Finding of No Significant Impact
for
Eugene, Lane County, Oregon
The 2009 USDA-APHIS, Oregon Department of Agriculture
Cooperative Gypsy Moth Eradication Program
Site-Specific Environmental Assessment

The United States Department of Agriculture (USDA), Animal Plant Health Inspection Service (APHIS) and the Oregon Department of Agriculture (ODA) have jointly prepared an Environmental Assessment (EA) for the eradication of Gypsy Moth in a 626 acre area in Southeast Eugene, Lane County, Oregon. The need for action against gypsy moth in Oregon is briefly outlined here, a more detailed rationale can be found by reading the EA. The EA may be found online at:
http://egov.oregon.gov/ODA/PLANT/IPPM/gm_eugene_eradication09.shtml and at
http://www.aphis.usda.gov/plant_health/ea/gm.html

Hard copies of the EA may be obtained from:
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6135 NE 80th Ave., Suite A-5
Portland, OR 97218-4033
503-326-2814

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Oregon Department of Agriculture
635 Capitol St., NE
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The gypsy moth, a non-native destructive insect pest of trees and shrubs, while established in the Northeastern part of the U.S., is not established in the Pacific Northwest. The gypsy moth has a large host range, and as an exotic plant pest, it has the potential to damage and/or kill large areas of forest by defoliation. The need for immediate action is to prevent the further spread of this **environmentally destructive invasive pest** not only within Eugene, but into other areas of the state. Delay of action could allow the pest to spread, requiring a larger program in future years. Besides the environmental damage, if the gypsy moths were to become permanently established in Oregon the Federal government and/or individual States and also foreign countries would likely impose quarantine restrictions on the movement of plants, plant products, and other articles that can spread gypsy moth. Therefore, we are following the recommendation of the USDA's Gypsy *Moth Management in the United States: a cooperative approach, Final Environmental Impact Statement, November 1995* (FEIS) that concludes that isolated infestations of gypsy moth should be eradicated.

Under the process described in the National Environmental Policy Act, 1969 (NEPA), USDA, APHIS in conjunction with ODA prepared the EA to analyze the effect of the proposed action at the site-specific level. The FEIS examined six alternatives and selected Alternative 6 (suppression, eradication, and slow-the-spread) as the preferred alternative. Under this alternative several treatment options are available for gypsy moth management. The treatment options analyzed included: (1) no action; (2) *Bacillus thuringiensis var. kurstaki* (*B.t.k*), 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. In the current EA, the USDA, APHIS in conjunction with ODA, evaluated two plans of action: a no action alternative and a treatment alternative using *B.t.k.* following established protocols. The environmental consequences of the eradication program were analyzed in this EA,

and were supported by and tiered to the FEIS. The EA concluded that although a short term reduction of Lepidoptera in the treatment area is possible, the long term effects of not eradicating a pest such as gypsy moth would have a greater harm to natural resources, including harm to the urban resources of park land and stream quality. The degradation of the environment by gypsy moth, under the no action alternative, would deplete plant resources, including defoliating vegetation protecting streams creating the potential for increasing sediment and water temperatures which are detrimental to fish and other aquatic species. Under the preferred alternative, we do not anticipate any long term effects of applying B.t.k. as there has not been any scientific evidence indicating such effects. It is anticipated that other species of Lepidoptera from surrounding areas will repopulate the treatment area over time.

To eradicate this population of gypsy moths as quickly as possible with the smallest area affected, the preferred alternative of both USDA APHIS and ODA is eradication using three aerial applications of *B.t.k.* at a rate of 64 ounces per acre in a 626 acre eradication area in Southeast Eugene, Lane County. To ensure the effectiveness of the *B.t.k.* application, following the aerial applications, pheromone traps will be placed at a density of 3-9 traps/acre, as detailed in the EA. The use of *B.t.k.* is the safest, most effective method to ensure that the gypsy moth population in the area is eradicated and does not serve as a source for future pest outbreaks. Implementation of this program, with associated operating procedures and mitigation measures as identified in the EA, will ensure there will be no significant adverse environmental impacts on the human environment.

The USDA, APHIS and ODA have agreed to conduct a joint eradication project. As part of that project, USDA, APHIS, in partnership with the ODA, conducted an extensive public involvement process. The public was notified of the proposed action via newspaper announcements, a public forum was held, over 40 letters were sent to parties who have shown interest in treatment actions in the past, and 1700 letters were sent to residents in the affected community. This process included public scoping of the community within and surrounding the spray zone by ODA, under the direction of and in consultation with the USDA, APHIS. Oregon Department of Agriculture represented our combined interests at an "invitation only" public forum at the request of the Mayor of Eugene and opposition groups. We also held a joint USDA, APHIS/ODA public information meeting. A draft EA was prepared, and made available for public review. We requested written comments from the public on the draft EA during a 35 day public comment period. Written responses to comments received on the draft EA are included as an Appendix in the final EA. In addition USDA, APHIS responses to the questions and comments on the draft EA, including several comments received after the public comment period closed, are attached to this document.

