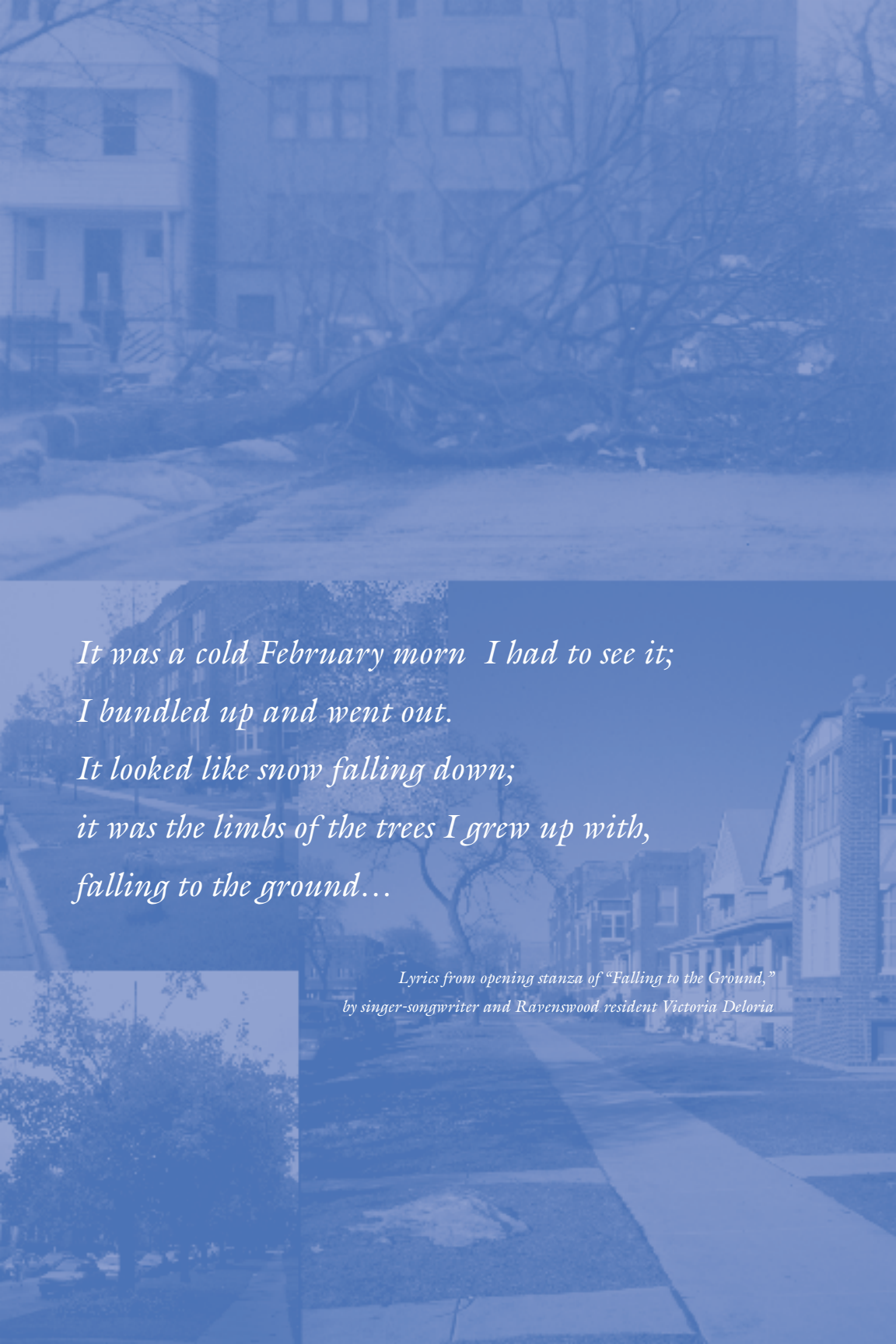
Chicago vs. The Asian Longhorned Beetle:

A Portrait of Success

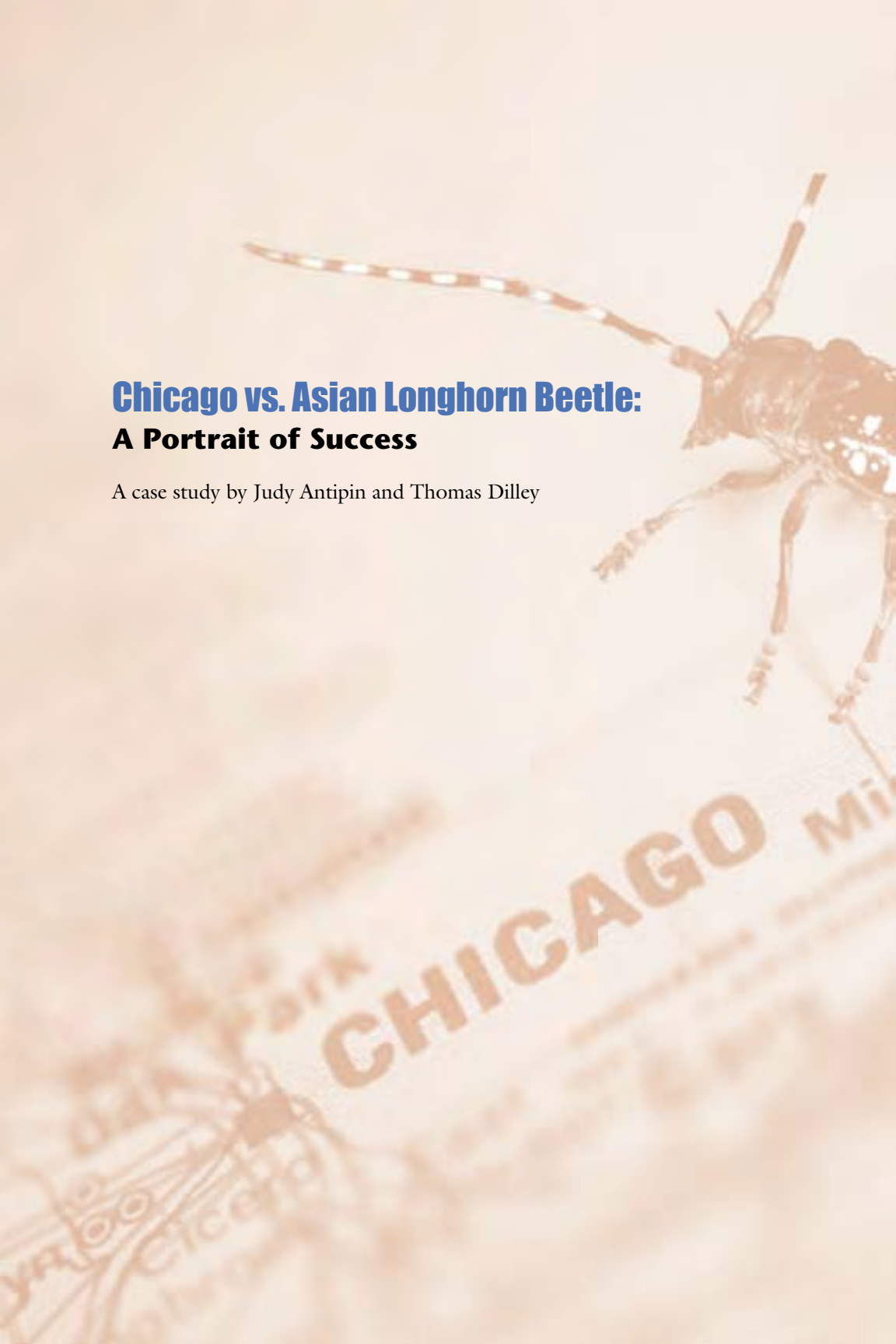


It was a cold February morn I had to see it;
I bundled up and went out.
It looked like snow falling down;
it was the limbs of the trees I grew up with,
falling to the ground…

Lyrics from opening stanza of "Falling to the Ground,"
by singer-songwriter and Ravenswood resident Victoria Deloria

Chicago vs. Asian Longhorn Beetle:
A Portrait of Success

A case study by Judy Antipin and Thomas Dilley



Chicago vs. The Asian Longhorned Beetle:

A Portrait of Success

Our job in the Federal Government, with our cooperators in the State Departments of Agriculture and Forestry, is to get information into the hands of the public, so that they will know what they're looking for, why they're looking for it, and what could happen if we don't find it.

Kenneth Knauer, Ph.D., USDA Forest Service Northeastern Area, State & Private Forestry, Assistant Director for Forest Health and Economics

The principal objective in conducting and publishing this case study of the Asian longhorned beetle (ALB) infestation in Chicago is to offer State and local government officials and interested community members a blueprint for recognizing and effectively dealing with invasive/exotic insect pest emergencies. The experience of the past decade shows that appearances of these unwelcome and dangerous tree pests are on the rise. Urban and suburban forests have so far borne the brunt of this onslaught, but without diligent campaigns of detection and eradication, all of the Nation's forests are at risk.

Our experience with the Asian longhorned beetle suggested that there was a lesson we could share with other communities that might be confronted by the invasion of an exotic species, particularly ones threatening their trees. As international trade intensifies, there will be more incidents of exotic pests coming to North America. We've had numerous examples since the Asian longhorned beetle incident—most recently, the emerald ash borer in Michigan.

The key to our success in eliminating exotic invasive pests is early detection, and early detection depends on the cooperation and the participation of State and local governments, as well as the public and the landowners who have day-to-day interaction with the tree resource.

