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Asian Longhorned Beetle Cooperative Eradication Program in the New York Metropolitan Area

**Environmental Assessment
May 2007**

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Table of Contents

I. Introduction	1
A. Biology	1
B. Purpose and Need	2
II. Alternatives.....	3
A. No Action	3
B. Preferred Alternative	3
III. Environmental Impacts.....	5
A. No Action	5
B. Preferred Alternative	5
C. Threatened and Endangered Species.....	6
D. Other Considerations	7
IV. Listing of Agencies and Persons Consulted.....	8
V. References	9

I. Introduction

After the discovery, in 1996, of Asian longhorned beetles (*Anoplophora glabripennis*) (ALB) on several species of hardwood trees in Brooklyn, New York, the Secretary of Agriculture declared an emergency in order to combat the infestation with regulatory and control actions. ALB is believed to have been introduced into the United States from wood pallets and other wood packing material accompanying cargo shipments from Asia. The native range of the ALB includes China and Korea.

The initial beetle infestation in Brooklyn, New York, spread to Long Island, Queens, and Manhattan. In 1998, a separate introduction of the beetle was discovered on trees in Chicago, Illinois, and subsequently in surrounding suburbs. Beetles were also detected in two separate New Jersey locations—in Jersey City in 2002 and in Middlesex/Union counties in 2004. More recently it has been found in Richmond County, New York (Staten Island), across the Arthur Kill River from the Middlesex/Union Counties infestation. Currently, USDA-APHIS' Plant Protection and Quarantine (PPQ) is implementing quarantine and control strategies in New York, Illinois, and New Jersey that seek to eradicate this serious pest from the United States. The Illinois quarantine was removed in 2006 since no infested trees have been detected since 2003 (IDA, 2006). Eradication is projected in Illinois for 2008.

A. Biology

The ALB is classified in the wood boring beetle family, Cerambycidae. Adults are 1 to 1 ½ inches in length with long antennae and are shiny black with small white markings on the body and antennae. After mating, adult females chew depressions into the bark of various hardwood tree species in which they lay (oviposit) their eggs. The host trees that the ALB infests include: maple and box elder, elm, horsechestnut, willow, birch, poplar, ash, London plane and sycamore, European mountain ash, mimosa (silk tree), and hackberry.

Once the eggs hatch, small white larvae bore their way through the bark into the tree, feeding on the sensitive vascular layer beneath. The larvae continue to feed deeper into the tree's heartwood forming tunnels, or galleries, in the trunk and branches. This damage weakens the integrity of the tree and will eventually kill it if the infestation is severe enough. Heavy sap flow may occur from the damaged sites on the tree caused by the larval tunneling and feeding. Sawdust debris (or frass) is commonly found on the base of afflicted trees as well.

Infested trees are also prone to secondary attack by other diseases and insects.

Over the course of a year, a larva will mature and then pupate near the surface of the tree, under the bark. From the pupa an adult beetle emerges, chewing its way out of the tree, forming characteristic round holes approximately 3/8ths of an inch in diameter. The emergence of beetles typically takes place from June through October with adults then flying in search of mates and new egg-laying sites to complete their life cycle.

B. Purpose and Need

APHIS has responsibility for taking actions to exclude, eradicate, and/or control plant pests, including Asian longhorned beetle, under the Plant Protection Act (7 United States Code (U.S.C.) 104). APHIS has been delegated the authority to administer this act and has promulgated Quarantines and Regulations (7 Code of Federal Regulations (CFR) 319) which regulate the importation of commodities and means of conveyance.

The current exclusion and eradication program consists of various regulations designed to require treatment of wood articles and packing materials to eliminate ALB. The approach has been effective at preventing new infestations from imported wood items. Eradication and containment of existing populations is difficult and expensive. Effective elimination of the beetle by removal of infested host plants depends upon early detection, timely identification of infestations in trees, and cutting the host trees within a defined radius around any infested tree before the beetle can disperse farther. Small infestations that are detected early may be eradicated relatively easily, but several small infestations in a localized area are more difficult to eliminate, as are infestations that have gone undetected and untreated for several years. In addition to cutting and removal of host trees within a defined radius around an infested tree, the program also employs chemical methods to prevent infestation of healthy trees from adult beetles, thereby preventing further dispersal of the infestation.

