THE MANITOBA WOODLOT

Issue Number 120 — Wisdom in the Woods — **January/February 2018**

Winter firewood supply

Allan Webb, bottom right in photo, operates the Rapido Loco 20 firewood processor at the Firewood Manitoba wood yard at Stony Mountain, with freshly-split firewood dropping onto a conveyor belt and sawdust going into the trailer. Some of that wood was salvaged from the Parker lands in Winnipeg. More on the Parker lands story on page 3.

Deadly emerald ash borer "hitchhiked" to Winnipeg

St. Boniface focus of joint city, provincial, federal investigation

By Sheilla Jones

The size and scope of the infestation of the deadly Emerald Ash Borer in Manitoba is still under investigation, but officials do have a good idea of how the insect got here. It hitchhiked.

"This was not a natural progression," said Fiona Ross, pest management biologist with Manitoba Sustainable Development. "It was most likely brought into Manitoba through wood products, wood pallets, firewood or nursery stock."

EAB was identified on November 30, 2017 in a single, mature ash tree in Winnipeg, which is more than 700 kilometres from the closest confirmed sites identified in Thunder Bay in 2016 and Minneapolis in 2010. Since the range of flying adult borers is less than ten kilometres, it could conceivably take several decades for the pest to migrate such long distances naturally.

Continued on page 5

WOODLOT ASSOCIATION OF MANITOBA INC.

Website: woodlotmanitoba.com

The Manitoba Woodlot is published six times annually as a service to the membership of the Woodlot Association of Manitoba (WAM).

WAM seeks to promote an understanding of sustainable woodlot management, increase income and employment potential for the woodlot sector, promote the use of woodlot products in the place of non-renewable and imported products, and develop human resources in woodlot management.

WAM represents the interests of our members within the Canadian Federation of Woodlot Owners (CFWO). The CFWO makes those interests known to forestry ministers at both levels of government.

WAM also has a representative to the Manitoba Model Forest, another organization that promotes sustainable management of Manitoba's wooded areas.

WAM is a non-profit organization led by a volunteer Board of Directors, which meets monthly. Our Annual General Meeting (AGM) is held following our year-end of March 31, and is open to all members in good standing.

THE MANITOBA WOODLOT

Editor: Sheilla Jones
Email: editor@woodlotmanitoba.com

Woodlot Association of Manitoba
900 Corydon Ave., Winnipeg, MB R3M 0Y4

WAM launches timely promotion for wise management of wood

By Bob Austman

The resurgence of firewood as a carbon-neutral heating source has created a demonstrable need for public safety education. To that end, WAM has developed an education strategy to encourage Manitobans to "Burn smart, burn clean, burn safely".

We would add, given that the Emerald Ash Borer has now been identified in Manitoba, burn locally.

Many rural Manitobans have relatively easy access to firewood from their woodlots or bush on the farm, or even from Crown Land, providing a cutting permit is obtained from their local district office of Manitoba Sustainable Development. However, if firewood is burned improperly, it can create very dangerous conditions that may lead to chimney fires, carbon monoxide buildup, or air quality issues in and around the dwelling. Every year in rural Manitoba, fires due to chimneys, wood stoves and fireplaces cause dozens of injuries and, in some cases, fatalities. They also result in significant property loss.

The provincial FireSmart program has been effective in educating property owners on how to protect their residences and out-buildings from the external threat of fire. WAM's Wood-Wise Firewood Safety Workshop Program deals with what is inside homes, cottages and other buildings to address safety issues with wood-burning appliances and chimneys.

The workshops are designed for community groups, cottage associations, municipalities and fire departments who want to educate their members/constituents on the importance of firewood safety. Our experts deliver 2.5 hours of important, hands-on safety information, and address peoples' specific concerns through a Q&A session.

WAM will be providing more details throughout the spring as our Wood-Wise online material is expanded. For more, go online at www.woodlotmanitoba.com/wood-wise.

Wood-Wise Firewood Safety

Oak and poplar stands cleared from Parker lands

Win-win-win for trees from controversial Parker lands

By Sheilla Jones

The trees cleared from the controversial Parker lands in Winnipeg have not gone to waste. They're being turned into firewood and furniture.

WAM president Clint Pinder is the owner of Firewood Manitoba in Stony Mountain. He said most of the poplar and oak cleared ended up in his wood yard.

