Asian Longhorned Beetle (ALB) Anoplophora glabripennis
Advancements in Eradication Program

Status of ALB: United States
- Declared eradication of infestations in Chicago, IL, and Jersey City, NJ, in 2008
- 271 square miles currently regulated for ALB in the United States
  - New York (142); New Jersey (25); Massachusetts (104)

Status of ALB: New York
- Regulated area—142 square miles
- Surveys—inspections continue; only small pockets of infestation have been detected in the last few years; Islip is scheduled for eradication in 2011, pending final survey results
- Detections—729 infested trees
- Removals—18,467 infested and high-risk host trees
- Treatments—preventative chemical applications were finished in 2009

Status of ALB: New Jersey
- Regulated area—25 square miles
- Surveys—last detection was in 2006; inspections continue to confirm ALB has been eradicated
- Detections—729 infested trees
- Removals—21,961 infested and high-risk host trees
- Treatments—preventative chemical applications were finished in 2009

Status of ALB: Massachusetts
- Regulated area—104 square miles
- Surveys—inspections continue; over 720,000 host trees have been surveyed
- Detections—over 19,000 infested trees
- Removals—over 28,000 infested and high-risk host trees
- Treatments—44,100 trees in 2010

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Impact Industries
- ALB has the potential to be one of the most destructive and costly invasive species to enter the United States. Industries at risk include timber export, saw logs, fuel wood, nursery stock, lumber and veneer, pulp and paper, home construction, plywood, firewood, fine furniture and cabinet making, maple syrup, and fall foliage tourism.

Eradication Strategy
The goal of the ALB program is to eradicate the pest in the United States to protect the hardwood forests of North America. To achieve this goal, the ALB program has developed and implemented eradication protocols, an area-wide, science-based strategy.

- **Exclusion**
  - December 17, 1998—The USDA published an interim rule in the Federal Register requiring that all cargo containing solid wood packing material (SWPM) leaving Chinese ports on or after December 17, 1998, be certified by the Chinese Government as heat-treated, fumigated, or treated with preservatives prior to arrival in the United States.
  - July 5, 2006—Full enforcement on all articles of regulated wood packaging materials (WPM) entering the United States and North America. Shipments containing noncompliant regulated WPM will not be allowed to enter the United States.

- **International Standards for Phytosanitary Measures (ISPM 15)**
- Visual survey of host trees
  - Surveys are conducted by climbers, ground crews, or bucket trucks
  - There are no traps or lures available to attract ALB
  - Four negative surveys are required to declare eradication in an area

- **Tree removal**
  - Infested trees are removed
  - Exposed host trees may be removed to further reduce populations
  - Removed trees must be chipped to become deregulated material

- **Chemical treatment**
  - Exposed host trees treated for a minimum of 3 consecutive years to prevent infestation and reduce ALB populations
  - Regulatory activities to prevent the pest’s spread
    - Enforce the quarantine to keep potentially infested materials from leaving the infested area
    - Educate local tree care companies and other industries that work with regulated items about ALB regulations
    - Issue compliance agreements to companies to ensure regulated materials are handled appropriately within the infested areas

- **Replanting to mitigate effects of trees lost to ALB**

- **Outreach efforts**
  - To educate the public and industry about the ALB, obtain their assistance in looking for the beetle, and gain their cooperation while carrying out program activities
  - Besides standard program outreach, in 2009 and 2010, a Forest Pest Outreach and Survey Project was initiated in northeastern States to raise awareness about ALB, as well as a Volunteer Survey Initiative in several eastern States, engaging member organizations to survey for ALB.

- **Aging studies of infested trees**
  - To determine the first year of infestation
  - Studies have shown that infestations remain localized for the first 4 years, and then populations disperse

- **New studies under development**
  - Forestry technologies for nursery stock, logs, and firewood
  - Fall chemical treatments
  - Pesticide options for chemical treatment

Methods Development
- **Science-based eradication protocols**
  - Biology and population dynamics

- **New technologies for chemical control**
  - Basal soil injection
  - Low-pressure trunk injection
  - Ecojet capsule injection—operational pilot

- **DNA analysis of populations**
  - To assist in determining the origin of infestations

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- Detections—over 19,000 infested trees
- Removals—over 28,000 infested and high-risk host trees
- Treatments—62,320 trees in 2010

Biological and Ecological Parameters
- **Origin:** Native pest of Asia
- **Distribution:** Populations have also been detected in Canada, Austria, France, Italy, Germany, the United Kingdom, and the Netherlands
- **Host Range:** In the United States, the known ALB hosts include all species of 12 tree genera
  - Includes maple, willow, elm, birch, horse chestnut, poplar, ash, London plane, mimosa, European mountain ash, hackberry, and katsura
- **Life Cycle:**
  - Females can deposit 35 to 90 eggs
  - Larvae bore through bark and feed on the vascular layer beneath and continue to feed deeper into the tree’s heartwood
  - Larva into an adult and chews its way out of the tree
  - Beetle emergence typically takes place from June through October, with adults searching for mates and new egg-laying sites to complete their year-long life cycle
- **Damage:** ALB infestations weaken and eventually kill healthy trees by tunneling into the heartwood and then back to the surface during the pest’s life cycle, which cuts off nutrient flow and weakens the structural integrity of the tree.

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