The Reasons for the determination of a finding of no significant impact are as follows:

1.) Human Health - *B.t.k.* is a naturally occurring soil bacterium. As noted in the EA, organizations with the appropriate scientific expertise such as the EPA and World Health Organization have all remarked on the safety to humans and the environment of *B.t.k.*, including aerial applications. Since the 1960's, *B.t.k.* has been used extensively for gypsy moth suppression and eradication programs throughout the eastern United States. Thousands of acres are sprayed annually with B.t.k. formulations, including Foray 48B; no significant adverse human health effects have been reported. In Oregon, aerial applications of *B.t.k.* have been used in gypsy moth eradication programs since 1984. Human health studies conducted during five large eradication programs in populated areas (in Oregon) have found no significant health problems attributable to the aerial treatments. In addition, USDA, APHIS has information from Oregon Department of Health officials stating that there have been no reports of adverse human health affects resulting from the use of *B.t.k.* to control gypsy moths. Moreover, advance notice to the public prior to aerial application and following program operational guidelines will provide adequate public and worker health protection.

2. Cumulative Impacts – The draft EA analyzed the potential cumulative impacts of the proposed action in Section E.4. APHIS found that no significant cumulative impacts are likely to occur from the proposed three

treatments of Foray 48B Organic on 626 acres in Eugene, Oregon. Importantly, *B.t.k.* only affects Lepidoptera larva and any reduction of local non-target Lepidoptera will be temporary as they will quickly recolonize from the surrounding area. Additional intensive trapping using the pheromone Disparlure is not known to cause any harmful cumulative impacts on humans or the environment.

3.) Nontarget Organisms - *B.t.k.* is not harmful to humans, pets, domestic animals, birds, wildlife, or aquatic organisms. Beneficial insects including predators, parasites, and honeybees are not harmed by *B.t.k. B.t.k.* is toxic only to larval stages (caterpillars) of many, but not all, butterflies and moths. It does not affect the adult, pupae or egg stages of Lepidoptera. No long-term, irreversible effects to non-target butterflies or moths are known or expected.

4.) Potential affects of *B.t.k.* As noted in the EA E.2., aqueous formulations of *B.t.k.* contain no organic solvents. None of the inert ingredients of the formulations being considered for use are on EPA list 1 (Inerts of Toxicological Concern), list 2 (Potentially Toxic Inerts), or list 3 (Inerts of Unknown Toxicity). The *B.t.k.* product (including inert ingredients) being used for this program has been certified by EPA and OMRI (Organic Materials Review Institute) for organic production. The inert ingredients must be only from EPA list 4, (Inerts of Minimal Risk or No Risk) which are essentially food additives, and therefore should not have a harmful effect on humans or the environment.

5.) Endangered and threatened species - APHIS has been working closely with the U.S. Fish and Wildlife Service (Service) through the informal consultation process to ensure that its actions do not harm federally listed species. Through that process, APHIS has determined that the proposed project will have no effect on the Oregon silverspot butterfly and its critical habitat or on Bradshaw's lomatium. In addition, based on a survey of the treatment area conducted in April 2009, no lupines that may serve as larval hosts of the Fender's blue butterfly, including the Kincaid's lupine, are present within the treatment area. Therefore, APHIS has determined that the proposed project will have no effect on the Fender's blue butterfly, Kincaid's lupine, and their designated critical habitat. APHIS has also determined that the program may affect, but is not likely to adversely affect the Willamette daisy and has requested concurrence with this determination from the Service. *B.t.k.*treatments will not be applied until consultation has been completed with the Service.

This EA is consistent with Executive Order No. 19898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" and Executive Order 13045, "Protection of Children From Environmental Health Risks and Safety Risks." The implementation of this cooperative USDA, APHIS-Oregon Department of Agriculture eradication project will not result in disproportionately high and adverse human health or environmental effects on any minority, low-income, and youth populations.

Based on the analysis in the EA of the potential environmental impacts on the human environment that may result from this action, i.e., the preferred alternative, along with the implementation of the safety precautions outlined in the EA Mitigation Measures , program Operating Guidelines and the pesticide label; including consideration for endangered and threatened species, I have determined that the proposed cooperative eradication program will not significantly adversely impact the quality of the human environment, and thus an environmental impact statement does not need to be prepared for this action.

Mitchell G. Nelson
State Plant Health Director
USDA, APHIS, PPQ

4/16/2009
Date

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Attachment to: Finding of No Significant Impact for the 2009 USDA-APHIS, Oregon Department of Agriculture Cooperative Gypsy Moth in Eugene, Lane County, Oregon

This represents USDA, APHIS' response to comments directed at our draft Gypsy Moth Environmental Assessment (EA) and the processes we use to make a decision on whether to eradicate the pest by use of aerial application of *B.t.k.* An attempt was made to address all comments received including those that arrived after the announced comment period ended.