This environmental assessment (EA) considers the potential environmental impacts of the Asian Longhorned Beetle Cooperative Eradication Program in the New York metropolitan area (as defined by the Census Bureau as the New York, Northern New Jersey, Long Island area—New York, New Jersey, Connecticut, Pennsylvania). This EA has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321–4327) and its implementing regulations.

APHIS has prepared three other EAs that are relevant to this current EA: Asian Longhorned Beetle Control Program (December, 1996), Asian Longhorned Beetle Program (February, 2000), and Asian Longhorned Beetle Cooperative Eradication Program, Hudson County, New Jersey (March, 2003). This current EA is tiered to the three previous EAs, and, thereby, incorporates the analysis in the other EAs by reference.

II. Alternatives

This EA analyzes the potential environmental consequences associated with the proposed action to eradicate ALB from the New York metropolitan area. Two alternatives are being considered: (1) no action by APHIS to treat new infestations of ALB in the New York metropolitan area, and (2) the preferred alternative which includes quarantine, cutting of ALB host trees within a defined area followed by chipping or burning, and chemical injections of soil or host trees outside the cutting and chipping or burning zone in any new areas within the New York metropolitan area where ALB has been detected.

A. No Action

Under the no action alternative, APHIS would continue to implement the quarantine restrictions in areas as defined in 7 CFR 301.51–3. Surveys and treatments of these areas would continue; however, any new ALB finds, including the recent find in Richmond County, New York, would not be treated by APHIS. Some control measures could be taken by other Federal or non-Federal entities; however, these measures would not be controlled or funded by APHIS.

B. Preferred Alternative

Under the preferred alternative, APHIS, in cooperation with the States within the New York metropolitan area, would implement an eradication program to rid ALB from any new finds in the New York metropolitan area, including Richmond County, New York. The eradication program will consist of adding any new areas to the ALB quarantine area, cutting ALB host trees within a defined area followed by chipping or burning, and treating soil or host trees within a certain zone with imidacloprid.

The ALB eradication program is an adaptive management program that is based upon the strategic plan that was developed by APHIS and its cooperating partners in 2005 (APHIS, 2005). As experience dictates, the need for minor changes in the program can be incorporated to maximize the effectiveness of the eradication efforts

without having to complete extensive environmental documentation. If, however, the changes are not minor, such as a change in chemicals or use of a different technology, additional environmental documentation will be required.

The current quarantine restricts the movement of firewood, green lumber, and other living, dead, cut, or fallen material including nursery stock, logs, stumps, roots, and branches from potential host trees. These articles may not move outside the quarantine zone unless they are issued a certificate by an APHIS or State cooperating inspector. The new area in Richmond County would add approximately 8-square miles to the current quarantine zone. If additional new finds of ALB are made, areas around them will also be quarantined.

Surveys are made of all host trees within a designated area of an infested tree to insure that they are not infested with ALB. Control actions include host removal, destruction through chipping or burning, and chemical treatments. A radius will be defined for the area of cutting and chemical treatment. ALB host trees located closest to an ALB find will be cut and either chipped or burned. Chemical treatments will be used in areas outside this cutting and chipping or burning area. Destruction through chipping must ensure that the chips are to a size that kills the beetle or beetle larvae. Chemical treatments with imidacloprid are made through direct injection either into the tree trunk or into the soil immediately surrounding the tree. The rate of imidacloprid depends on the application as well as the diameter (measured as diameter at breast height (dbh)) of the host tree.

The designated area is defined according to the ability of ALB to spread in the area. This can vary depending on the percentage of host trees in the area and density of trees. Treatment options may vary depending on the environmental conditions in the area of an ALB find (i.e., soil composition, density of trees, and so on).

The proposed eradication efforts in parts of Staten Island will be limited to direct trunk chemical injections due to concerns of runoff that may occur in the sandy soil. In addition, given the low density of trees in the area and the percentage of host trees (40 percent), a defined radius of 0.5 miles from an infested tree was determined for the cutting zone and 0.5- to 1-mile defined radius from an infested tree was designated for chemical treatment.

III. Environmental Impacts

A. No Action

Environmental impacts from the no action alternative are related to the damage caused by the establishment and spread of ALB. The potential establishment would cause damage to and loss of valuable ornamental and commercial trees, as well as naturalized and forested areas. If ALB were allowed to spread to other parts of the country, it could result in damage to commercial trees as well as their tree products, such as maple syrup and hardwood lumber.