Kenneth Knauer

The history of invasive tree pest species in the United States over the past several decades has shown that urban and well-populated suburban areas are at the highest risk for invasive tree pest emergencies, and that all communities meeting this profile should be prepared to deal with such an event.

Several factors make these areas more at risk than rural or dense woodland areas:

1. Most invasive/exotic pests arrive in this country as "hitchhikers" on imported goods or their packaging. Businesses that import such goods are most likely to be located in more populated areas.

2. The chances of spreading the pest from one area to another are greater in urban areas than in dense forest land because of greater possibility of human intervention (for example, the unintentional transport of infested wood from one area to another in vehicles, both for commercial and personal use).

3. Trees in more populated areas are subject to greater environmental stress to begin with, making them easier prey for exotic insects and more likely to succumb to damage.

The losses from tree pests are both monetary and environmental. An article published by the USDA Animal and Plant Health Inspection Service (APHIS) in 2001 estimated that the ALB "has the potential to damage such industries as lumber, maple syrup, nursery, commercial fruit, and tourism accumulating over $41 billion in losses." In 1999, invasive or nonindigenous tree pest species were already estimated to cost the United States $2.1 billion a year (Pimentel, Lach, et al. 1999).

The economic threat to industries that depend on healthy trees and forests is evident, but some of the biggest environmental and financial impact has been in urban and suburban interface areas. In such areas already impacted by ALB, the cost in quality of life to residents has been tangible.

In 1998, Gina Bader, a resident of the Ravenswood section of Chicago, took photographs documenting the cutting of a number of ALB-infested trees on the streets surrounding her home. Many of the trees, Bader noted, had been planted to replace trees killed by the Dutch elm disease epidemic nearly 50 years ago.

In February of 1999, workers chopped down this large ALB-infested tree in front of the Ravenswood home where Gina Bader lived
Photo by Gina Bader

The tree in front of her home, a converted three-unit apartment building, had grown to more than three stories in height during that time period, she remembered, only to be felled by the ALB.

> *Actually in our neighborhood we could tell because it was much sunnier. I live on the first floor but we noticed the difference without several trees that were in the front of the building. And I'm sure the people on the third floor experienced a lot more heat.*
>
> *It was actually noisier because I don't live too far from the elevated (el) train and we could hear the train more often because the trees blocked the sound of the train going by. So it has definitely affected us in a physical way. And in the summertime when it's really hot, and you want to look for a shady parking space, they are not as available on our streets anymore.*
>
> *All the birds and the squirrels in the trees were affected. And so it was really powerful to see how much the trees play an important role. I mean I knew that, of course, but to actually feel it in my life happening was really powerful and moving.*

Bader also noted that the trees lost to ALB have been replaced, with the help of local, State, and Federal authorities. That restoration program has gone a long way toward helping the community feel whole again, she added, a statement echoed by others interviewed for this study.

Gina Bader looking at leaves on the tree that replaced the one lost to ALB

Chicago was the second city in the country to experience an ALB infestation. In 1996, the insect was found devouring trees in Brooklyn, NY, and in the 2 years before the Chicago discovery, ALB infestations were discovered in three of the five New York City boroughs, and in Nassau and Suffolk counties on Long Island, NY. For a variety of reasons, combating ALB in New York has proven more difficult than in Chicago, acknowledges Christine Markham, USDA APHIS National ALB Program Director.

Part of the advantage that Chicago had was that we knew more about the insect and how to approach it. It was 2 years after the discovery of ALB in the United States that the exotic pest was detected in Chicago. During those 2 years, Federal agencies learned more about the biology of the ALB, and developed several methods of control.

Right from the very beginning the Chicago people organized themselves, and they were a united front with all the entities that were a part of the program. The attitude was "This is our approach, this is our goal, we're going to eradicate this pest from our city." I believe that has been the key to the success of the program in Illinois.

Christine Markham

The discovery of the Chicago infestation also brought the ALB, and the issue of invasive pests in general, into the national spotlight. With Chicago under attack, the beetle was no longer simply an isolated East Coast problem.

The New York infestation in 1996 was probably more localized or regional in nature; it just hadn't really turned into a national issue. As soon as ALB showed up in Chicago, now we have two sites in two different parts of the country, now it began to hit the headlines—this was not a New York City problem or an East Coast problem—we're looking at a problem that's potentially national in scope, and that really did invigorate the media to pay attention, as well as the Federal agencies, too.

Noel Schneeberger,
USDA Forest Service Northeastern Area, State and Private Forestry,
Program Coordinator for Forest Health and Economics

Noel Schneeberger

The estimated value of Chicago tree resources at risk from ALB is $1.2 billion. This represents 2,500,000 trees or 61 percent of the city's tree canopy. (Nowak et al. 2001)

Barry Albach

History of ALB in Chicago

When the Asian longhorned beetle first appeared in Chicago in 1998, the certified arborists in our Department of Streets and Sanitation's Bureau of Forestry were only too well aware of the devastation this insidious pest had wrought on the urban forests in New York. They knew that immediate response was necessary and they knew they would need to work with sister agencies on both the State and Federal level to combat and neutralize the infestation. And, they knew they could expect my total support.

Mayor Richard M. Daley
City of Chicago

Around the time of the 1998 July 4th holiday weekend, Barry Albach accepted some firewood from fellow Skokie Park District worker Gary Luka. Luka, who lived in the Ravenswood section of Chicago, had cut the branches from a tree that hung over his swimming pool. Albach put the logs in the back of his camper truck and forgot about them until a few days later, when he noticed a strange beetle crawling on the driver's sideview mirror. When he opened the back of his truck, several other beetles were flying around the pile of wood. "Working in the park," said Albach, "I've seen lots of bugs but I never saw this one before, so I did an Internet search and punched 'beetle' into the search engine."

The first hit to show up was a picture of the ALB, along with a pest alert. "It still didn't dawn on me that it was that serious but as I read further it said to call the Department of Agriculture. They were a little skeptical of me but as we talked further about what I found, they were prompted to come out and take a look at it for themselves and that brought us to where we are today."

Several days later, on July 13, Federal officials confirmed that the insects from the load of firewood were indeed ALBs. Federal, State, and local officials wasted little time. Over the next few days, they be-

gan surveys of the Ravenswood neighborhood to discover how many trees had been affected.

Stan Smith, then-manager of the Invasive Pest Program for the Illinois Department of Agriculture, was one of the first on the scene.

> *We learned about the beetle first thing on a Monday morning. Ken Kruse, the [APHIS PPQ] State Plant Health Director, gave me a call and said, "I think we've got a problem—they think they've found ALB in parts of Chicago." So we made plans to meet at the site and in the meantime I'd called the Bureau of Forestry and Streets and Sanitation in Chicago and asked them to meet us out there. At the same time we had started getting all those State inspectors sent out to the location so that we could start a survey immediately if in fact we did have to, and unfortunately we found we needed a survey within a couple hours after arriving at the scene.*

Joe McCarthy, a forester for the city of Chicago, also first heard about the beetle that Monday. "I came into work that morning about my normal time, which was 8:30. I saw John Low, another senior city forester, running out the door stating that he's got to meet Stan Smith from the State of Illinois and a rep from the USDA out somewhere in the Ravenswood community to inspect a tree that may be infested with the ALB."

Joe McCarthy

At first, McCarthy assumed it would be a false alarm. "Prior to that we had just heard a little bit about ALB up in New York, but it was at that time thousands of miles away and so my first thought was kind of a chuckling on a 'how could that be.' I didn't really think much more about it."

It didn't take long for him to find out that ALB in Chicago was indeed a reality. "As we found out later that day, there was a tree that was riddled with exit holes and then we immediately put together a team to go out on Tuesday, and we divided the area into quadrants for the city, State, and Federal people to go out and begin radiating out from there and we began our survey that week, and then meeting in the

afternoon to kind of see where we were at. So that's what I recall of the first few days." McCarthy went on to become the city's point person for the ALB program.

Joe Schafer, a veteran of the USDA APHIS, became the project manager for that agency's Chicago ALB eradication program. Schafer was the cargo supervisor for USDA APHIS at O'Hare International Airport when ALB was discovered in Chicago. He missed out on the excitement of the first few days. "I was on vacation when they discovered the beetle. They found it Thursday before the Monday that I came back from vacation. When I came back to work, two vials with beetles were sitting on my desk." As USDA APHIS began dealing with the emergency, explained Schafer, the longstanding relationships built up with State and local government became crucial. "Stan Smith and I had worked together for 30 years. I had a long relationship with him and most of his employees. We weren't strangers, and I had done fieldwork on similar insects for 6 years."

"I think the existing ongoing relationships really helped as much as anything," echoed Joe McCarthy. "Sometimes you get entrenched in bureaucracy, but all the agencies brought things to the table and each agency said 'well, this is what I can offer.' "

Noel Schneeberger, Forest Health Program Coordinator for the USDA Forest Service's Northeastern Area, also arrived on the scene shortly after the discovery.

I went out to Chicago very shortly after the Asian longhorned beetle was found, just to assess the situation, and to see how it compared with what we had found in New York.

There were a lot of people heading out to Chicago at that time. Initially, there was just a tremendous amount of interest, and a flurry of visitors, high-level and mid-level, from the Federal Government, State government, and the city government.

There really wasn't an organization in place, but I would say that very quickly the Animal and Plant Health Inspection Service Plant Protection and Quarantine [USDA APHIS PPQ] people, who have the Federal responsibility for invasive insect and plant pests, and their State counterpart with the Illinois Department of Agriculture, and the city of Chicago, coalesced very quickly to develop a response to it, and we were part of the package. We brought in an entomologist from our St. Paul office to interface and interact with the other Federal people and State people, and it just seemed to organize itself very quickly.