Some of the groups and individuals who responded positively to our proposal for aerial application include:

Oregon Invasive Species Council (An independent board made up of community leaders, scientists, managers from various Oregon government offices who have jurisdiction over environmental issues, select private industry groups, and members of the conservation organizations.)

Northwest Coalition for Alternatives to Pesticides

Nature Conservancy (Steven Buttrick)

Eugene Register Guard newspaper Editorial 2/17/09

Eugene Register Guard non scientific public poll 2/20/09; majority of people responding to the online poll agreed that aerial application was necessary

1. We received several comments questioning whether finding seven gypsy moths constitutes an emergency requiring us to conduct a spray program. APHIS has stated our reasons why we believe that a treatment program is required this year in the EA (Sec A.1; pg 7). As discussed, two male moths were caught in the area in 2007, and seven moths were caught within that same area in 2008, which according to our program guidelines constitutes are breeding population. Waiting another year most likely will result in a larger infestation and consequently a larger proposed treatment area that will affect even more people, property, sensitive sites, and threatened and endangered species.

2. We received several comments asking us why we do not use mass trapping as an alternative to using a pesticide like *B.t.k.* APHIS considered mass trapping, but has chosen to use *B.t.k.* organic formulation of Foray 48B as explained fully in the EA (Sec D.3; pg 20). The use of pheromone traps in mass density does not have a very high success rate for eradication. Mass trapping uses an increased number of the same trap/pheromone combination that is used in detection surveys. The pheromone attracts only the male moths after they

hatch in late summer. To allow another year of egg mass hatching and potential larva spread in the spring could result in a much larger area needing treatment next year. We use pheromone trapping as an effective monitoring device to ensure the success of the aerial spray program.

3. We received several comments asking us why we do not use something like Gypchek, a virus pesticide specific to the gypsy moth and not harmful to other Lepidoptera. APHIS did consider virus pesticides like Gypchek in the EA (Sec D.1; pg 19); we have chosen to use *B.t.k.* because it is registered in the state of Oregon, whereas virus pesticides like Gypchek are not. In addition, under the current parameters of this spray program we feel that *B.t.k.* is a more effective alternative; programs using Gypchek have a variable success rate.

4. We received several comments asking us why we do not use sterile release, or mating disruption, as an alternative to the use of pesticide *B.t.k.* APHIS considered several alternatives to *B.t.k.* in the EA (Sec D-E; pg 19-33), and concluded that neither sterile release nor mating disruption are as effective in eradicating gypsy moth in the current circumstances in Eugene. We agree with the information ODA has on their website about these eradication methods and further described in the EA (Sec A.1; pg 7):

- Mating disruption is still an experimental method and its effect on gypsy moth infestations is variable. This alternative has been used more frequently in recent years in slow-the-spread programs in eastern states but has not been used for eradication in western states.
- Sterile insect releases are also experimental and their effect on gypsy moth suppression is variable. ODA used it in 1992 but failed to eradicate a gypsy moth population in Portland. ODA had to use *B.t.k.* in 1993 to eradicate this population.

5. We received several comments stating that our proposed spray program violates the Foray 48B label and various other federal pesticide laws. APHIS disagrees with these comments because we will be applying the pesticide according to label instructions. To address the comments that our program violates the Foray 48B label, we want to make it clear that we are using an organic formulation of this insecticide (EA Sec D.3; pg 20), and that the label has different requirements for use in an agricultural application versus non-agricultural use, which is what this program will be. Most comments are based upon the non-organic formulation of Foray 48B which was used in gypsy moth eradication projects in Oregon before 2008. To meet community requests for increased safety and to assist organic growers, APHIS and ODA encouraged the manufacture to register the organic label of Foray 48B in Oregon. An organic formulation became available in 2008 and has a different label than the non-organic Foray 48B. While we believe both formulations of Foray 48B, non-organic and organic, are safe to use in the proposed aerial application program, the organic formulation has the additional advantages of not adversely affecting organic farmers. The inert ingredients have been certified by Organic Materials

Review Institute (OMRI) as meeting their very strict requirements. All inert ingredients in an organic formulation must be certified for use in food and food processing from toxic category IV (Inerts of Minimal Risk or No Risk). See Appendix C (pg 51) of the EA for the Foray 48B pesticide label; Section E.2 (pg 24) for a description of the inert ingredients and applicable laws governing their use; and Appendix E (pg 88) for more information concerning the inert ingredients in organic Foray 48B formulation.

