION RATING: None

SKIN ABSORPTION RATING: N/D

INHALATION RATING: None

CORROSIVENESS RATING: N/D

SKIN CONTACT RATING: None

SKIN SENSITIZATION RATING: None

EYE CONTACT RATING: Mild irritant

TARGET ORGANS: Eyes

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

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

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: N/D Pre-existing eye lesions

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 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.

Foray® 48B

MSDS# BIO-0315 Rev. 3

ISSUED 03/19/08

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4. FIRST AID MEASURES (continued)  
-----

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

5. FIRE FIGHTING PROCEDURES  
-----

FLASH POINT: N/D  
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 product in tightly closed containers in cool and dry place when not in use.

SPECIAL PRECAUTIONS: N/D

8. EXPOSURE CONTROLS/PERSONAL PROTECTION  
-----

ENGINEERING CONTROLS: Use local exhaust

RESPIRATORY PROTECTION: Not usually required. If necessary, use a MSHA/NIOSH approved (or equivalent) respirator with dust-mist/organic vapor cartridge combination.

SKIN PROTECTION: Butyl or nitrile rubber gloves, clothing to minimize skin contact.

Foray® 48B  
MSDS# BIO-0315 Rev. 3

ISSUED 03/19/08

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION (continue)  
-----

EYE PROTECTION: Safety glasses or goggles.

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

9. PHYSICAL AND CHEMICAL PROPERTIES  
-----

APPEARANCE/PHYSICAL STATE: Light brown opaque liquid  
ODOR: Yeast-like  
BOILING POINT: Approx. 100°C (212°F)  
MELTING/FREEZING POINT: Approx. 0° (32°)  
VAPOR PRESSURE (mm Hg): N/D  
VAPOR DENSITY (Air=1): >1  
EVAPORATION RATE: <1  
BULK DENSITY: 1.0-1.2 g/cm<sup>3</sup>  
SPECIFIC GRAVITY: N/D  
SOLUBILITY: Miscible in water  
pH: 4.2-4.8 as a 10% solution in water  
VISCOSITY: 561 cp at 25°C

10. STABILITY AND REACTIVITY  
-----

CHEMICAL STABILITY: Stable. No oxidizing or reducing properties.

INCOMPATIBILITIES: N/D

HAZARDOUS DECOMPOSITION PRODUCTS: N/D

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION  
-----

Acute Toxicity

ORAL LD50: N/D. > 5,000 mg/kg (rat)

DERMAL LD50: N/D. > 5,000 mg/kg (rat)

INHALATION LC50: > 2.14 mg/L (rat)

CORROSIVENESS: N/D.

DERMAL IRRITATION: Slightly irritating to the rabbit skin. Effects were reversible within 48 hours.

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11. TOXICOLOGICAL INFORMATION  
-----

OCULAR IRRITATION: Mild irritant to the rabbit eye. Effects were reversible within 7 days.

DERMAL SENSITIZATION: Not a contact sensitizer in the Guinea pig

SPECIAL TARGET ORGAN EFFECTS: N/D

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

-----  
12. ECOLOGICAL INFORMATION  
-----

ECOLOGICAL INFORMATION: N/D

-----  
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

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

Foray® 48B  
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ISSUED 03/19/08

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15. REGULATORY INFORMATION  
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TSCA STATUS: Exempt RCRA STATUS: N/D  
CERCLA STATUS: N/D PROP 65 (CA): N/D  
SARA STATUS: N/D

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16. OTHER INFORMATION  
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REASON FOR ISSUE: Updates Section 3 Hazard information; Section 9.  
Physical and Chemical Properties;  
APPROVAL DATE: 03/09/2008  
MSDS Number: BIO-0315  
SUPERSEDES DATE: 02/19/2008  
EPA Reg. No. 73049-427

LEGEND: N/A = Not Applicable  
N/D = Not Determined  
N/L = Not Listed  
L = Listed  
C = Ceiling  
S = Short-term  
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## **APPENDIX F**

### **LETTERS**

**From:** Wright, Lindsay  
**To:** Inguanzo, Yolanda I - APHIS  
**Cc:** Martha Jensen

**Subject:** Clark County Gypsy Moth Eradication Project - US Fish and Wildlife Service

**Date:** Tuesday, March 24, 2015 12:54:49 PM

Dear Ms. Inguanzo,

We have reviewed the information your office sent to us January 28, 2015.