The wide distribution of host plants suggests the danger of ALB spread across much of the country with increases in damage and losses commensurate with the spread. The damage and losses could result in reduction of private property value. There would be changes in composition and age structure of forests which could have long-term effects on the ecological relationships in the naturalized and forested areas.

As ALB continues to spread, other Federal agencies or non-Federal entities may try to control or eradicate ALB through the use of chemical treatments. There are elevated environmental risks from uncoordinated application of pesticides to limit the damage from ALB.

B. Preferred Alternative

Under the preferred alternative, areas found to have ALB will be quarantined and treated using cutting and chemical treatments. The quarantine itself will have no environmental effects, although it can limit industry that relies on transporting host trees and their products outside the quarantine zone. However, this limit does not outweigh the risks to industry if ALB is allowed to establish and spread into new areas.

The cutting (removal) of susceptible host plants within a defined radius of an ALB find may have adverse effects on local wildlife that depend on vegetation for food, cover, and related needs. This is particularly true for some invertebrates and other animals that have a limited foraging range. The primary issue to humans from loss of plants is aesthetic. The impacts on environmental quality from the removal of host trees are expected to be negligible. Only trees that are known to be hosts for ALB will be tagged for cutting and chipping or burning. This will limit the environmental effects of the cutting area.

The use of imidacloprid to treat host trees within a defined radius outside the cutting and chipping or burning area from an ALB find was examined in the February, 2000 and March, 2003 Asian longhorned beetle EAs. These EAs discussed the toxicity data, environmental fate and exposure, and risk of adverse effects to the environment (USDA, 2000; USDA, 2003). The method of direct injection into the trunk of the tree or soil application of imidacloprid is not expected to volatilize into the atmosphere, leach into the groundwater, or be carried to surface water. Only host trees will be treated and there will be no harm to these trees with the injection itself. The soil and plant residues are expected to remain active for up to 1 year to protect the trees from infestation.

Nontarget insects that feed on treated trees and are directly exposed to imidacloprid would be expected to decrease temporarily until the residues decrease and recolonization occurs from surrounding areas. Reduction in insects may require insectivores to forage farther; however, this increase in forage effort is not expected to be significant because only susceptible trees will be treated. Non-host plants will not be treated and neither will aquatic areas; therefore, reduction of insect forage should be limited.

Human health effects associated with the administration of imidacloprid will be mitigated through the adherence to pesticide label requirements and standard operating procedures. The required protective gear and safety precautions minimize exposure. A more detailed evaluation of human exposure can be found in the February, 2000 and March, 2003 EAs.

Cumulative effects based on the preferred alternative are not anticipated. The effects from the quarantine, cutting, and chemical treatments are short-lived (USDA, 2003). In addition, the use of imidacloprid under the preferred action is not expected to result in accumulation in the soil, water, or the tree itself.

C. Threatened and Endangered Species

The endangered shortnose sturgeon is the only federally listed endangered or threatened species in the area. It is found in the Hudson River from the southern tip of Manhattan (at river mile 0) upriver to the Federal Dam at Troy (river mile 152). It is not found in the waters of Richmond County, New York (Staten Island); therefore, there is no effect from the proposed ALB eradication program in Richmond County to any endangered or threatened species. If another infestation of ALB were to be found in the New York metropolitan area and listed species could be impacted before an eradication program were put into

place, APHIS would work with the U.S. Fish and Wildlife Service to ensure compliance with the Endangered Species Act.

D. Other Considerations

Executive Order (EO) 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations,” focuses Federal attention on the environmental and human health conditions of minority and low-income communities and promotes community access to public information and public participation in matters relating to human health or the environment. This EO requires Federal agencies to conduct their programs, policies, and activities that substantially affect human health or the environment in a manner so as not to exclude persons and populations from participation in or benefiting from such programs. It also enforces existing statutes to prevent minority and low-income communities from being subjected to disproportionately high or adverse human health or environmental effects. The environmental and human health effects from the proposed applications are expected to be minimal and are not expected to have disproportionate adverse effects to any minority or low-income family.