We received comments asking why we are not applying the biological pesticide Foray 48B by ground to reduce the effects on humans and the environment. APHIS has several reasons why we are recommending an aerial application of Foray 48B. First, the organic Foray 48B label (EA Appx C; pg 51) specifies that it is for aerial application only, so we would need to use a different *B.t.k* product for ground application. Second, the proposed area is extremely large for ground application and contains numerous private residences that will require permission to access in order to treat all trees and shrubs (EA Sec C.1; pg 14). The area also includes a large forested block, the Amazon Creek headwaters, that would be impossible to access with ground equipment and get adequate coverage of the tree canopy. Ground equipment may not reach the tops of tall trees.

6. There were several comments stating that the pesticide Foray 48B requires a 4 hour reentry period after application. APHIS disagrees with these comments as we are using the non agriculture use application of this biological pesticide. According to the organic Foray 48B label, the 4 hour re-entry period is only required for agriculture applications and not for non agriculture applications such as we are proposing (EA Appx C; pg 51). In Appendix D of the EA (pg 59) a letter from the EPA provides additional information on the difference between agriculture and non agriculture use and degree of exposure. Their explanation that the 4 hour re-entry period for agriculture workers is based on the assumption of daily work exposure over a life time and is the minimum general safety precaution taken, with even the least toxic pesticides. This difference between agricultural and non-agriculture use labels is further explained in the EA (Appx D; pg 89).

7. We received several comments stating we are violating the label for Foray 48B by incorrectly applying it to water. APHIS disagrees with this analysis as it is not our intention to spray *B.t.k.* over open areas of water, waterways, or surface water. Specifically the label states *"Except [for water that lies] 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"* (EA Appx C; pg 51). Much of the area is forested canopy and we would not be violating the label in these areas. However, we plan to avoid treating over the one small seasonal pond and Amazon Creek that have been identified in the proposed area even where covered by forest. The aerial applicator will buffer

these water bodies according to the label and our instructions by turning off the boom applicator (EA Sec E.5; pg 32).

8. We received several comments that the spray will have an effect on endangered species, including the following:

Kincaid's Lupine: We have determined that *B.t.k.* will have no effect on this plant as it is not phytotoxic, and Kincaid's lupine has multiple pollinating agents besides Lepidoptera species. *In addition, we requseted a survey be conducted by Dr. Paul Hammond, a recognized expert on this plant and the Fenders Blue Butterfly, and no lupines were found within the spray zone.*

Oregon Silverspot and its habitat: APHIS has determined that the proposed gypsy moth spray program will have no effect on the Oregon Silverspot butterfly because the closest known population of this species is near the coast, more than 20 miles away from Eugene. Designated critical habitat of this species is not within the treatment area.

Bradshaw's lomatium: We have determined that *B.t.k.* will have no effect on this plant as *B.t.k.* is not known to be phytotoxic, nor does it affect its main pollinator's bees, flies, beetles and wasps. In addition, Bradshaw's lomatium is not known to occur in or near the treatment area.

Willamette daisy: USDA APHIS has determined that the program may affect, but is not likely to adversely affect the Willamette daisy as the nearest known Willamette Daisy is located 1.5 miles from the affected spray zone Although Lepidoptera are known to be pollinators of the Willamette daisy, a Syrphid fly is considered the main pollinator.

Fender's blue butterfly: USDA APHIS has determined that there is "no effect on the Fender's blue butterfly"; as a recent survey did not find the host plant, Kincaid's Lupine in the spray area. We are presently seeking US Fish and Wildlife Service concurrence to this determination. No applications of *B.t.k.* will occur until we have received concurrence from the Service.

APHIS's Biological Assessment for these species is posted on the ODA gypsy moth webpage, http://egov.oregon.gov/ODA/PLANT/IPPM/gm_eugene_eradication09.shtml and are considered in the Section C.2 (pg 16) of the EA. F&WS' concurrence letter and all other Endanger Species Act correspondence can be found in the EA (Appx B; pg 42, with updates on the ODA web site).

9. We received several comments concerning the effects of *B.t.k.* spray on amphibians and especially the Northern Red Legged Frog. APHIS has replied to all ESA issues in the EA including this one (Appx E; pg 92). *B.t.k.* is a common bacterium found in the soil that is not harmful to animals, which includes

amphibians. The bacteria only affects certain Lepidoptera larva, therefore we have determined that the spray project will have no affect on animal species within the spray zone. In addition, the Northern Red Legged Frog is not a federal endangered species and therefore has no special consideration under NEPA or ESA. However, APHIS agrees with ODA's assessment that the proposed treatment will not affect the Northern Red Legged Frog, both because it will not be applied directly to the pond and because the formulation of pesticide being proposed utilizes the variety *kurstaki* of the *B.t.k.* bacterium, which does not affect aquatic invertebrates, the main food supply for the Northern Red Legged Frog (EA Sec E.2; pg 24).