In terms of bringing the public on board in support of this emergency effort, all of the people involved pointed to the solid support voiced by Chicago Mayor Richard Daley as a turning point.

The mayor from day one came out and in a press conference pointed to all the experts behind him saying, "we're looking to them and we're willing to provide whatever we can provide to help eradicate this pest at no cost to citizens." That meant that when we had to take trees down on private property or public property, we would do that and then later on we would get restoration [for property owners]. . . we were going to get the problem solved first and then deal with whatever the cost was going to be later…. It assured the public that the mayor was behind it and was willing to do whatever it took to solve the problem at minimal cost to the homeowners.

Joe McCarthy,
City of Chicago

The city of Chicago and particularly the mayor made Asian longhorned beetle a city priority. If you use the military term for it, they call it a command priority. It went to the top of the mayor's agenda, and that type of priority just filtered down to every city agency and ALB became a top priority in the city.

Noel Schneeberger,
USDA Forest Service

Mayor Daley was brilliant. He explained what was known about the situation. He described the insect and estimated amount of affected trees. He asked for the community's support in protecting the Nation's forests. He asked for the community's support for the eradication efforts. He explained that the only known treatment was to remove and chip the infested trees but that no homeowner would bear the cost of the removal or replanting of trees.

Gina Childs,
Urban Forester, USDA Forest Service

Chicago Mayor Richard Daley

Mayor Daley was joined at the press conference by then-U.S. Secretary of Agriculture Dan Glickman and then-Illinois Senator Carol Moseley Braun. The presence of these high-ranking officials impressed on the public the danger posed by the ALB, and the determination of the city of Chicago, the State of Illinois, and the Federal Government to address this invasive pest emergency in the most decisive way possible.

On behalf of the people of the city of Chicago, I'd like to welcome the Secretary of Agriculture and thank him for taking time to come out to the city to personally investigate the area affected by the Asian longhorned beetle.

I just want to compliment the fine professionalism that I have seen, that really reaffirms our commitment as a city and a Nation in supporting this wonderful agency and the importance of our environment….They have done a tremendous job. Again we're asking the Federal Government to help us with funding to continue this program and to survey the trees, the removal, and especially the replanting and landscaping of this wonderful community next spring.

Homeowners should also know that not only parkway trees but trees in the back yards and on private property will be removed at no cost to them. The potential destruction by the dangerous

pests goes far beyond Chicago, and that's why these agencies are deeply involved in this. If unchecked they could spread throughout the region.

Chicago Mayor Richard Daley
at first press conference on ALB

One of those standing on the podium with the mayor was Gina Childs, at that time stationed in Chicago as an urban forester with the USDA Forest Service.

This press conference was picked up everywhere. It was sort of like the "shot heard round the world." It was on CNN—I had friends in Europe who saw me standing behind the mayor. It was truly incredible. "Good Morning America," "Nightline," and several other news programs picked up the news and did followup stories. The Chicago Sun Times *and the* Chicago Tribune *covered ALB extensively; it was front-page news for months.*

Gina Childs

Chicago Sun Times reporter Brenda Warner Rotzoll began covering ALB a few days after the mayor's first press conference, when a beetle was found in one of the Northside neighborhoods she was covering. Rotzoll didn't realize at that point how big a part of her professional life the beetle would become. "There's probably no other reporter on the Earth that knows more about this bug than me," said Rotzoll, who has continued to cover the ALB eradication effort in Chicago since July of 1998. "Everybody was very open about what was happening," she remembered of those first days, "and they were all saying how fortunate it was that we were the second place to have this discovered. There was already some experience to build on."

Reporter Jeremy Manier from the *Chicago Tribune* became the lead ALB reporter for that paper, but found out about the beetle when a fellow *Tribune* reporter wrote the first article on the discovery. He also praised the media interaction with the government's ALB team.

My initial reaction was a mix of amusement, excitement, and alarm. Amusement because it seemed hardly possible that all this fuss could be raised about a little bug; excitement to be on a big story about a species rarely seen in the U.S.; and alarm once I realized how dangerous the beetle could be to trees here.

The media interaction by USDA was excellent. I was allowed to tag along with USDA officials like Joe Schafer as they did their work in the field. In addition to giving us a good story, the access served the USDA's interests because it showed they were actively responding to the problem. I wish more government information were handled in this way.

The team made certain to inform the public right from the beginning. "We held several public meetings," explained Joe Schafer. "At the first public meeting there were 600-plus people, with the press, there. There were people from the USDA Forest Service, Illinois Department of Agriculture, USDA APHIS PPQ, headquarters on down to my level." At the meeting, experts from the USDA Forest Service and USDA APHIS PPQ in New York presented—through discussion and a well-prepared slide show—what had been learned up to that point about the beetle and how to eradicate it. "Then we had what they call a 'march to the microphone' for 2 hours," he added, where the public was able to voice any questions and concerns they had. "We knew we had a problem," Schafer added. "We got good press, we were in all the newspapers and on TV, and the mayor endorsed us as the experts, and we were able to advise him. The mayor is known in Chicago as the tree mayor. He endorsed the program and it just exploded off the charts."

Gina Childs—involved in community outreach from the beginning—recalled that the Ravenswood neighborhood reacted with distress and concern at the public meetings and on the street.

Shortly after the press conference, the mayor and the alderman hosted a community meeting at a gym in the Ravenswood neighborhood. Over 700

people from the community showed up. There was a lot of expression of grief over the tragedy. Also a feeling of wanting to take action, to be a part of the solution, of wanting to "do something and organize." There was also a good deal of worry over the "tourists" that were visiting Ravenswood and picking up bugs, and what about if beetles were falling into convertibles or were being carried on the el [elevated commuter train]. There was a general sense that they did not want to see this bug spread outside of the neighborhood.

The neighborhood was amazing. No matter what time of day or evening I visited Ravenswood, folks were out and about looking at trees and talking to the scientists and government officials. Some people were crying. One day as I was walking around I heard a kid say excitedly, "Hey, there is one of the beetle guys!" (Referring to Stan Smith who was also checking out trees in the neighborhood). The beetles were literally raining out of the trees. You did not have to look hard to find one on the sidewalk, on the trees, or squished on the road.

The mayor's statements were followed up with decisive action by the city, added Childs.

By Saturday, the mayor asked his Department of Streets and Sanitation to go door to door in the Ravenswood neighborhood explaining about ALB and that infested trees would need to be removed. Every homeowner received literature as well as personal contact and literature was left for those who were not home. ALB "wanted" posters were posted on trees on each block. Even the Commissioner of Streets and Sanitation was knocking on doors.

Much of the initial efforts were aimed at discovering the extent of the infestation and formulating a plan to contain the damage and stop the spread. But officials also wanted to know how the beetle first arrived in the Ravenswood area. This information could be crucial to preventing or minimizing other infestations, and in learning more about the behavior of the insect. Knowing that ALB had probably traveled

to this country on packing material from China, officials began checking local businesses that may have imported such goods. One business was located on the corner of Montrose and Ravenswood Streets. In a 1999 interview for a USDA Forest Service research study (Riddell and Pollack 1999), the vice president of the metal parts manufacturing company described his first encounter with Federal officials.

> *One day these guys walk in the door. They flash these badges and say they're from U.S. Customs. They say "The first thing we want you to know is you're not in trouble." Then they asked me if [my business] imported any parts from China. "Sure," I told them, "I import a lot of castings from China.*
>
> *Then [the vice president] took the officials out back where they could see the crates the castings were shipped in. After careful inspection, the authorities found crates with "exit holes," the dime-shaped holes that adult beetles make when they chew their way out from the inside of a tree. Though the presence of exit holes didn't mean beetles had definitely been shipped from China inside the crates, it was clear the wood had been infested at some point. It was a logical leap to make that this was how the beetle arrived in Ravenswood.*

Excerpt from "Views on the Asian Longhorned Beetle Infestation in Chicago"

Bucket truck workers check the tops of street trees for signs of ALB

One of the most daunting initial problems was finding enough knowledgeable people to survey for ALB outside of the immediate core area. Stan Smith was a chair of the National Plant Board at that time, giving him contacts with experienced people in other States as well as internationally. At a plant board meeting a couple of weeks after the discovery of the beetle, Smith asked for survey volunteers, offering to pay expenses. Within short order, recalls Joe Schafer, State agriculture staff from "most of the Northwest and part of the Northeast" were being trained on how to survey for ALB. "At this time,'' he noted, "all of the trees were still standing with beetles running up and down. So we had one of the larger training areas in the world, outside of China."

As the program began to take shape, the team needed to hire survey and inspection workers. Schafer remembered that the hiring criteria that proved most successful was based more on the desire to work and a willingness think outside of the box than experience with invasive pests or survey work.

Between July and the end of 1998, survey teams found about 450 infested trees. The survey began on the ground, with workers using the naked eye and binoculars to spot exit holes, beetles, and other damage. The USDA Forest Service then brought in a bucket truck to do aerial surveys. "They just showed us in a matter of minutes how many trees we missed from the ground, and so we went to using a bucket truck survey,'' recalled Schafer.

"Ground survey was good in the initial infestation because there was a lot of stuff to see," explained Stan Smith. "As soon as we started eliminating those first trees, the ground guys just couldn't see every crack and crevice." While bucket trucks worked on street trees that were accessible from public roads, the trucks were not usable on private property.

