

The Asian Longhorned Beetle: National and International Research Efforts

Robert Haack, Therese Poland, Toby Petrice, and Matt Gennrich

US Dept. Agriculture, Forest Service, North Central Research Station, 1407 S. Harrison Rd., East Lansing, MI 48823, USA; E-mail: rhaack@fs.fed.us

Established populations of the Asian longhorned beetle, *Anoplophora glabripennis*, were first discovered in New York City in 1996 and then in Chicago in 1998. Because of the limited number and size of infestations discovered in 1996, the US Department of Agriculture (USDA) initiated an eradication program that requires cutting and chipping of all infested trees. As of September 2000, more than 4800 infested trees have been cut in New York and more than 1400 in Chicago.

The native range of *A. glabripennis* includes China and Korea. In China, the primary hosts of *A. glabripennis* include species of maple (*Acer*), poplar (*Populus*), willow (*Salix*), and elm (*Ulmus*). Occasional hosts in China include chinaberry (*Melia*), mulberry (*Morus*), plum (*Prunus*), and pear (*Pyrus*). In Chicago and New York, *A. glabripennis* has attacked primarily species of maple, including boxelder (*Acer negundo*), Norway maple (*Acer platanoides*), sycamore maple (*Acer pseudoplatanus*), red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), and sugar maple (*Acer saccharum*). In addition, *A. glabripennis* has also completed development on one or more species of horsechestnut (*Aesculus hippocastanum*), birch (*Betula*), ash (*Fraxinus*), Rose-of-Sharon (*Hibiscus*), poplar, willow, and elm.

Several research programs have been initiated on *A. glabripennis* by federal and university researchers in the US. The principal federal agencies include USDA APHIS (Animal and Plant Health Inspection Service), USDA ARS (Agricultural Research Service), and USDA Forest Service. Similarly, the principal US universities include Cornell University, Michigan State University, Penn State University, State University of New York-Syracuse, University of Illinois, and the University of Vermont. Most of the studies in the US are being conducted in quarantine laboratories where *A. glabripennis* can be handled and studied safely. These studies cover many aspects of the beetle's biology such as development, fecundity, host preference, flight behavior, rearing techniques, pheromones, insecticides, microbial control, and genetic relatedness of *A. glabripennis* populations in the US. A few studies are being conducted in the affected areas of Chicago and New York, such as determining the direction and rate of beetle spread, the within-tree attack pattern, and community reactions to the eradication efforts. Other studies are aimed at acoustic detection of larval feeding noises in trees and wood treatment techniques using fumigants, heat, and microwaves. Still other studies are being conducted in China in cooperation with the Chinese Academy of Forestry, Beijing Forestry University, and the Chinese Inspection and Quarantine Agency. The main areas of study in China deal with aspects of chemical control, adult dispersal, mating behavior, biological control, host range, rate of spread, and wood treatment technologies. In addition, research on *A. glabripennis* was initiated in Canada at the Canadian Forest Service quarantine lab in Sault Ste. Marie in 2000. Initial studies in Canada focused on cold-hardiness of *A. glabripennis*.

North Central Forest Pest Workshop

September 25-28, 2000
Rhineland, Wisconsin

ABSTRACTS



**Wisconsin Northwoods
With a million colors and a million values**

Implementation of the best forest pest management
to protect our forest resource