10. One comment expressed concerns about the effect on non-endangered Lepidoptera species within the spray zone. While it is true that non-target Lepidoptera may be affected, APHIS agrees with the determinations in the EA (Sec E.2; pg 28) and the entomological and ecological reports cited in Section J (pg 37). These studies indicate that Lepidoptera will return to the area from surrounding areas since the spray zone is a small area. We respectively disagree with comments challenging this conclusion citing potential long term effects, or issues of a cited paper where certain species did not return to that area. We believe that *B.t.k.* is the best alternative to ensure eradication of this gypsy moth infestation in quickest timeframe and involving the least amount of acres. To allow gypsy moth become established in Oregon would reduce forage, alter the environment and further threaten rare plant and animal species, in addition to other negative economic and environmental impacts.

In addition, APHIS asked Richard Worth, Oregon Department of Agriculture Lepidoptera expert, review the comments and we agree with his assessment: *"BtK does not "target" all Lepidoptera. Only those with an alkaline intestinal pH are vulnerable and the most vulnerable stages are those which are early in development and/or small. Furthermore, those feeding on understory plants in dense forest canopy have little exposure to BtK. It is incorrect to state that eggs are vulnerable. BtK cannot and does not affect eggs.*

None of the species of butterflies mentioned in this comment are rare, threatened, or endangered. In fact, all are widespread and common species found throughout the Willamette Valley and surrounding hills. Providing that human disruption (development, deforestation, pollution, private application of other pesticides that are less specific and longer lasting, exotic species impacts, etc.) of their habitats within the spray area does not increase, all of these species will recolonize the area in time. Local extinctions of widespread, non-threatened or non-endangered species are biologically and ecologically insignificant except in very small areas and over short time scales.

The Severns 2002 data are irrelevant. No pre-spray population data from the Schwarz Park spray site were acquired so it is not possible to know how stable or large the butterfly populations were at that site. It is very common for localized

populations of insects to "wink in and out" of existence (this is based upon metapopulation demographic studies), especially those which are small and comprised of poorly dispersing individuals. Local exterminations from natural causes and sheer chance are the norm, followed by recolonization. Furthermore, the Schwarz Park population data were based on encounters, which do not equate to presence or absence. Encounters are simply whether or not a species or individual was seen. The absence of encounters is not the equivalent of absence of species, let alone extinction. It is a measure of detectability, which can be influenced by survey timing, butterfly activity, or chance."

11. We received several comments questioning the health affects of and/or the need for aerially applied *B.t.k.* APHIS agrees with the EPA that *B.t.k.* is safe to use as labeled around humans. In addition, APHIS agrees with the many peer reviewed scientific papers noted in the reference section in the EA (Sec J; pg 37), which have evaluated the human health effects of *B.t.k.* and found that there are no significant adverse effects on humans. Since the 1960's, *B.t.k.* has been used extensively for gypsy moth suppression and eradication programs throughout the United States. Passive and active studies on human health have been conducted and no significant human health effects of aerial applications of *B.t.k.* have been recorded. These findings are summarized on page 26 of Section E.2 of the EA, titled *B.t.k. and human health.*

In Oregon, *B.t.k.* has been used in gypsy moth eradication programs since 1984; human health studies conducted during five large eradication programs in populated areas have found no significant health problems attributable to the treatments. The effects of *B.t.k.* on humans are clearly discussed in the EA. APHIS encourages those who have questions on the safety of *B.t.k.* to read the peer reviewed articles including;

World Health Organization. 1999. Environmental Health Criteria 217 Bacillus thurigiensis. Who Geneva 105 pp.; or

Syracuse Environmental Research Associates, Inc. 2004. Control Eradication Agents for the Gypsy Moth-Human Health and Ecological Risk Assessment for *Bacillus thuringiensis var. kurstaki* (*B.t.k.*) Final Report. 152 pp.

Related comments expressed the opinion that not enough was known about the long term effects of *B.t.k.* on humans and animals and we should be using a lesser or safer option because of these unknown effect. We disagree with this comment as *B.t.k.* has been used for over 30 years without any determination that there are long term effects on humans or other animals. One commentator compared *B.t.k.* to the organophosphate DDT. As earlier stated, *B.t.k.* is a bacteria commonly found in the soil, it is used in organic farming, and other applications world wide. It is a biological pesticide completely different than chemicals such as DDT in its mode of action, persistence in the environment and affected host range.

12. We received several comments stating that the unknown inert ingredients posse a potential human health hazard as the company refuses to reveal what those inert ingredients are. APHIS respectively disagrees with the assertion that since the ingredients are not published, they are inherently suspect and a human hazard. Under Federal Insecticide, Fungicide and Rodenticide Act, the pesticide companies have a legal right to not disclose proprietary information to the public which includes the list of inerts. The Foray 48B inert ingredients have been confidentially disclosed to EPA and to OMRI for organic certification. APHIS agrees with the explanation provided in the EA (Sec E.2; pg 25) that OMRI only will certify a product as organic if the ingredients are on the EPA list 4 and are therefore practically non toxic and essentially food additives with no known harmful effect on humans. Additionally, we will follow all label directions for applying the biological pesticide, and use project guidelines described in the EA to reduce public exposure to the spray (Sec E.2; pg 26).