Then, according to Smith, USDA Forest Service personnel thought of using their smokejumpers in the off-season as tree climbers. "The next thing we know, we've got Forest Service smokejumpers coming from everywhere. They were the lifesavers.

Sometimes they're scary to watch when they're up in those trees, but they do the job for us." Between the bucket trucks and the tree climbers, the surveyors were able to double the number of infested trees identified before the beetles began to emerge again in the late spring of 1999. Crews of USDA Forest Service and contract climbers now work throughout the year doing inspections in both Chicago and New York.

A USDA Forest Service tree climber checks trees for ALB in a Chicago neighborhood

In 1999, I was one of the first three people to come to Chicago as a climber to inspect the trees for Asian longhorned beetle damage. . . . When we first got here we noticed that the beetle did quite a bit of damage to the trees. It made our job easy at first to find the beetle and the infested trees. That was kind of in the early stages. I went back to the fire season in the summer, and came back to Chicago with more smokejumpers. I was one of the initial people to train smokejumpers for climbing, specifically for climbing hardwood trees. Last I heard we had climbed more than 170,000 trees with no accidents. We have a real good safety record.

What I think made that job easy was probably the city and Mayor Daley getting hold of the media, and the three different agencies, the State of Illinois, USDA APHIS, and the USDA Forest Service working together. They really got the word out to the homeowners to let us do our job and that made it a lot easier.

Brian Kopke,
USDA Forest Service smokejumper

Smokejumper Nancy Floyd from Winthrop, WA, worked both in New York and Chicago and was able to compare the two experiences.

My first climbing detail was in New York, and after coming here, Chicago is where I prefer to be, partly because of the public awareness, and the people here are very friendly. They're very much informed about what's going on and because of that we don't encounter a lot of opposition to what we're doing.

In New York, I don't think the public relations has been quite as good and a lot of people don't know what we're doing, and because of that they're very suspicious. It can be really difficult to get in different areas to climb. It's a daily battle to get in some of those yards in New York.

The first infested trees were not removed until February of 1999. "We were basically told to wait. If we cut them early it would just create a spread of the beetle," recalls Schafer. "We waited until January, but we had a record snowfall, so that pushed it up to February. We cut 450 street trees in a matter of days. There was just a massive cutdown."

Surveys continued year round, even in the cold and snow

According to Dennis Haugen, a USDA Forest Service entomologist, the decision to leave the trees standing until cold weather that first year was based on a lack of knowledge about the insect's flight ability and a fear of spreading the infestation.

From July 1998 until January 1999, the infested trees were left standing due to the fear that cutting them would increase the ALB spread in that year. With hindsight and more research on ALB flight and host-seeking behavior, a different decision would probably be made today. But tough decisions had to be made with limited information in the first couple of years.

Nancy Floyd, one of the Forest Service smokejumpers

For Ravenswood residents and program staff alike, the removal of several hundred trees within a short period of time was difficult to bear.

The day the trees came down was still an awful day. It was horribly damp and cold and drizzly. The city was so incredibly efficient at getting all the cars to park somewhere else and worked methodically to remove all the infested street trees. The Street and Sanitation crews were out in full force and were incredibly efficient. It seemed like in no time at all the trees were gone. There were clusters of people everywhere watching—under porches, from windows, under umbrellas. There

Ravenswood residents found a variety of ways to express their sorrow over the tree loss
Photo by Victoria Deloria

were hordes of schoolchildren watching from a distance. And there were all the scientists, running around with their dollies full of wood pieces, collecting samples, etc. All the scientists were great. They always took the time to explain to folks what was happening and what they were doing

Gina Childs,
USDA Forest Service

Many members of the Ravenswood community participated in activities that gave them an opportunity to "say goodbye" to the trees.

I don't know who put the poems on the trees, but they were mostly on my block so I always thought it was my neighbors. The notes were placed on the trees the night before they were to come down. The trees fell February 3, 1998. My block was a tight knit group of family and friends. Everyone was either related or knew each other for years.

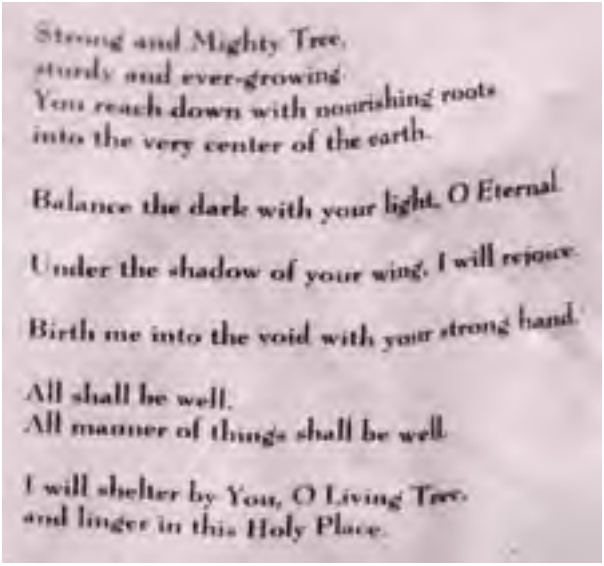
I remember the days leading up to the take down when you'd come home to see if the tree on your property was marked either in green or purple paint ringed around the base. Then you knew you were going to lose that particular tree.

Victoria Delorio,
Ravenswood resident, singer-songwriter

One of many large trees cut down in the Ravenswood neighborhood of Chicago in February of 1999
Photo by Victoria Deloria

Even with all the efforts to prepare beforehand, the cut-down had a powerful emotional impact on community residents.Gina Bader was asked by a group called Tree Keepers to document the cutting in her neighborhood with photographs. "The day before they did the cutting, I walked around my neighborhood, saying goodbye to the trees as they were marked." The next day Bader got up early and went out:

> *I had my little camera and they started real early in the morning. I was able to take all those photographs because I had done a lot of the emotional work the day before. I was able to just focus on what was happening the actual day of the cutting. There were two trees on my street that I was really attached to. One was an elm tree that was maybe 50 years old. But it was amazing—within minutes they cut that tree down and it was really powerful—the sound of it falling across the street and just how long and how much space it took up. It just crashed. It was just really sad . . . they cut wedges on each side of it and roped it and pulled it down and it was gone. And it was very powerful to witness all of that. Actually we saw that there were beetle exit holes—inside the tree there was a lot of activity. It was a very sad day.*



Strong and Mighty Tree,
sturdy and ever-growing
You reach down with nourishing roots
into the very center of the earth.

Balance the dark with your light, O Eternal.

Under the shadow of your wing, I will rejoice.

Birth me into the void with your strong hand.

All shall be well,
All manner of things shall be well.

I will shelter by You, O Living Tree,
and linger in this Holy Place.

One of many poems written by residents of the Ravenswood area to honor their ALB stricken trees

We went to other streets that had larger trees. . . . It was like a war zone, trucks everywhere, people everywhere, people clutching each other, looking at the trees. It was like family members being destroyed. People were just gathering in little groups watching this thing happening, huge trees just one after another were just being cut down and branches and the sound of trees being chewed up in whatever they call that machine . . . and it was a really cold, slightly windy, sort of a lightly rainy day . . . and it was just really hard to see all of that happening.

Community resident and singer-songwriter Victoria Deloria also acted as an observer that day.

The city was incredibly fast and efficient and was remarkable in the removal. I am still amazed by how specifically they worked and how swiftly it was done. I woke up to the sound of chain saws, grabbed my camera, and ran outside to witness it. It was a dreary day marked with the thundering crashes of trees hitting pavement, the crackling of

A street in the Ravenswood neighborhood before tree removal and after

branches, the buzz of chain saws, and the crunching of wood chippers. There were people like me, captivated by what they saw, watching for the entire day. When the men moved out at the end of the day, there was very little they left behind. I walked numbly around the few now-vacant blocks and made my way back home. It didn't hit until the next morning when I walked outside to the brightness and breeziness of my neighborhood.

Children and teachers watch from the steps of a church school as ALB-infested trees are removed from their Ravenswood neighborhood
Photo by Victoria Deloria

Role of the Ravenswood Community

Although the ALB was an environmental disaster, community residents, elected officials, and religious leaders combined to turn the tragedy into an opportunity to bring the community closer together.

Chicago Alderman Gene Schulter

Alderman Gene Schulter represents the residents of Ravenswood, and he has had a firsthand perspective on the impact of the infestation on his constituents.

> *We had no idea how devastating it would be to our community when we lost blocks of trees in an area of the city of Chicago that is known for its tree population. So it was a very emotional thing, because our neighborhood was made up of residents who had planted these trees in the first place and had nurtured them over the years and we watched families growing them over the years.*

> *We had to learn to work together right from the very beginning. And I think 4 years later we've learned just how important that approach was—that we felt very seriously that we had acted as a team of professionals as well as people concerned about our tree population. The local residents knew how important it was to have a line of communication with all layers of government to cut through the bureaucracy to work on this challenge.*

State Rep. Larry McKeon

Before an ALB headquarters was established, State Representative Larry McKeon offered working space and equipment in his district office, which was at the epicenter of the Ravenswood infestation. McKeon commented both on the impact of the tree removal and the cooperation between the public and private sector that helped bring about the positive outcome.

> *We were involved very early on with the crisis as we learned of the existence of the beetles and the extent to which they had infested the area. The immediate surrounding area of this district was quite*

devastated by the loss of trees, families, children, churches, and so forth. All were quite impacted and emotionally distraught over the impact it had on the community.

It was truly a private public partnership working together with all levels of government working together hand in hand cooperatively, collaboratively without conflict, all working toward a common goal to rid the neighborhood of this pest and restore the neighborhood to a reasonable semblance of what it was before the Asian longhorned beetle infested our trees.