"We were contacted by Alliance Tree Care, which won the bid to remove the trees. We've worked with them before. They wanted to divert as much wood as possible from going to the landfill."

The east side of the Parker land in Fort Garry was clear-cut in March and April in 2017 to make way for the beginning of construction of Stage 2 of the city's high-speed bus transit system.

Pinder acquired about 75 cords in the form of 20-foot logs that were cut to fit into bins, and loaded into the bins using a skid-steer. The bins were trucked out from the city by Meridian Hauling.

Pinder got the wood for free, but paid for Meridian Hauling to deliver the bins to his site. However, the delivery left Pinder in a bit of a dilemma.

"Meridian unloaded the bins like a dump truck. What we had was a giant game of pick-up-sticks."

Sorting out a tumble of 20-foot logs, some of which were large, mature oaks, was a challenge for Pinder and employee Allan Webb. It would be potentially dangerous to try to untangle them by hand.

Instead, Pinder used a Chomper processor that he could back up to the tangled log piles.

"The Chomper has a winch and we could pull a log into the processor. It shears the log and pushes it through the splitter and onto a conveyor, and then into a waiting delivery vehicle or a stockpile."

The process was slow, given the girth of some of the logs, but it efficiently converted the logs into firewood, using a single person to operate the processor.

Pinder considered the whole process, from start to finish, to be a win for everyone.

"This was a win-win-win. The trees got removed from the site in a timely fashion, and got used for firewood instead of going to the landfill. And people in the city can feel good knowing that the wood from the Parker lands went to good use."

Pinder said some of the nicer wood went to Wood Anchor, a Winnipeg company that custom designs wood furniture.

The logs delivered to Firewood Manitoba, noted Pinder, were cut before the Parker lands became the site of a two-month long blockade over the summer, where Indigenous rights activists and local residents wanted to preserve the green space that was once the site of a Métis settlement called Rooster Town.

The construction and removal of more trees continued in the fall, following a court injunction against the protesters. The Stage 2 construction of the Southwest Transitway takes high-speed bus lanes from Jubilee at Pembina, under two railway tracks and then west along Parker Avenue, through wooded and swampy lands south of the CN rail line. The transit line then turns south along the hydro-line right-of-way south to the University of Manitoba.

EAB spreads fast once it has arrived

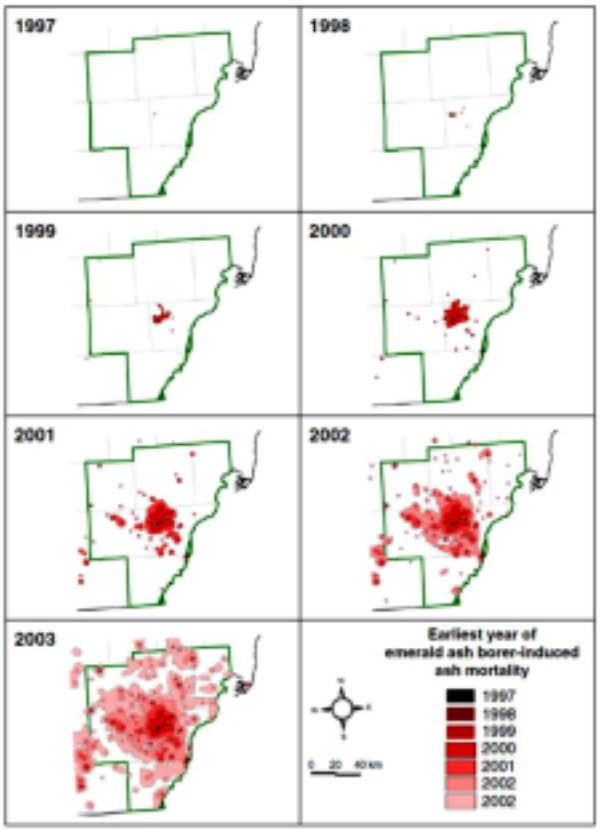
By Brad Gurr

The biology and life cycle of Emerald Ash Borer (EAB) has been described in detail in many articles and on web sites. What isn't clear is how it moves in a forest and systematically decimates native North American ash forests.

Important research related to uncovering the source of the original EAB outbreak in Michigan has been conducted, and the results have shed some light on how EAB started from a single, identifiable stand of trees in Michigan, and then quickly invaded and killed entire forests.