13. We received comments that the drift from the aerial application will move out into the community and cause harm to humans and the community at large. APHIS and ODA have worked together to determine mitigation measures and operating procedures to reduce drift outside the spray zone. These are described in the 2009 Environmental Assessment for Aerial Applications will be followed (EA Sec F; pg 35). Although drift may occur outside the treatment area, APHIS and ODA have provided adequate notice to those within the treatment area, and also to those that are ¼ mile beyond the treatment area boundary. However, as we have stated in the EA (Sec E.2; pg 26) and elsewhere, Foray 48B organic *B.t.k.* applied at labeled rates does not present a health hazard to humans or animals. Specific mitigations within our treatment regime to reduce drift include not treating when average wind speed is above 10 miles per hour and when thermal inversion layers exist that can increase the likelihood of drift. Temperature and wind conditions will be continually monitored by crews on site. Chemical drift beyond the treatment block may still occur, but deposition rates will be much lower than those within the block and decrease exponentially as the distance form the block increases

14. We received several comments concerning where a person can obtain health information about *B.t.k.* and health services if they have a reaction, or if they believe they have been exposed to *B.t.k.* and want to properly report it. APHIS continues to believe that the scientific literature validates the conclusions of APHIS, ODA and the Oregon Department of Health on the safety of *B.t.k.* to humans and animals. The Oregon Department of Health has a very good website with information about *B.t.k.* including general safety information to minimize exposure during spray operation. That information can be found at http://www.oregon.gov/DHS/ph/pesticide/btkfacts.shtml . In addition, APHIS and ODA have worked with community organizations and the Eugene leadership to develop a health and safety fact sheet about *B.t.k.* This fact sheet will be included with the letters we send to those in and near the treatment block, announce the dates of the cooperative spray program.

15. We received several comments concerning the issue of Multiple Chemical Sensitive people who feel they may be adversely affected by the spray. APHIS agrees with the EPA and other scientific evaluations that *B.t.k.* does not have significant adverse effects on healthy humans. However, we do want to make sure that everyone has the opportunity to make arrangements to take adequate safeguards for their health condition. We will inform the public within the spray zone and ¼ mile surrounding, via mail concerning the dates of our spray program. In addition, we will be publishing spray information in the Eugene Register-Guard newspaper and on the Oregon Department of Agriculture website, http://www.oregon.gov/ODA/PLANT/IPPM/gm_eugene_eradication09.shtml . APHIS believes that the ODA website is the best place for information to be distributed and accessed by the public for this program. This website and a hotline phone number, 1-800-525-0137, will have the latest information on the spray schedule. This is especially important as the spray schedule is weather dependent. Delays in the schedule will be posted on the website, by calling the hotline, or by signing up for the ODA phone registry. The later allows people to sign up on the website, http://oda.state.or.us/dbs/ippm_registry/add.lasso to receive automated phone updates to the spray schedule. As previously mentioned, a health fact sheet about *B.t.k.* has been prepared that provides information and suggests actions that concerned persons can take if they continue to have concerns about the health effects of the spray.

16. A comment received that said we are purposely endangering the health of citizens in the Eugene spray area, especially those who have are sensitive to chemicals. This individual has encouraged local residents to get pre and post spray program health screening to provide support for a tort claim against the federal and state governments. APHIS disagrees with this commentator, because our purpose and intent is not to spray humans or endanger human health. We are proposing to use a biological pesticide, to eradicate an invasive pest species. Besides causing major damage to the environment, this pest has been known to cause allergic reactions in humans. As we have stated in the EA and several places within the comments, the purpose of the proposed program is to quickly eradicate gypsy moth from the state, using the safest option for available for protecting human health (Sec E.2; pg 26). We believe the scientific and medical evidence shows that B.t.k. applied aerially will not harm humans. We disagree with the commentator on the characterization that we are knowingly harming humans and especially those who are chemically sensitive. *B.t.k.* has a long history of being used around humans and there are no scientifically credible reports that have shown it causes significant harm to humans, animals or plants. As stated in the EA and in referenced papers and websites, many countries use *B.t.k.* to control gypsy moth. For those who feel that they may need extra protection from the spray, we suggest that they follow the advice of the Oregon Department of Health, http://www.oregon.gov/DHS/ph/pesticide/btkfacts.shtml. In addition, the Oregon

department of Agriculture has provided a website with up to date information on the spray schedule, http://www.oregon.gov/ODA/PLANT/IPPM/gm_eugene_eradication09.shtml, and you can register to receive spray schedule automated phone updates, http://oda.state.or.us/dbs/ippm_registry/add.lasso.