The Official ALB Team

The availability of public resources, a strong public outreach campaign, and the use of a single contact number contributed to the strongly positive response of Chicago residents.

One important thing in dealing with citizens was that we had an ALB office, as we do to this day with a central number to call: 74-BEETLE. So with door hangers and ads in the paper, people knew where to call. Operators knew the number to direct them. After hours, they direct those calls to me, if a caller thinks they've got an actual beetle sighting. So, round the clock, citizens have access to a representative from the beetle office. But people in general responded, since they did have a number. If we found an infested tree and we made contact with the homeowner, we told them what the process was and held their hands through the removal process and the replanting process, so that rather than a faceless bureaucracy, they knew who to contact.

Joe McCarthy,
City of Chicago

The central ALB office, with all the government agencies working as a team, was crucial to Chicago's success.

The other factors that have played into a successful program in Chicago is the integration of the Federal, State, and city officials—the technical people who plan and are now carrying out the program. It's truly designed and set up as handling an incident, and I can walk into the ALB office in Chicago, and it's a mix of city, State, and Federal officials, and you don't know who's who. They're all working very well together, they all seem very well integrated, there's not a barrier, either physical or otherwise between the city, the State, or the Federal people. They're just all working as one, they all have a certain job to do, and the communication flow between everyone is very open.

Noel Schneeberger,
USDA Forest Service

Members of the Chicago ALB team in the summer of 2003, outside the ALB program headquarters

Strategic Plan

In 1999 a 10-year plan was developed by USDA's APHIS and Forest Service for the eradication of ALB in New York and Chicago. Cooperators included the New York and Illinois Departments of Agriculture, the New York City Department of Parks and Recreation, and the Chicago Department of Streets and Sanitation.

The plan outlined the following stages: phase-in, delimitation, and containment; suppression and control; deregulation; and eradication. Eradication was projected for Chicago in 2008 and New York in 2009. Plan activities outlined below are for Chicago only.

1. Phase-in, Delimitation, and Containment: 2001–02

Survey of all host trees within a 1.5-mile radius of infested tree. All positive trees removed. The chemical treatment of host trees in Illinois, began in 2000, treating all the satellite infestations and a small portion of the Ravenswood infestation. Chemical treatments were expanded in 2001 and 2002 to an area-wide treatment program. Public awareness activities will be heightened to help in detection.

2. Suppression and Control: 2003–05

Survey, public awareness, and regulatory activities continue. No further treatments are required in the satellite areas if no active beetle signs are discovered in the third year of treatment. In Illinois, 2003 was projected to be the last year of treatment in Addison, Kilbourn Park, Park Ridge, and Summit. Treatments in Ravenswood were expected to continue for a fourth year. The plan projected that 2003 would see the last active indication of beetle infestation.

3. Deregulation: 2002–06

Following 2 years of survey with no evidence of beetle presence, an outbreak area is eligible to be removed from regulations. Deregulation was projected for outlying infestation areas in 2002. The Ravenswood area may be deregulated in 2005.

4. Eradication: 2005–09

Surveys will be conducted under the emergency response guidelines for 4 years after the last sign of active ALB presence was recorded in an area. Following 4 years of negative results in an outbreak area, ALB will be declared eradicated from the area. Complete eradication of ALB from Illinois is expected in 2008 and in New York in 2009.

2000–04 Treatment

In 1999, a new chemical treatment, using the insecticide Imidacloprid, was developed by USDA APHIS scientists in China, tested in Illinois and New York, and used operationally in the spring of 2000 in selected areas of Chicago. The protocols that developed from those studies resulted in the recommendation that all uninfested trees within 1/8 mile of known infested trees be either treated with Imidacloprid or removed. The idea of removing those healthy trees was very unpopular with residents, especially in the areas that already had seen heavy tree loss.

Since laboratory tests conducted in China and the United States showed that Imidacloprid was effective in reducing the population of ALB, the decision was made to use the compound as an alternative to removing healthy trees. Imidacloprid also is used for control of insects on many agricultural products, in some pet flea and tick treatments, and in some lawncare products.

During the first year of the Imidacloprid use in Chicago, the treatments were administered as trunk injections using Mauget injectors. This process was very labor intensive because workers had to stay with the injectors as a safety precaution until they were empty. USDA APHIS continued to study other treatment methods and confirmed that soil injection was also a good tool for applying Imidacloprid to trees. Treatments by soil injections were faster and less expensive, making it easier to treat larger areas in a much shorter period of time. The two methods of application deliver the insecticide quickly to active tree growth areas, where the beetles feed and lay eggs. The precision placement of the treatments minimize the risk of adverse effects on the surrounding environment.

At the end of the 2003 ALB season, Chicago was in its fourth year of treatment and New York completed 3 years in selected areas.

USDA APHIS Researcher Win McLane inserts a Mauget injector with the insecticide imidacloprid into an ALB host species tree

Quarantine

ALB was detected in Ravenswood, Addison, and Summit in 1998, Kilbourn Park and Park Ridge in 1999, and at O'Hare International Airport in 2000. Federal and State quarantines were instituted in all areas, The Ravenswood quarantine was expanded 6.7 square miles in February 2004 to include the Oz Park area, where three trees with exit holes and larvae were found after a single beetle was discovered nearby in the fall of 2003.

To help residents and contractors meet quarantine requirements, the ALB team provided a tree chipper site where tree companies can bring regulated material, which is ground into chips, then taken to an incinerator and burned

Restoration

Public officials and residents perceived the restoration program as the "crown jewel" of the Chicago ALB program. Tree replacement focused on non-ALB host trees and fostering diversity of tree species. Street trees and trees in public areas were replaced on a one-to-one basis. Where trees were removed on private land, property owners were offered a three-tiered plan.

> *We kind of placed a value on trees and I think that was pretty important. The plan was devised to offer people fair compensation. This really helped in terms of public relations because people felt they were getting a fair shake.*
>
> Joe McCarthy,
> City of Chicago

According to McCarthy, the plan provided homeowners with three options. One was a tree-replacement-only option that was based on the diameter at 4.5 feet of the tree that was lost. The second option was a combination of tree and woody landscaping. "That got people's creative juices flowing," he recalled. Many people did not use the full subsidy, McCarthy adds. The third option was to not replace the tree at all. In that case, although the ALB-infested trees were removed at no charge, there was no payment for the loss of the tree.

Many residents did not want their yard trees replaced, according to Joe Schafer. "… we had a lot less people who wanted trees replaced than those with trees that we cut. That was a surprise. In fact, we had a lot of solicitation to remove trees. They just didn't want them."

But in public areas, he added, every effort was made to replace trees and provide other greenery to beautify the stricken neighborhoods. In some cases, new trees were planted in areas where they had been removed before the ALB crisis. "Ravenswood area planted over 10,000 tulip bulbs in 1 day," said Schafer. "Tree replacement started in April [of 1999], and by June they had all those trees replaced plus

New trees of diverse species line the streets where ALB-infested trees were removed

[planted trees in] other vacant areas where the trees had been removed and not replaced."

In addition, noted Gina Childs, the restoration effort became another opportunity to foster cooperation between the government agencies, green organizations, and the residents:

> *We did receive $500,000 for restoration costs for ALB. I organized and participated in a number of community meetings and workshops on tree selection, tree planting, and tree care. The Morton Arboretum, the City of Chicago, and Openlands Project were critical partners in this effort. They were magnificent.*
>
> *Even at the earliest meetings, people in Ravenswood were very concerned about the replanting. They did not want spindly little trees as their replacement trees. The city was wonderful at matching our funds and guaranteeing everyone that there would be large replacement trees and the area would benefit from other landscaping improvements as well. And the community did their part too. Ravenswood raised over $200,000 for the Greening of Ravenswood for complimentary plantings.*
>
> *The Greening of Ravenswood presented myself and each of the participants with an award for our efforts. Pastor Karen Parsons of Pilgrim Lutheran Church was especially helpful. She offered her church as a meeting place for a number of the tree-planting workshops. In addition, the local library and Alderman Schulter allowed us use of their facilities for public meetings and workshops.*

Several Ravenswood residents voiced their approval of the replanting efforts. Lucille Herndon and her sister Florence Kilburg were not strangers to tree loss. When their family first moved to the house in Ravenswood in 1966, all the trees on the block had been victims of Dutch elm disease. "The only tree left alive," she described in a 1999 interview (*Riddell and Pollack*), "was the ash across the street." The city planted a tiny maple in their front yard, and

it eventually grew into a lovely shade tree, only to be lost to ALB in 1999. In a 2002 interview, Herndon talked about the loss and the new tree that she now prizes.

> *It was terrible to have all but three trees on this whole block come down. It was really devastating. Ours was the first one down and I think just about the first one replanted. We've got a linden. Now they put four of each species in a row, I understand, and then another four. I don't know what the four are past this one. But I think ours is the prettiest in the block.*

Resident Gina Bader is also happy with the new trees on her block, but did have some concerns about how the planting and care of the new trees was handled.