Using dendrochronology, the science of aging trees by counting annual tree rings, researchers Nathan W. Siegert and his colleagues were able to literally go back in time to identify the source of an initial infestation in Michigan. By comparing the growth rings of living trees to the ash trees that died as a result of EAB infestation, the researchers were able to develop a time line that traced the infestation and death of ash trees, and were ultimately able to locate the source of the outbreak.

In doing this analysis, they developed a series of maps that show how EAB could spread from an initial site quickly, if left unchecked, and overwhelm an entire forest before anyone was aware it was even in the area.



Although the first detection of EAB in this area was in 2002, the infestation started at least seven to ten years earlier. It is often the case that EAB is initially present in low numbers and isn't discovered until its numbers have grown exponentially. The Michigan infestation became notable at that point, and EAB was devastating local ash trees.

As you can see from these maps, it takes only a few years from establishment of an EAB infestation to complete annihilation of all ash trees. Movement of infested material, like firewood, raw wood products and nursery stock are the fastest ways to start new satellite infestations of EAB. Once established they can fill in the gaps and move from tree to tree at a rapid pace.

When it comes to EAB, treating any trees you value is critical to their long-term survival in this initial infestation phase. Seigert's study map covers approximately 10,000 square kilometres. The greater Winnipeg Capital Region (WCR) includes a 7,500 sq. km area. It means that you might expect similar results over a similar time frame.

The Manitoba Capital Region includes: the City of Winnipeg; the City of Selkirk; the Town of Stonewall; Town of Niverville, Village of Dunnottar and the Rural Municipalities of Cartier, East St. Paul, Headingley, Macdonald, Ritchot, Rockwood, Rosser, St. Andrews, St. Clements, St. François-Xavier, Springfield, Taché, and West St. Paul.

A map of Michigan, with the outline of the quarantine zone in the Detroit area at the lower right.

Using dendrochronology, scientists at Michigan State University were able to trace the EAB infestation first identified near Detroit in 2002 back to a where the outbreak first started in 1997. The ash mortality over time is indicated in red. The quarantine zone set up in 2002-03 is outlined in green.

Graphics by permission from Michigan State University

St. Boniface focus of EAB search in Winnipeg

Continued from front page

"Long-distance spreads with a big jump come from the movement of goods and firewood," said Ross. "The area of the confirmed site is close to a heavy industrial area, with rail lines and a lot of goods moving in and out."

The confirmed EAB site in Winnipeg is on the west side of Archibald Street and south of Marion Street. That site is adjacent to the St. Boniface industrial area and close to the CN Symington rail yards. There is a high volume of goods moving through the area via truck and rail. There is also a major highway route, which would provide multiple opportunities for the EAB to "hitchhike" to the city in wood products or firewood.

Ross said there have been no new confirmed sites in the province, even with the up-tick in calls and inquiries from the public.

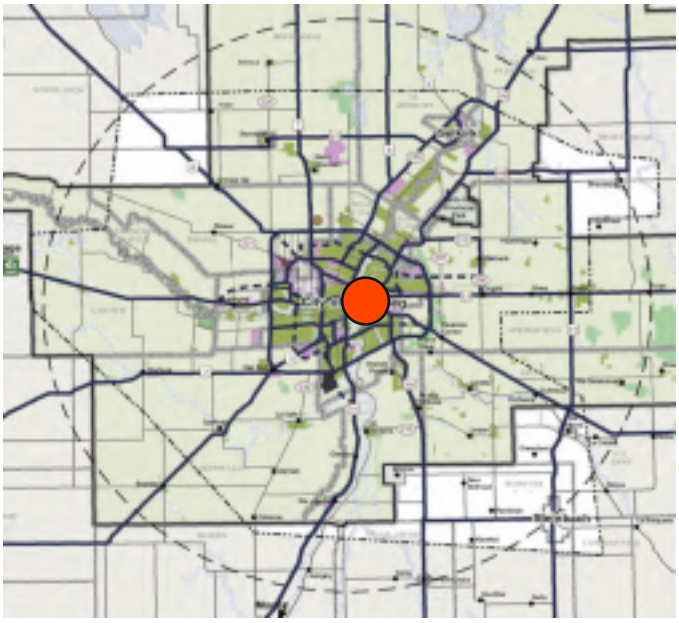
"We get more calls in the spring and summer when people can see early visual signs of insects and damage. Normally, in the winter, we get very few calls about pests, but this year we've had quite a few inquiries. That's a good thing, because it means the public is learning what to look for."