17. We received several comments that our proposed spray program violates human rights and human rights guarantees. APHIS respectively disagrees with these comments as we are following all federal and state laws with our spray proposal. In fact, by eradicating the gypsy moth in the quickest and most effective manner, we are enhancing the environment by protecting watersheds, endangered species, and vegetation within not only the spray block but all of Eugene and the state of Oregon from the destructive actions of this pest. Protection of the environment is our goal and responsibility as an agency.

A similar comment was made that we were violating Bio Ethics parameters because we were spraying people against their will. APHIS again disagrees with that statement as we are not spraying people directly, but proposing to apply a biological pesticide, according to label instructions over an area infested with gypsy moth. There is considerable scientific information about the safety to humans, pets, and the general environment. In addition, we have received many favorable responses from people in the spray zone, and other groups concerned with the consequences of not eradicating gypsy moth from Oregon.

In addition, one comment claims our program constitutes experimentation on humans. APHIS respectively disagrees with this comment as the intent of the proposed spray program is not to spray humans but eradicate the gypsy moth. We will be applying an EPA registered formulation of B.t.k., organic Foray 48B, according to label instructions, and our treatment guidelines as described in the EA and in accordance with all applicable law. This is not an experimental chemical, but a biological pesticide whose mode of action is well known. It only affects larval forms of certain Lepidoptera species, not humans. We will be taking all necessary safety precautions including notifying the public of when the spray program is going to occur.

18. One comment said our proposed spray program violated the American with Disabilities Act and other associated acts. (The person did not state how we were violating those acts.) APHIS believes that we have complied with all federal and state regulations, Including the ADA. These efforts are summarized in the EA (Sec B; pg 13). As stated in the EA and FONSI, Foray 48B is registered by the EPA and considered not to present a significant harm to humans when applied as required under the label provisions (EA Appx C; pg 51). APHIS participated in public outreach by providing the public information concerning the gypsy moth and our proposed actions. We provided a forum for public comment at the APHIS/ODA public meeting, and provided opportunity for minorities, those with disabilities, and other disadvantaged persons to respond to

comments on our draft EA. We are providing ample notification of the dates of the aerial applications. As discussed in other questions, we are providing notification of the spray schedule via mail, telephone hotline, and on the ODA website.

19. We received several comments which said that Canada, New Zealand, and California have stopped aerial applications of *B.t.k.* because of health concerns. APHIS did follow up reviews of these reports and found them not to be accurate. Those countries either did not continue to use *B.t.k.* in their programs because the moth was eradicated, or in the case of California, ground application of *B.t.k.* was used because of endangered species concerns. California stopped aerial applications of pheromones to control LBAM not because of health risks as claimed by many of the commentators, but because of procedural problems in the assessment process. The scientific literature and conversations with governments in other countries have shown that aerial application of *B.t.k.* is considered a safe and effective method of eradicating gypsy moths. Aerial applications of *B.t.k.* on public and private land in the infested eastern states occur every year. Each eradication proposal must be judged on its own merits. We have supporting documentation listed in our EA of why we have chosen to apply *B.t.k.* aerially (Sec D.3; 20).

Several comments were received about a report out of New Zealand that concludes that aerial application of *B.t.k.* is harmful to humans. APHIS, ODA and others disagree with this report as it is does not hold up to scientific review in that it draws its conclusions primarily from anecdotal statements. Unlike the reports cited and summarized in the EA (Sec E.2; pg 26), this report was not a peer review journal and no control procedures were in place prior to the exposure period. This is important in a creditable medical research paper for establishing a base-line condition of the of the test group in question. This anecdotal review from New Zealand is unlike the studies done in Canada where cultures were taken before and after the season looking for *B.t.k.* APHIS, ODA and Department of Human Services have all concluded that the scientific evidence is strong that aerial applications of *B.t.k.* present no hazard to healthy humans.

20. We received a comment stating that we did not notify the public properly about the availability of the EA and a chance for the public to comment on our proposed action. APHIS disagrees with this assessment of our commitment to fulfill the federal obligations under NEPA. We took necessary steps to properly engage the public in our assessment of the proposed action. On February 3, 2009, working with APHIS, ODA sent out over 1700 letters to all the addresses within the proposed spray block, plus all those within ¼ mile of the boundary, to notify potentially affected citizens about the public meeting and the availability of the draft EA and 30 day comment period. The draft EA and a cover letter requesting comments was sent to over 40 groups, agencies and persons that have expressed an interest in gypsy moth programs in the past. In addition, at the well attended public meeting, the availability of the EA and our desire for

comments was announced. We extended the comment period past 30 days at the request of the Mayor of Eugene. APHIS still accepted comments even after the official comment period ended. Previously, through the ODA field staff, contact was made with community leaders starting in September 2008 informing them that gypsy moths had been found in the area and of the possibility of some type of control program as a result. The success of our APHIS/ODA outreach program can be seen in the large number of comments received, more than received in the last five spray programs.