> *And then we had new trees planted and it was a very hot summer when they planted the trees. As a resident I noticed they didn't come around that much or maybe enough as it was a very hot summer and they were new trees. We did as we were told and we lost the new tree that was planted in the front of the apartment. They replaced it. It was an oak tree, I believe, a swamp oak, and I believe you're supposed to plant that when it's cooler out and it was planted on the 4th of July weekend, and it was really hot, and we were concerned so we just started watering the trees and encouraged other people in the neighborhood to water it.*
>
> *I guess, in hindsight, I think it would have been good idea for the residents to have followup meetings with the city so we could participate in helping with the trees, especially since this is our neighborhood, and we were so affected by this. We have an emotional connection with what happened so there are many people that would participate in the rebirthing of the new trees.*
>
> *So, I hope that other communities will keep that in mind when and if they have to deal with the problem. So, we just kept watering the trees, and the city kept watering but we continued to help out.*

Ravenswood resident Victoria Deloria leans against one of the few older and still majestic trees on her block that survived the ALB infestation

Then, I remember there was a really wet spring and maybe the fall too, but the trees look really good now. For the most part when I walk in the neighborhood, they look really good. They look like they are taking a solid new home like they're firmly planted and rooted.

For resident Victoria Deloria, the restoration was bittersweet.

The city did replace the trees and thoughtfully not with saplings, but the grandeur is gone. There are only a handful of neighborhoods in Chicago, in my eyes, that have that same lack of city feel to them. And I think that is due to the age of the trees that reside there. It's remarkable to see the trees that survived the Asian longhorned beetle standing so hugely next to the new young trees. It's then you realize just how magnificent those trees were. You take for granted what you have until one day it's gone.

Status as of April 2004

In 2003, all host trees within a 1/2-mile radius of the Illinois ALB infestation received chemical treatment. About 92,000 trees were treated. All surveys were completed at the program's protocol level. The satellite infestations in Addison and Summit were removed from regulation in February of 2004. Both of these areas have 2 years of negative survey. With an additional 2 years of negative survey, these areas may be declared eradicated of ALB.

A single adult ALB was spotted in Ravenswood in October 2003. One month later, the single tree believed to have spawned that beetle was discovered a block away. That brought the total of infested Ravenswood trees discovered in 2003 to 6, 12 less than in 2002, when Joe McCarthy of the city of Chicago made this comment about the program:

> *Four years after the fact I'd say that we've made definite progress. In this calendar year we've found 18 trees, and since July of last year (2001) we've only found 24 trees, so it's a definite big improvement from the first years from July of 1998 to July of 1999 when we found 847 some odd trees. Going from 800 plus trees to 18 trees is a definite improvement. We're very pleased with that, but we'd like to get down to zero.*

Aftermath

McCarthy, like many of those involved in the Chicago ALB project, believes that the experience has changed the way he views his relationship to his job and the community.

> *Working for a big city like Chicago, prior to ALB, my position took me to all corners of the city. It didn't afford me a sense of neighborhood or small town.*
>
> *With ALB, we established a core area. You'd be walking up and down the same blocks, and people actually knew my name. You felt like you were in a small town because you got to know the neighborhood. People would call up having questions, inviting you to events. Through the local Lutheran church, the pastor there got people involved and she passed away suddenly and the neighborhood came together and dedicated a memorial to her.*
>
> *Before ALB I wouldn't have experienced the people side of it as much as I did with this program. Just working with people, holding their hands through the process was a definite learning experience for me.*

Gina Childs also sees her experience with the ALB program as sometimes inspiring, as well as sometimes saddening.

> *Julie Saccho from the Openlands Project and I started working on other projects together. We had always known of each other, but never worked this closely before. Joe McCarthy and I were invited by Pastor Karen to go out for dinner. Pastor Karen unexpectedly died, just days after she had invited us to dinner. Joe McCarthy notified me and we both attended her funeral. I remember thinking how this was a tragedy within a tragedy. She had done so much. She had her schoolchildren make a book of poems about the ALB and they even made lovely notecards that they sold as a fundraiser. She*

really was one of those pillars of the community. Believe it or not, there were even church services so people could grieve the loss of the trees.

Alderman Gene Schulter provided funds for plantings and a plaque that honored both Pastor Parsons and the (from plaque) "…many beloved trees that have been lost at this site to the Asian longhorned beetle.

All the while we lost hundreds of trees in our community and we were very quick to replant those trees. And I can recall the times that we had meetings with the local arboretum associations in our county to teach people better methods of planting and taking care of their trees. But it was this kind of approach that we took to make sure that we knew the challenge that we had. Now we as a ward, a city, a State, and a country had to work together on it.

This plaque honoring the late Pastor Karen Parsons and the trees in the Ravenswood neighborhood lost to ALB is embedded in a sidewalk near her former church

In comments for this case study, Chicago Mayor Richard Daley offers his perspective of the city's ALB eradication effort.

Chicago's success to date in dealing with the Asian longhorned beetle is a classic example of intergovernmental cooperation. We consider trees one of our most important natural resources. And, while we did have to take down over 1,500 mature trees in our effort to halt the spread of the beetle, it could have been a lot worse. Our foresters, along with their counterparts in the U.S. and Illinois Departments of Agriculture, will continue their vigilance and take whatever steps are required to ensure that the beetle is totally eradicated.

Conclusions

A key element in our success at dealing with exotic pests is the shared responsibility and the cooperative working relationships between the research community, the municipalities, the applied agencies, and the technology assistance agencies in the Federal and State governments. We don't get these jobs done successfully unless we're all working together.

In the Chicago situation, the mayor was an extremely important player in our success at responding quickly to the Asian longhorned beetle and in the smoothness with which we got the many players to direct their attention to dealing with the problem.

The lesson we learned there is that we have to have support from the top. The political infrastructure has to be behind the intervention against these exotic invasive pests or we will just not stop them. I think the message to the general public is that once these pests occur, your help is needed in making sure that the politicians and your representatives are sensitized both to the opportunity to be responsive and to the impacts of the damage that might occur if we don't intervene quickly.

Kenneth Knauer, USDA Forest Service State & Private Forestry, Northeastern Area, Assistant Director for Forest Health and Economics

Study Note: Because this case study deals with an existing infestation of an exotic/invasive insect, the importance of early detection was not discussed. This elusive factor could, in itself, prevent the widespread loss of trees from exotic/invasive insects that has been seen in recent years. Early detection depends on communities prioritizing their tree-care resources to allow for regular inspection of tree stock, including areas where commercial/industrial activity results in a heavy volume of imported materials, and on an educated public that will recognize the importance of reporting unusual or unfamiliar insect activity.

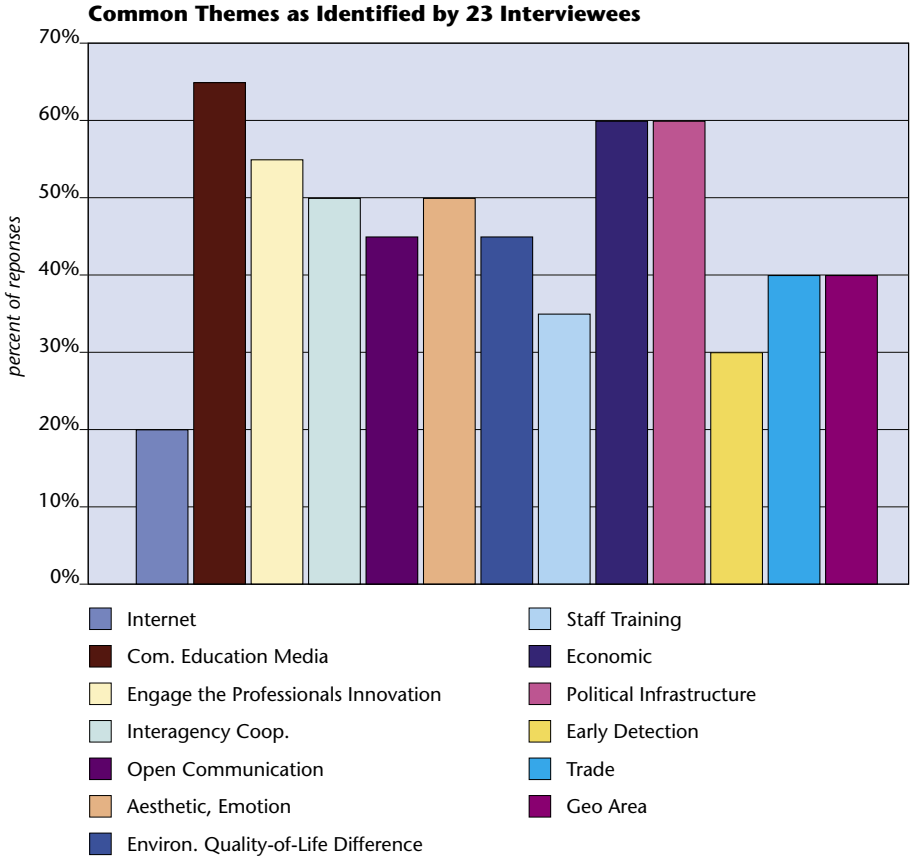
Supporting Materials

Common Themes

Interviews with people involved at all levels with the Chicago ALB eradication effort pointed to the factors charted and outlined below as important to the success of the program.

1. Public Outreach and Media (65 percent)

The factor most cited in interviews was public outreach and media coverage. From the beginning, the ALB team adopted a policy that allowed for large-scale public and media access to information. This approach gave the public two avenues of information. The team was careful that the information in the media and at public meetings gave the same message. The core message was that the city, State, and Federal Government were devoting all available resources to the eradication of ALB in Chicago, and that residents would not be saddled with the cost of removal or restoration. Local media gave the ALB eradication effort top coverage in the beginning, and followed up with regular ongoing coverage. As important was the fact that the coverage was positive. Two newspaper reporters commented that the "open door" policy set by the



ALB team contributed to positive coverage because it convinced them that there was nothing to hide. The local media realized the danger posed by the beetle and assumed a role of public outreach and education.