EAB larvae survive the winter under the ash tree bark and are not visibly active. However, D-shaped holes in the bark are a good indicator that larvae from a previous year have burrowed out. They are a strong indicator that the pest is present.

EAB investigation covers St. Boniface

The December EAB confirmation in Winnipeg triggered an investigation and survey by the province, City of Winnipeg and the Canadian Food Inspection Agency (CFIA). Ross said the survey, which covers all of St. Boniface, is still underway, and the response taken will depend on the results of the survey. However, she noted, people involved in the wood business can expect to see a change in regulations.

"There will be regulations in Manitoba affecting ash wood, whether it is firewood or nursery stock, but the exact outline of those regulations is not yet in place. The CFIA has an EAB compliance program and works with industry on regulation."



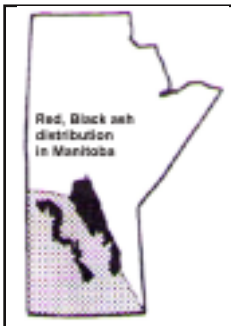
Map by Stantec

The dashed line on the map of the Winnipeg Capital Region marks a 50-kilometre radius from downtown Winnipeg, an area of just under 8,000 sq. km. The red dot marks the EAB confirmation site and investigation zone in the St. Boniface area, across the Red River from downtown.

Businesses involved in the transportation of firewood, whether ash or any other species, will quickly feel the impact of CFIA regulations.

"We're encouraging people to purchase firewood from the area where it is being used," said Ross. Find a local firewood source. It will help slow the spread."

Aside from the devastation to ash stands and urban ash trees by the deadly pest, EAB is taking a toll on Canada's lumber and nursery industries. Ash wood represents about 22-percent of Canada's hardwood lumber exports. Sales of ash nursery stock are worth about $600-million a year in Canada. The hardest hit products wherever EAB is identified are nursery stock and firewood. Both are subject to strict movement prohibitions.



EAB confirmed in eastern range of Prairie ash zone

The Great Lakes served as a major geological barrier in inhibiting the spread of the Emerald ash borer beetle. That barrier was breached in 2016 when EAB was confirmed in Thunder Bay.

Although the boreal forest is not home to ash trees, the movement of the insect west from infected zones in southern Ontario and Quebec has not depended on natural progression. It has likely been transported through wood products and firewood.

Continued on page 11

EAB-infested ash trees: They all fall down

The emerald ash borer is deadly for ash trees, and dying ash trees could be deadly for people. An infected tree does not behave like a healthy tree. As John Ball explains, a brittle trunk that snaps, weakened roots that pull out of the ground and exploding branches of a borer-damaged ash are risks where EAB has struck.

By John Ball

No one finds the first emerald ash borer-infested ash tree the year it was attacked. Usually when a new infestation is confirmed, it is already established and three to six year old.

The EAB, an insect native to East Asia, was accidently introduced into the Detroit area sometime in the early 1990s. While clusters of dying ash were noticed by concerned tree owners, the spreading decline was attributed to the usual suspects; ash yellow, drought and road salt. However, in the summer of 2002 it was confirmed that the tree mortality was due to a new borer to this continent.

Considering how long it had been here before the discovery it was not too much of a surprise to find the insect in Windsor that same summer. The insect spread out from the epicentre in both Canada and the United States, being identified in London by 2006 and Toronto by the following year. The spread eastward continued with Montreal confirming the insect by 2011 and Terrebonne in 2013.

The insect spread north as well, moving from the Lower Peninsula of Michigan into the Upper Peninsula and around the Lake. It was confirmed in Duluth in 2015 and then last year in Thunder Bay. It is no surprise that now it has been discovered in Manitoba.

Initially the focus is often on identifying and treating (or removing) infested trees. For the first couple of years, the infestation seems manageable, but often the beetle population and subsequent tree mortality grow at an exponential rate and quickly overwhelm the communities' resources to manage the pest.

The rate is fastest in the lower Midwest of the United States, southern Michigan, Indiana, Ohio, Illinois, and Iowa. The spread appears to be slower in more northern areas, perhaps due to winter mortality of the larvae. This means northern communities might find the "death spiral" much slower and an infestation does not result in a rapid loss of trees.