We have also engaged the Oregon Department of Public Health. As noted elsewhere, they have put together a fact sheet providing information about the health concerns of *B.t.k.* APHIS will post in the local newspaper, The Eugene Register-Guard, notice of the availability of the FONSI and final EA. These documents will be viewable on both the APHIS national website and on the ODA Plant Division website. APHIS believes that by working with ODA, especially their local field staff, we are better serving the community by using resources with which they are familiar and have a close connection. ODA is our partner in many areas of pest detection and eradication. We complement each other's strengths including a connection with the public which provides the necessary venues to communicate their opinions and needs to us.

21. We received several comments that we had our minds made up before the draft EA was published and we do not listen to the people in the community, even that the spray contract has been awarded before the EA process is complete. APHIS disagrees with this comment since the EA considers in detail several eradication options as well as a no treatment option (Sec D-E; pg 19 -33). The latest scientific evidence was researched to find various ways this gypsy moth infestation may be eradicated. By working with the ODA, APHIS has actively sought community comments and explored their concerns. All of the concerns and questions expressed in the over 50 comments we have received are answered here and in the EA Appendix E (pg 88). While we have a history of success using *B.t.k.* to eradicate gypsy moth from Oregon we use the EA process to study all site specific aspects before a final determination is made.

APHIS feels the response made on our behalf by Dr. Dan Hilburn, ODA Plant Division Director, to address concerns of the Mayor of Eugene as a result of negative feedback on the proposed project after the public meeting, demonstrate our commitment and desire to seek and listen to community input on these eradication programs: "

My name is Dan Hilburn, I'm the Administrator of ODA's Plant Division including the Insect Pest Prevention and Management section. I've been involved with gypsy moth projects in Oregon for nineteen years in roles ranging from weather balloon holder to aerial observer, safety officer, and project manager. In recent years I've been answering the hotline phone calls. There are several points I'd like to make about the current discussion.

First, we value the input of residents, the public and civic leaders. We send mailings to affected neighborhoods and hold public meetings to inform the residents about what the proposed plan is and listen to their concerns and ideas for improvements. We're very interested in making this project as safe and easy as possible for the residents, but not doing it at all is not an option.

Often we can modify the proposed plan to address concerns. Over the years we have changed flight paths due to concerns about horses, emus, and eagles. We've modified timing to avoid conflicts with school buses. We researched potential conflicts with outdoor pickle brining vats! On projects where we have used chemical pesticides, we've covered fishponds, organic gardens, and vintage cars. We once modified a treatment schedule to avoid a local blackberry festival. We've extended comment periods and had follow-up meetings. If you or other interested parties have ideas to improve this project, we'd be happy to discuss them.

We sent out 1700 letters to residents in and around the treatment area earlier this winter and met with the local neighborhood association before the recent public meeting. Only a small percentage of the comments we've received so far have come from those residents. Most of the people who have commented are not from the area, are not familiar with the details of what we're planning to do, and don't seem to understand its importance. They have equated gypsy moth eradication with B.t. to aerial spraying of toxic chemicals for nuisance pest suppression; this is not accurate and not helpful.

The local situation is assessed so we can design the best possible treatment plan with the least possible interference to residents. We examine the catch pattern, look for move-ins, and attempt to determine the source of introduction. We note schools, daycare centers, parks, and high-tension wires. We look for conflicts with threatened and endangered species. Finally, we consider all options for how to achieve eradication."

APHIS and ODA elicited comments from government and university experts and local citizens during the scoping phase of this assessment process. The draft EA was made available for public comment, and a public meeting was held in the local area to inform the public and invite additional comments. Those comments have now all been considered and addressed. As a result of comments received, we plan to implement program guidelines to lessen human exposure, including school children and early morning commuters. Measures will be taken avoid spraying over water resources and to protect non-target species. A special survey was done to determine whether an endangered butterfly and its endangered host plant occur in the area. This FONSI represents the final determination based on this site specific assessment. No contract for eradication activities will be awarded until this signed FONSI is made public.

One specific example of our listening to community comments regards concerns about potential exposure of school children to aerial applications of pesticides. We received several comments concerning spraying children waiting at bus stops or spraying schools while in session. APHIS and ODA both have concerns about meeting the community's expectations for the care of their children by public agencies. Schools have been alerted to the spray schedule and will be kept informed about any changes. The spray will be completed before school is in session, and should be completed before children will be at bus stops or the busses are running on their routes.. Ground personnel will be in the area watching for school children during the application period. They will have radio contact with the spray helicopter so those areas can be avoided while children are present.