2. Political Support (60 percent)
Virtually all of the respondents working on the ALB team mentioned the strong, visible support of Chicago Mayor Richard Daley as crucial to the success of the program. The mayor's first press conference set that tone, and also gave the ALB team members the knowledge that he recognized their expertise and fully expected them to be successful. With that support, city agencies, local elected officials, and city employees responded promptly and gave their efforts the highest priority, as dictated by the mayor.

The Chicago program had an advantage that many other programs do not—it was contained within the city of Chicago, and therefore did not cross any municipal political boundaries. Local elected officials, such as the State representative and alderman, supported the mayor's position and acted as "ex officio" members of the ALB team.

3. Economics (60 percent)
Financial considerations were given the same importance as political support. The concerns about property devaluation and the fact that residents were assured they would not have to assume the tree removal or restoration costs figured greatly in their responses.

4. Innovative Professional Staff (55 percent)
The presence of an innovative professional staff was named as a major factor. Several respondents mentioned that surveys were conducted, initially from the ground, in accord with longstanding protocol, and then moved to bucket trucks, and finally to using smokejumpers as climbers in the off-season. These innovations were suggested during problem-solving sessions that included APHIS and USDA Forest Service personnel as well as city and State officials.

5. Interagency Cooperation (50 percent)
The seamless integration of staff from local, State, and Federal agencies allowed all members of the team to present a unified front and to promote the same messages. The team operated from a single office in the core area. One respondent noted that if visitors walked through the office, they would see a team, rather than individuals serving the causes of different agencies.

6. Aesthetic, Emotion (50 percent)
Half of the respondents also mentioned a sense of the aesthetic value of trees and the emotional pain of their loss, either to themselves or to residents. One interviewee, a singer-songwriter, wrote a song describing the cutting down of the trees in Ravenswood and used it in a subsequent album.

7. Open Communication (45 percent)

The continued open communication among team members and with the media served to keep the public informed of progress in eradicating the beetle and restoring the community's trees.

8. Environmental and Quality-of-Life Issues (45 percent)

Increased noise levels and loss of warmth retention (in winter) and cooling (during summer months) were mentioned as some of the negative effects of the tree loss.

9. International Trade

International trade was mentioned as a source of exotic/invasive insect infestations. The implication was that the continuing increase in global trade would result in more infestations in other locales.

10. Size and Boundaries of ALB Infestation (40 percent)

The smaller size of the Chicago infestation (as compared to New York City) made it easier to successfully address. The geographic boundaries, which were within the city of Chicago, meant that there was a unified governmental boundary, which also benefited the eradication effort.

11. Staff Training (35 percent)

The high-quality training given to team staff contributed to their professional activities.

12. Early Detection (30 percent)

This issue would have received more attention in a broader discussion of ALB and other invasives.

13. Internet (20 percent)

The use of the Internet was mentioned as an important tool in the identification of ALB when the insect was first discovered in Chicago.

Chicago-Area ALB Sites

The quarantine notice for all areas read as follows in 1998:

TITLE 7-AGRICULTURE
DEPARTMENT OF AGRICULTURE
PART 301—DOMESTIC QUARANTINE NOTICES
Table of Contents

Subpart--Asian Longhorned Beetle
Sec. 301.51-2 Regulated articles.

The following are regulated articles: (a) Firewood (all hardwood species), and green lumber and other material living, dead, cut, or fallen, inclusive of nursery stock, logs, stumps, roots, branches, and debris of half an inch or more in diameter of the following genera: *Acer* (maple), *Aesculus* (horse chestnut), *Betula* (birch), *Hibiscus syriacus L.* (Rose of Sharon), *Malus* (apple), *Melia* (chinaberry*), *Morus* (mulberry), *Populus* (poplar), *Prunus* (cherry), *Pyrus* (pear*), *Robinia* (locust*), *Salix* (willow), *Ulmus* (elm), and *Citrus.** (b) Any other article, product, or means of conveyance not covered by paragraph (a) of this section if an inspector determines that it presents a risk of spreading Asian longhorned beetle and notifies the person in possession of the article, product, or means of conveyance that it is subject to the restrictions of this subpart.

*Note: Chinaberry, pear, locust, and citrus were eventually removed from quarantine regulation when it was determined that they were not ALB host species.

Ravenswood Quaratine Zone (includes Kilbourn, Oz Park areas)

Ravenwood, Kilbourn, and Oz Park Areas

On July 9, 1998, the community of Ravenswood, IL (also known as the Lincoln Square community) became the first Chicago area identified as being infested with the exotic pest known as the ALB. This discovery led to the eventual quarantine of 24.98 square miles. Ravenswood is a community of approximately 47,424 residents including 18,945 households. The approximate number of occupants per household averages is about 2.50. The Kilbourn Park infestation was found on July 14, 1999 (.11 square miles). It lies just west of the Ravenswood quarantine and south of the Park Ridge area. The Oz Park area was included in February 2004 and added an additional 6.7 square miles to the zone.

That area in the Ravenswood community in the city of Chicago that is bounded as follows: Beginning at the intersection of Kedzie and Bryn Mawr; then east along Bryn Mawr to the end; then east along an imaginary line to the shoreline of Lake Michigan; then south from the intersection of Kedzie and Bryn Mawr, along Kedzie to Diversey Parkway; then east along Diversey Parkway to the end; then east along an imaginary line to the shoreline of Lake Michigan; then north along the shoreline of Lake Michigan to the point of beginning.

The quarantined area in the Kilbourn Park community in the city of Chicago is bounded as follows: Beginning at the intersection of West Roscoe Street and North Knox Avenue; then north along North Knox Avenue to West Addison Street; then north along an imaginary line to West Patterson Avenue; then west along West Patterson Avenue to North Lamon Avenue; then south along North Lamon Avenue to West Addison Street; then south along an imaginary line to West Roscoe Street; then east along West Roscoe Street to the point of beginning. South to Chicago Ave. from Damen Ave as the west boundary and Lake Michigan as the east boundary to include the Oz Park area.

August 1999: The quarantine boundary was extended west from Kedzie Avenue to Central Park Avenue.

March 2001: The quarantine boundary was extended to include the area north of Bryn Mawr, east of Western Ave., south of Howard St. and west of Lake Michigan.

February 2004: The Oz Park area was added to include Chicago Ave., on the west by Damen Ave., on the east by Lake Michigan and on the north by Diversey, which is the southern boundary of the original quarantine area.

Addison

On July 31, 1998, Addison, IL, was the second community found to be infested with the ALB. This discovery led to a quarantined area equivalent to about 1 square mile area or approximately 640 acres. Addison is a community with a population of about 35,914, including 11,805 homes, or an average owner-occupied rate of 3.09 and a rental rate of 3.01 dwellers per household. Addison has been a member of Tree City USA for about 14 years exemplifying the importance this community places on trees. The Addison Park District provides a high-quality park system with 24 parks and recreational facilities.

On February 19, 2004, a public meeting was held in Addison for the purposes of removing the city from the ALB quarantine regulations. On February 24, 2004, the IDOA (Illinois Department of Agriculture) officially lifted the quarantine.

The quarantine area (outlined) is about 1 square mile. Beginning at the intersection of Fullerton Avenue and Swift Road; then east along Fullerton Avenue to Lombard Road; then north along Lombard Road to Army Trail; then west along Army Trail to Swift Road; then south along Swift Road to the point of beginning.

Summit

The village of Summit, IL, was the third area to be quarantined from the ALB infestation. On August 3, 1998, the beetle was identified in the community, leading to a quarantined area of about a square mile or 640 acres. The quarantine accounted for almost half of the surface area in the community.

The 2000 Census reports the population of Summit at 10,637 people with 3,356 households. An average of 3.42 residents live in owner-occupied units and 2.87 occupy rental units. Many people move to Summit for a suburban setting with city amenities. Summit is very close to I-55, Interstate 294, and I-355.

Along with Addison, the village of Summit was officially removed from quarantine by the IDOA on February 24, 2004, after 2 years of negative survey.

The quarantined area in the Village of Summit is bounded as follows: Beginning at the intersection of Archer and 59th Street; then going south along Archer to 67th Street; then east along 67th Street to the end; then east along the railroad tracks to Sayre; then north along Sayre to 59th Street; then west along 59th Street to the point of beginning.

Kilbourn Park

Kilbourn Park, the fourth ALB site to be discovered, was incorporated into the Ravenswood quarantine area. [See page 42 map of Ravenswood quarantine area.]

Park Ridge

On September 2, 1999, the community of Park Ridge, IL, was the fifth community found to be infested with the ALB. Approximately 0.3 of a square mile (about 200 acres) was quarantined. The community of Park Ridge consists of approximately 7 square miles (4,480 acres) of land encompassing a population of about 37,775 people. According to 2000 Census data, the community has approximately 14,219 housing units, of which 12,455 are owned and 1,764 are rented. The average owner-occupied rate is 2.71 individuals per household as compared to a renter-occupied rate of 1.88.

Park Ridge is known for its tree-lined streets and 20 well-maintained parks used for all aspects of recreation. The community also has been a member of Tree City USA for the past 18 years. Park Ridge originally was developed without the traditional subdivision tracts, which accounts for the unique diverse homes in the area. It is approximately 15 miles from the Chicago Loop and 6 miles from O'Hare International Airport, the site of the sixth ALB infestation.

The Park Ridge infestation was found on September 2, 1999. The quarantine area (shaded) is about 0.3 square miles (200 acres) per acre. The area is bounded by Devon Avenue on the North, Dee Road on the East, Kennedy Expressway on the South, and the Des Plaines River River on the West.