We do not expect the proposed application of herbicides (to eradicate the Yacolt Gypsy Moth) would result in any effects to any of the listed species described on the species list because we do not expect any of them to be present.

The treatment site is outside the range of the marbled murrelet (beyond 55 miles from marine waters). There are no historical northern spotted owl sites and no suitable habitat for northern spotted owl near or within the treatment area. Additionally, we do not expect any of the following species to be present or affected by the project: Oregon spotted frog, Streaked horned lark, Yellow-billed cuckoo, bull trout, Columbian white-tailed deer, and Gray wolf.

Thank you for your inquiry. Please let me know if we can be of any further assistance.

Lindsay Wright  
Fish and Wildlife Biologist  
US Fish and Wildlife Service  
510 Desmond Drive SE, Lacey, WA 98503  
360-753-6037  
[lindsay\\_wright@fws.gov](mailto:lindsay_wright@fws.gov)  
<http://www.fws.gov/wafwo>



United States  
Department of  
Agriculture

Marketing and  
Regulatory  
Programs

Animal and  
Plant Health  
Inspection  
Service

Plant Protection and  
Quarantine

Plant Health Director's  
Office - Alaska &  
Washington  
33400 9th Ave. S.,  
Suite 200  
Federal Way, WA 98003  
Ph: (253) 944-2050  
Fax: (253) 874-1109

March 27, 2015

Rian Wojahn  
Pest Biologist/ Eradication Coordinator  
Washington Department of Agriculture  
3939 Cleveland Ave SE  
Tumwater, WA 9850

Subject: Proposed eradication project for gypsy moth in Clark county

Dear Mr. Wojahn:

The United States Department of Agriculture - Animal and Plant Health Inspection Service (USDA-APHIS), in cooperation with the Washington State Department of Agriculture is formulating plans for a proposed gypsy moth eradication project at a site near Yacolt in Clark County. The proposed action if approved will consist of aerial application of the biological insecticide *Bacillus thuringiensis* var. *kurstaki* (Btk) to all trees and shrubs in the treatment site. The proposed treatment will be administered in April or early May. The site encompasses 220 acres and is located in Clark County, (T5N R3E Sec. 26,25).

We carefully reviewed the National Marine Fisheries Service (NMFS) Section 7 Consultation website ([http://www.nwr.noaa.gov/protected\\_species/species\\_list/species\\_lists.html](http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html)) for a list of species and critical habitats that may be present within the project area, and consulted with the local NMFS office. There are no threatened or endangered marine species or critical habitat that may occur in the treatment area.

**Effects of the proposed treatments on listed species:**

In the proposed Washington 2015 action, BtK will be applied by aerial application to foliage only in a limited area and can be applied with great precision. In the event that an incidental amount of BtK should land or make its way to marine habitats through drift or rain water, it will be in amounts not likely to affect fish or aquatic invertebrates. According to the USDA 2012 Final Supplemental Environmental Impact Statement, entitled *Gypsy Moth Management in the United States: a cooperative approach* most species of aquatic invertebrates and fish showed no effect from exposure to BtK at concentrations that substantially exceeded expected environmental concentrations that would result from this gypsy moth control treatment.

Based on the low toxicity of BtK and given the measures that will be taken by the applicators to minimize the application of the control agents to surface water, after consulting with the National Marine Fisheries Service and reviewing available information, USDA-APHIS has determined that the proposed eradication project will have no effect on any listed marine species.