However, regardless of spread rate, there will be dead trees to contend with. While there are effective treatments to prevent infestations or even to rid a tree of the beetle, there will always be infested trees that are not treated, become infested, and over four or five years of continual attack, succumb to the attack and die.

Death comes slowly

Death comes to a tree slowly. The first year or two the attack is often concentrated in the sunlit canopy The smaller limbs and branches have thinner phloem (the inner bark tissue rich in sugars that serve as food for the larvae) but the insect prefers sunny spots to lay eggs.

The attacks move to the trunk in the following years where the phloem is thicker and better suited to the development of the larvae.

The galleries made by the larvae as they tunnel through the phloem severs the connection between the canopy, where the food is manufactured through the process of photosynthesis, and the roots which depend on this food so they can acquire water to support the leaves in the canopy.

As the food supply to the roots is blocked and the roots use up their reserve supplies, they begin to die. As the roots decline, the tree's canopy declines as well.

This drying process results in a tree that becomes brittle and falls prematurely and unpredictably. This is not a phenomenon unique to ash infested by emerald ash borer. Just ask anyone in British Columbia who deals with the mountain pine beetle.

Pines are tough trees and it is not uncommon for a dead pine in the West to stand for decades or occasionally even a century or more. Not so with a tree infested by the mountain pine beetle. Trees infested by mountain pine beetle also dry out quickly due to the extensive tunnelling by the larvae and blue stain fungi. These infested pines begin to fall within a couple of years of dying and most have fallen within ten years of their death.

This is also true with ash infested by emerald ash

Continued on next page

Photo courtesy of John Ball

EAB-damaged ash trees can snap off at the roots, as this one did, because the roots are decayed. This can result in an infected tree falingl unpredictably.

Continued from previous page

borer. Dead trees often fall quickly, within a few years. The trees are described as 'brittle' by fellers who work stands with these dead trees. The wood is dry, with less than one-fourth the moisture content of a live tree.

Since the trees are so dry, they do not behave the same as when a live ash is felled.

Generally you want the hinge wood to be between 5 and 10 percent the diameter of the trunk. However, with these dry, dead trees, a feller often will keep cutting, as the tree does not begin to lift off the back cut as soon as they normally do. A common mistake is to keep cutting until the hinge is cut through.

The hinge helps to direct the fall, and without it, the fall path becomes unpredictable and the tree is as likely to fall backward as forward. There have been numerous incidents when feller have been injured or killed taking down these dead trees, and a common theme is that they cut through their hinge.

Another equally likely scenario is when the tree breaks beneath the cut. Remember, the death of the top of the tree is preceded by the death of the roots.

The roots decay readily and trees often snap at or near ground level. The removal of these standing dead trees becomes so unpredictable that some communities are pushing the trees over with payloaders rather than risk felling them.

Exploding branches

Another risk is being struck by the exploding branches as the falling tree strikes the ground. The limbs and branches often remain attached to the dead tree, but snap very quickly upon impact.

No one, other than the feller, should be within 1.5-times the tree's height when felling these ashes. This provides some protection from being struck by debris as the tree hits the ground. The feller should also be moving along the retreat path, rather than standing next to the tree as it falls.

A good guideline is to remove any infested trees before the canopy has declined more than 30 to 50 percent. The tree should be felled by using wedges and/or a pull line, rather than depending completely upon the tree lifting off the back cut once the proper hinge is set.

Trust emerald ash borer-infested trees as much as you would trust horses. Which means never. They both can do unpredictable things.

John Ball, Ph.D. is a Professor of Forestry at South Dakota State University where he also serves as the state's Forest Health Specialist.

Current and former board members bracing against the wind, L-R: Bob Austman, Clint Pinder, Tom Dykstra, Bruce MacLeod, Allan Webb, Lloyd Church, Irene de Graaf and Dan Mosquin.
Below, the commemorative plaque.

WAM celebrates 25 years

WAM celebrated its 25th anniversary by doing what woodlot owners like to do best—planting a tree. The Manitoba maple from Jeffries Nurseries has taken root in the memorial garden on the west side of the Oak Hammock Marsh Interpretive Centre.

After the WAM AGM and a hearty lunch, event guests were treated to a special screening of *Call of the Forest: The Forgotten Wisdom of Trees*, a remarkable documentary by Diana Beresford-Kroeger about the biological and spiritual connection we have to trees. The film was screened at the Oak Hammock Marsh theatre.

Sheilla Jones and Bob Austman take tickets at the door at the Oak Hammock Marsh theatre for the special screening of *Call of the Forest*.