EO 13045, “Protection of Children from Environmental Health Risks and Safety Risks,” acknowledges that children, as compared to adults, may suffer disproportionately from environmental health and safety risks because of developmental stage, greater metabolic activity levels, and behavior patterns. This EO (to the extent permitted by law and consistent with the agency’s mission) requires each Federal agency to identify, assess, and address environmental health risks and safety risks that may disproportionately affect children. The program applications are made directly to trees which may occur in parks and residential areas where children would be expected to play and climb trees; however, the program applicators ensure that the general public is not in or around areas being treated, so no exposure will occur for trunk or soil injection applications. Therefore, no disproportionate effects on children are anticipated as a consequence of implementing the preferred alternative.

IV. Listing of Agencies and Persons Consulted

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Emergency and Domestic Programs
4700 River Road, Unit 137
Riverdale, MD 20737

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Environmental Compliance
4700 River Road, Unit 150
Riverdale, MD 20737

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Environmental Services
4700 River Road, Unit 149
Riverdale, MD 20737

USDA-APHIS-PPQ
ALB Eradication Program
920 Main Campus Drive, Suite 200
Raleigh, NC 27606

V. References

IDA—See Illinois Department of Agriculture

Illinois Department of Agriculture, 2006. Gov. Blagojevich Proclaims July 12 Asian Longhorned Beetle Deregulation Day. July, 2006. Springfield, IL.

USDA—See United States Department of Agriculture

United States Department of Agriculture, Animal and Plant Health Inspection Service, 1996. Asian Longhorned Beetle Control Program. December, 1996. Riverdale, MD

United States Department of Agriculture, Animal and Plant Health Inspection Service, 2000. Asian Longhorned Beetle Program. February, 2000. Riverdale, MD

United States Department of Agriculture, Animal and Plant Health Inspection Service, 2003. Asian Longhorned Beetle Cooperative Eradication Program Hudson County, New Jersey. March, 2003. Riverdale, MD

Finding of No Significant Impact
Asian Longhorned Beetle Cooperative Eradication Program
in the New York Metropolitan Area
Environmental Assessment
May 2007

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), has prepared an environmental assessment (EA) for eradication of Asian longhorned beetle (ALB) from the new site in Richmond County and for any additional sites in the New York metropolitan area where ALB may be found in the future. The EA is available from:

U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Plant Protection and Quarantine
Surveillance and Emergency Programs
Planning and Coordination
4700 River Road, Unit 137
Riverdale, MD 20737-1229

The EA analyzed two alternatives: no action alternative and the preferred alternative. The preferred alternative specifies any new area would be added to the quarantine area. In addition, the preferred alternative calls for control activities that include removal and chipping or burning of ALB host trees in the immediate vicinity of a new find, and ALB host trees within a certain zone would be treated with either a chemical trunk injection or chemical soil application of imidacloprid. Control activities for the new find in Richmond County will consist of host removal and chipping of all host trees found within 0.5 miles of the ALB find, and trunk injection with imidacloprid of all host trees found from 0.5 to 1 mile from the ALB find. Based on the analysis in the EA, I have selected the preferred alternative of quarantine, removal, and chemical trunk injection because of the feasibility to implement the program to meet the pest eradication objectives and it provides lower overall risk to human health and the natural environment than the no action alternative.

APHIS considered the potential environmental consequences of each alternative in the EA. Based on this analysis, APHIS has determined that there would be no significant impact on the quality of the human environment from the implementation of the preferred alternative. APHIS' finding of no significant impact from the preferred alternative is based on past experience with ALB treatments in the New York metropolitan area, the application of standard operating procedures for the applications, and the expected environmental consequences, as analyzed in the EA. APHIS will continue to evaluate and consult, where appropriate, with the U.S. Fish and Wildlife Service to ensure that this program will have no adverse effects on endangered and threatened species if ALB is found in any new areas in the future.

In addition, I find the preferred alternative of expanding the quarantine area, removal and chipping or burning of host trees, and chemically treating host trees with either a soil application or trunk injection to be entirely consistent with the principles of environmental justice as expressed in Executive Order 12898. Implementation of the preferred alternative will not result in any disproportionately high adverse human health or environmental effects on any minority populations and low-income populations. In addition, the preferred alternative is consistent with

Executive Order 13045 "Protection of Children from Environmental Health Risks and Safety Risks." There will be no disproportionate effects to the environmental health and safety of children with the implementation of this program. Lastly, because I have not found evidence of significant environmental impacts associated with the proposed program, I further find that an environmental impact statement does not need to be prepared and that the program may proceed.



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Plant Protection and Quarantine
Animal and Plant Health Inspection Service

05/22/2007

Date