United States Department of Agriculture  
Animal and Plant Health Inspection Service

cc: Jeff Head, USDA-APHIS SPHD, acting  
Diana Hoffman, USDA-APHIS SPHD, acting  
Randy Taylor, WSDA

Animal and Plant Health Inspection Service  
*Safeguarding American Agriculture*  
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**APPENDIX G**

**FINDING OF NO SIGNIFICANT IMPACT**

Finding of No Significant Impact  
for  
CLARK COUNTY,  
WASHINGTON

2015 APHIS Cooperative Gypsy Moth Eradication Program  
Site-Specific Environmental Assessment

The United States Department of Agriculture, (USDA), in cooperation with the Washington State Department of Agriculture, (WSDA), proposes an eradication program to eliminate an isolated infestation of the non-native Gypsy Moth, *Lymantria dispar* (Linnaeus), in Clark County, Washington during the spring and summer of 2015. Under the process described in the National Environment Policy Act, 1969 (NEPA), an Environmental Assessment (EA) was prepared to analyze the effect of the proposed action at the site-specific level. The environmental consequences of this program are analyzed in this EA, which is supported by and tiered to, the "Gypsy Moth Management in the United States: a cooperative approach, Final Environmental Impact Statement, November 1995", (FEIS) and a 2012 supplement by the same name (FSEIS). The USDA examined the six alternatives available in the FEIS and has selected the preferred Alternative 2, aerial application of the biological insecticide *Bacillus thuringiensis var. kurstaki*. The treatment options analyzed included:

- 1) No action
- 2) *Bacillus thuringiensis var. kurstaki* (Btk); a biological insecticide
- 3) Diflubenzuron; a chemical insecticide
- 4) Gypsy Moth nucleopolyhedrosis virus (NPV) or Gypchek; a biological insecticide
- 5) Mass trapping, Gypsy Moth traps with disparlure to attract male Gypsy Moths
- 6) Mating disruption, aerial application of disparlure
- 7) Sterile insect release, release of sterile or partially-sterile Gypsy Moth life stages

The potential environment impacts and mitigation measures of these treatment options are described in the FEIS, FSEIS, and EA. The EA was prepared by the USDA and WSDA. The FEIS, FSEIS, and EA are available for review at the following locations:

USDA-APHIS-PPQ  
Office of the State Plant Health Director  
33400 9<sup>th</sup> Ave. S., Suite 200  
Federal Way, WA 98003

Washington State Library  
6880 Capitol Blvd. S  
Tumwater, WA 98501

USDA-APHIS-PPQ  
APHIS Library, 1st floor  
4700 River Road  
Riverdale, MD 20737

A cooperative USDA/WSDA eradication project is selected. This cooperative program selects the preferred Alternative 2: specifically eradication, due to the geographic location of Washington State. The USDA/WSDA Gypsy Moth eradication strategy proposed for 2015 utilizes the biological insecticide, *Bacillus thuringiensis* var. *kurstaki*, (Btk).

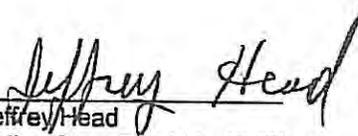
- Btk will be applied to all host vegetation at the core of the infestation (220 acres). Treatments will be conducted using aerial application equipment and there will be three to five applications beginning in late April. Btk treatments will occur no later than June 30, 2015. The exact number and timing of treatments will depend on larval development, foliage development and weather conditions.

No comments were received during the 30-day public comment period. For more information on implementation of this program, please refer to the site specific 2015 EA. Implementation of this program, with associated operating procedures and mitigation measures as identified in the EA, would ensure that no significant adverse environmental impact would occur to the human environment.

Reasons for the finding of no significant impact include:

- A. B.t.k., used as described in the Environmental Assessment (EA), present minimal risk of significant impact on human health.
- B. It is not anticipated that any non-target animal or plant populations would be adversely affected due to the limited size of the treatment areas. Any detrimental effects on susceptible non-target organisms would be transient and these populations would recover as individuals from nearby untreated areas re-colonized the treatment areas.
- C. No threatened, endangered, or sensitive species would be adversely affected by this eradication project.
- D. No detrimental effects on vegetation, water, or soil are known or anticipated due to this eradication project.
- E. No cumulative effects are known or anticipated.

This EA is consistent with Executive Order No. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." That implementation of this cooperative USDA/WSDA eradication project will not result in disproportionately high and adverse human health or environmental effects on any minority populations and low-income populations. As required by the Executive Order of the President, opportunities for full participation in the NEPA process by such populations have been provided.

  
Jeffrey Head  
Acting State Plant Health Director – WA State  
United States Department of Agriculture  
Animal & Plant Health Inspection Service  
Plant Protection and Quarantine

4-15-2015

Date