Newly elected president Clint Pinder accepts congratulations from past-president Irene de Graaf.

Bob Austman talks trees with Stan Goodman and Phil Edbom. Phil was one of the lucky winners of $50 gift certificates from event sponsor Lee Valley Tools.

A party isn't a party without a good spread. The crowd tucks into pork-on-a-bun and salads at the Clubhouse at OHM.

WOODLOT ASSOCIATION OF MANITOBA INC.

Why become a member of WAM?

As a member you will be promoting active stewardship of Manitoba's privately owned woodlands, woodlots and family forests. You will also receive a great deal, including:

—A bi-monthly newsletter, complete with up-to-date information of upcoming events, current woodlot/forestry/conservation issues, and wood products/services available in your area. The Manitoba Woodlot newsletter can be mailed to a Canadian address or accessible on-line to members only in advance of being made available to the public. On-line access saves WAM the costs for postage and printing, and members can view the newsletter in colour. View past issues of *The Manitoba Woodlot* at *woodlotmanitoba.com/newsletter.*

—Special members-only rates for events and workshops.

—Opportunities to participate in field days, demonstrations, conferences, workshops and meetings on topics related to woodlot management.

—Free e-Bulletin ads and notices issued online to WAM members.

—If you operate a commercial woodlot or agrowoodlot, the WAM membership fee is a tax deductible business expense.

—Membership in WAM is open to individuals and businesses. Those interested in membership can telephone (204) 467-8648, or apply/renew membership on-line at *woodlotmanitoba.com/about-us/membership*.

Firewood facing strict regulation by CFIA

Once the Emerald Ash Borer (EAB) has been confirmed in an area, a complex regulation process begins. The extent and nature of the infestation affects the scope of regulations, but the movement of all firewood is immediately impacted.

The Canadian Food Inspection Agency regulates the movement of ash wood products, including sawn wood, bark, logs, lumber, pulpwood and nursery stock. It covers any ash wood product that could harbour or sustain the life-cycle of the ash borer.

Regulations also cover ash bark and chips, all packaging material and pallets with ash components and all firewood.

Some ash items are exempted, such as tissue cultures, seeds, dried leaves, and processed wood materials that are completely free of bark, sapwood and pests. Some exempted processed items include sawdust, tool handles, baseball bats, plywood and veneer, finished flooring, baskets, snowshoes and canoe paddles.

However, the movement of firewood in regulated areas is strictly prohibited. Even non-ash firewood is affected by CFIA restrictions, and can be moved out of a regulated area only by facilities approved under CFIA's Emerald Ash Borer Approved Facility Compliance Program.

Ash wood items can be treated to become compliant with CFAI restrictions. That includes:

- Removing tree bark and removing the underlying sapwood to a depth of at least a centimetre.
- Grinding or chipping to create chips that are less than 2.5 centimetres in any two dimensions.
- Using heat treatments approved by the compliance program.
- Processing that renders wood free of EAB, such as paper products, fibre board and oriented strand board.

Can EAB endure an MB winter?

Manitoba endured a prolonged period of extreme cold in late December and early January, with temperatures consistently falling below -30º degrees Celsius. That could be good news for officials attempting to manage the EAB infestation.

The larvae over-wintering under the bark start to die off in large numbers in Arctic-range temperatures. According to studies from the University of Minnesota, EAB larvae die off at a rate of 79-percent when temperatures fall below -29ºC, and 99-percent will die off when it is -34ºC and colder.

While severe cold may be deadly to borer larvae, researchers say there will not be a total die-off, and the larvae that survive will likely produce a next generation selected for cold-hardiness.

Riverbottom forests threatened

Continued from page 5

However, the confirmation of EAB in Winnipeg in November 2017 puts the insect right on the eastern edge of the Red and Black ash distribution on the Prairies. Ash trees are common along rivers and streams and riverbottom forests, such as those along the Red and Assiniboine rivers.

The challenge for managing EAB damage has now moved beyond controlling the movement of wood products and firewood that might be transporting the beetle. If the EAB has been present in Winnipeg for a full reproductive cycle, it is highly likely that the insect has expanded its range through the flight of adult beetles.

The average distance flown by mated female EAB beetles is about three kilometres, but researchers have tracked the flight of about 20-percent of females to distances up to ten kilometres.