Chicago O'Hare Area

The Chicago O'Hare area (known as the Schorsh Forest View Community) and the encompassing Villages of Bensenville and Franklin Park were the scenes of the sixth ALB infestation. These areas included portions of Cook and DuPage counties, where the ALB was discovered on November 28, 2000. Bensenville's population is 20,703 while Franklin Park has about 19,434 residents. Bensenville has approximately 7,120 housing units, with Franklin Park at 6,641 dwellings. The owner occupied rates are 3.25 and 3.03 respectively. The Village of Bensenville has been a Tree City USA member for 14 years and maintains 13 parks for leisure and recreational activities. The village is in close proximity with the Chicago O'Hare airport and lies directly in the flight path of hundreds of planes landing and taking off daily. The population is about 19,000, but more than 100,000 people work there each day. It is approximately 12 miles northwest of downtown Chicago and serves as the host for over 1,000 businesses.

The quarantine area in DuPage and Cook Counties is as follows: bounded on the west from the intersection of Supreme Drive and Thomas Drive in the Village of Bensenville, south on Thomas Drive to its end, then on a line southwest to Church Road, continuing south on Church Road to Jefferson Street; bounded on the south from the intersection of Jefferson Street and Church Road, east on Church Road to the Cook and DuPage County Line, continuing east on a line through the Chicago, Milwaukee, St. Paul, and Pacific Railroad Yards to the intersection of Waveland Avenue and Centrella Street in the Village of Franklin Park, continuing east on Waveland Avenue to Mannheim Road in the Village of Franklin Park; on the east from the intersection of Waveland Avenue and Mannheim Road in the Village of Franklin Park, north on Mannheim Road to Interstate 190, west along Interstate 190 to Bessie Coleman Drive, continuing north on Bessie Coleman Drive to a point in line with Runway 27 Right of O'Hare International Airport; on the north from a point on Bessie Coleman Drive in line with Runway 27 Right, west following Runway 27 Right on the grounds of O'Hare International Airport to its end, continuing west on a line parallel with the runway past the Cook and DuPage County line until the line intersects York Road, north on York Road to Supreme Drive, west on Supreme Drive to Thomas Drive in the Village of Bensenville.

Survey Procedures

The survey protocol information below was taken directly from the official USDA APHIS ALB survey manual, which describes the steps to be taken to survey for the presence of ALB once the presence of the insect is confirmed.

Intensive Core Survey (Level 1)

Annually, all host trees within a 1/2-mile radius of the initial find are surveyed visually. This initial survey is conducted by ground crews. Once visible damage is no longer evident from the ground, bucket trucks and tree climbers are used to complete the survey within the 1/2-mile radius. It is recommended that bucket trucks be used to survey curbside trees, and tree climbers for trees on private property. If additional infestations are found, the core area will be extended from the outermost find in a 1/2-mile radius.

Delimiting Survey (Level 2)

A minimum of a 1-mile radius beyond the core survey boundary is surveyed. All street/curbside trees are surveyed using bucket trucks and ground crews in residential areas; a minimum of four private properties with host trees per block are surveyed initially using tree climbers and ground crews. Biannually, all host trees in the delimiting area are surveyed using ground crews, bucket trucks or tree climbers.

High-Risk Site Detection Survey (Level 3)

Use investigative work to identify potential high-risk sites where ALB infested materials may have been taken. Utilize interviews, databases, yellow pages, ads or other potentially valuable sources of information to identify the following:

1. Tree services that conduct business within the infested or regulated area. Find locations where their vehicles are routinely parked, wood is disposed of or stored.
2. Municipal parks, tree wardens, foresters or other municipal groups that may cut or trim trees.
3. In heavily infested areas, query local residents about any firewood they may have cut and given away or transported to other locations (cabins, camps, etc.).
4. Landfills or other places used for the disposal of recently cut wood and brush.
5. Utility companies.
6. Anyone else who may cut or transport wood.

At sites identified above, conduct annual ground-based visual surveys of 50 to 100 potential host trees surrounding the site for ALB. Managers may choose to use bucket trucks and tree climbers based on the availability of resources. Only include trees that are within 1.25 miles of the site.

Areawide Detection Survey (Level 4)

All 1-square-mile areas within 25 miles of the epicenter of the current ALB infestation and outside of the regulated area shall be surveyed at least once every 3 years in the following manner: Two host trees at each of nine sites per square mile shall be inspected visually from the ground for evidence of ALB infestation. Sites shall be well distributed throughout the square mile block and separated by a minimum of 300 meters. Use a GPS unit (if available) to document locations and other data. It is convenient to use Township-Range-Section where available to define survey blocks. The first area wide survey should be completed within 1 year of discovering a new infestation that is not associated with the existing regulated areas for ALB.

The table below shows now many infested trees were found annually by all methods (i.e., survey and citizen reporting) between 1998 and 2003.

Illinois

(updated: December 31, 2003)

	Infested Trees						
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**Total**
Ravenswood	453	712	183	68	18	6	1,440
Addison	46	11	1	0	0	0	58
Summit	20	5	0	0	0	0	25
Park Ridge		4	3	0	0	0	47
O'Hare			23	0	0	0	23
Total	***519***	***732***	***210***	***68***	***18***	***6***	***1,553***

Year totals are calculated on a calendar year basis.

References

Nowak, David J.; Pasek, Judith E; et al. 2001. *Potential Effect of Anophlophora glabripennis (coleoptera: cerambycidae) on Urban Trees in the United States.* Journal of Economic Entomology. *94(1): 119.*

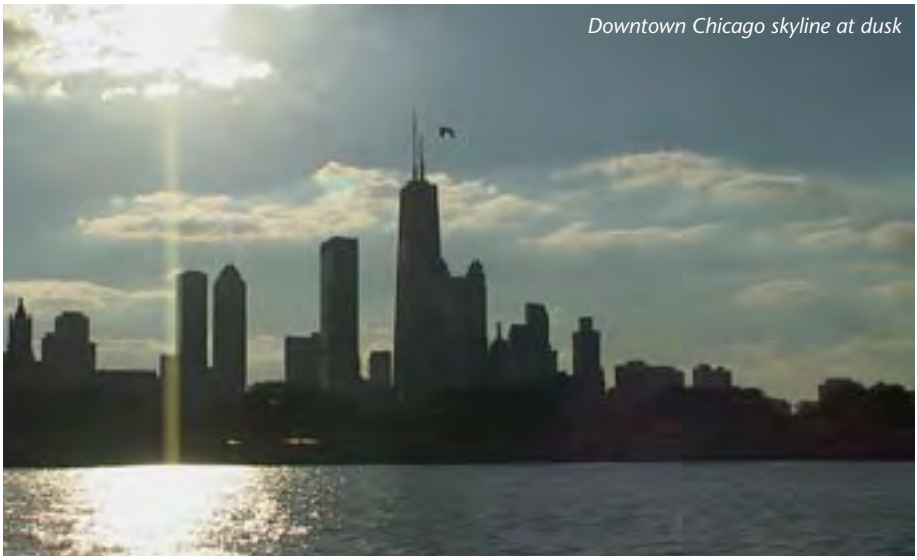
Pimentel, David; Lach, Lori; et al. 1999. *Environmental and Economic Costs Associated with Non-Idigenous Species in the United States.* Ithaca, NY: Cornell University, College of Agricultural and Life Sciences. *p. 9.*

Riddell, Jill and Pollack, Neal. 1999. *Views on the Asian Longhorned Beetle Infestation in Chicago: An exploration of Insights from Neighbors and Government.* 23-99-10-RJVA. Evanston, IL: USDA Forest Service North Central Forest Experiment Station, Research Joint Venture.

Photos on front and back covers and on pages 16, 18, 26, 29, 30, 37, and 50 by Judy Antipin.

For more information on Asian Longhorned beetles, visit
http://www.na.fs.fed.us/spfo/alb/index.htm.
http://www.aphis.usda.gov/lpa/issues/alb/index.html

For information on the Northeastern Area of the USDA Forest Service, visit
http://www.na.fs.fed.us/.


Downtown Chicago skyline at dusk

Author's Biographies

Judy Antipin is a public affairs specialist with the forest health unit of the USDA Forest Service Northeastern Area. For the last 3 years, she has worked extensively with Federal, State, and local governments to raise public awareness of forest health threats, while assisting communities facing serious invasive insect emergencies. From 1998 to 2000, she was a media specialist with the U.S. Census Bureau during the decennial census. Prior to that she was a newspaper reporter and editor for over 10 years. She holds a B.A. in English and Psychology from Pennsylvania State University and a Masters in Journalism from Temple University.

Thomas Dilley is the Chicago Metropolitan Initiative Coordinator for the USDA Forest Service Northeastern Area. He provides technical and grant monitoring assistance to the Chicago ALB eradication program and urban and community forestry programs in the Chicago six-county area and northwestern Indiana. Prior to his current position, he was the Chicago USDA Urban Resources Partnership Coordinator for the metropolitan Chicago area. He holds a B.A. in Sociology, with a concentration in Environmental Studies, and a M.S. in Community Development, with a specialization in Environmental Education, from Southern Illinois University.

The authors and the USDA Forest Service Northeastern Area would like to express their appreciation to all those who made this case study possible, especially the members of the Chicago ALB Eradication Project and the many Chicago residents who lives were affected by the Asian longhorned beetle.

United States Department of Agriculture

Forest Service

MP-1593
October 2004

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.