Now that the EAB beetle has entered the ash-rich zone in Manitoba, the spread of and the resultant mortality of ash trees is now a reality for the Prairies.

WAM MEMBERSHIP APPLICATION

Use our convenient online form and PayPal option or fill out this form and mail it.
Apply online: woodlotmanitoba.com/about-us/membership.

☐ Membership fee Apr/17-Mar/18 $30.00
☐ Renewal fee Apr/17-Mar/18 $30.00

I am particularly interested in:
☐ Firewood and biomass energy
☐ Wild foods and othe speciality crops
☐ Lumber, logging and sawmills
☐ Woodlot management
☐ Wildlife habitat enhancement
☐ Soil and water conservation
☐ Christmas trees
☐ All of the above

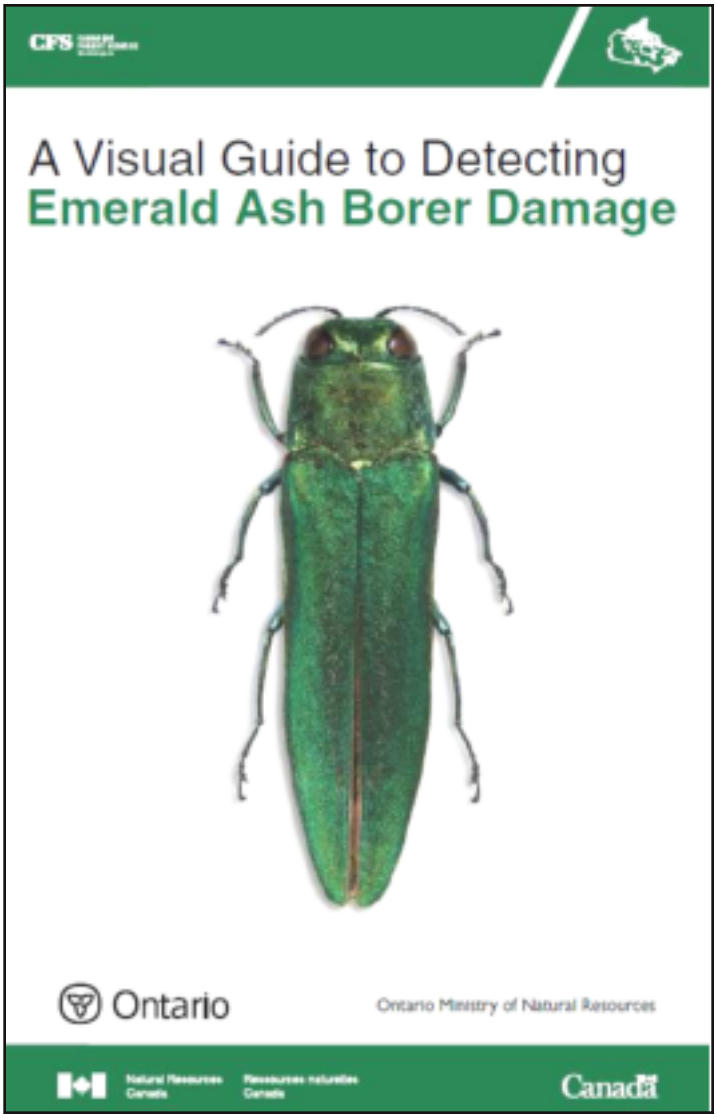
We encourage WAM members to use the cost-effective option of receiving *The Manitoba Woodlot* and Event notices by email.
☐ I don't have email. Please mail the newsletter.

NAME _____
ADDRESS _____
_____
EMAIL _____
PHONE _____

Do you require a receipt? ☐ Yes ☐ No

Thank you for supporting Manitoba's privately owned woodlots, family forests and wooded lands.

MAIL TO:
Woodlot Association of Manitoba
c/o Allan Webb, Secretary-Treasurer
Box 43
Stonewall, MB R0C 2ZO



For an easy to read guide for assessing whether or not your trees are infested with Emerald Ash Borer, this guide by the Canadian Forestry Service is an excellent resource.

Go online to woodlotmanitoba.com/wood-wise/how-to-deal-with-eab/

Publications Mail Agreement No. 41591026
Return undeliverable Canadian addressed copies to:
Woodlot Association of Manitoba
900 Corydon Ave., Winnipeg, MB R3M 0Y4

WOODLOT ASSOCIATION OF MANITOBA INC.