



Minnesota Woodlands

MFA: an organization of, by and for Minnesota's private woodland owners and friends.

www.MinnesotaForestry.org

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MFA Regular Board Meetings

DNR Office
Cambridge
10 a.m. to 2 p.m.

- October 18, 2011
- January 17, 2012
- April 17, 2012
- July 17, 2012

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Taking Advantage of a Destructive Insect's Weakness for Purple

Adopted from a piece in the New York Time by Anthony DePalma, published September 12, 2011

The cartoon-purple boxes are hard to miss. The people who hang them from roadside trees all over the country call them Barney traps, for the friendly dinosaur whose color they resemble, but their purpose is anything but gentle.

The three-sided contraptions, baited with a chemical lure and coated with glue, are designed to catch the attention of the emerald ash borer — a deceptively pretty little beetle from Asia that has killed tens of millions of ash trees in less than a decade.

"Right now, the emerald ash borer is the most destructive insect we have in North America," said Nathan Siegert, an entomologist with the United States Forest Service.

Named for its wing covers, which look so much like emeralds that people in some countries string them into jewelry, the borer is thought to have come to North America in wooden pallets from China. Since they were discovered near Detroit in 2002, the beetles have spread to Minnesota, 14 other states and Ontario.

Except for woodpeckers and a few parasitic wasps, nothing stops these shiny little bugs from depositing their eggs in the diamond-shaped bark of all varieties of ash. The larvae then burrow under the bark and feast on the living tissue of the trees for a year or two, eventually cutting off their water supply and killing them. Adult beetles bore their way out of the tree, leaving a telltale D-shaped hole.

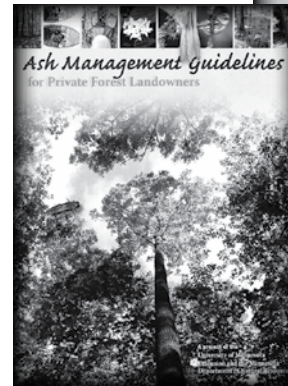
Though no one is raising a surrender flag, the ash borer has already spread so far that eradication is no longer considered a possibility. Instead, officials want to slow the spread, aiming to protect as many of the nation's 9.5 billion ash trees as possible. The Barney trap is the strategy's centerpiece.

The Forest Service, which developed the trap, distributed 61,500 of them this summer to state and local conservation groups in 48 states, including those where ash borers had not yet been detected.

The traps are not meant to catch enough beetles to reduce their number. Rather, they are designed to detect the leading edge of an ash borer infestation. If officials know where the beetles are, and where they are going, they have a chance to slow them down.



Above: 4,500 of these purple Barney traps were hung in Minnesota trees this summer.



Left: Our thanks to U of M Extension and Minnesota DNR for the Ash Management booklet enclosed with this newsletter. Check this booklet for things you can do now to minimize the impact of the invasive emerald ash borer as it spreads toward YOUR land!

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MFA Board Actions

The MFA board meets every month. During January, April, July and October, the meeting is face-to-face at the Cambridge DNR Forestry office. During all other months, the meeting is held via conference call. All MFA members are welcome to sit in on the face-to-face meetings. See a list of meeting dates and board members elsewhere in this newsletter.

We have no new actions to report but do have plenty of ongoing projects:

Considering the creation of a new Private Woodland Owner Education Coop to coordinate educational opportunities for private woodland owners.

Planning for Spring Field Days 2012 to be held in Grand Rapids on May 19 & 20, 2012. The event chair is Dave Roerick, Grand Rapids.

Discussing creation of a system by which landowners can call a single number, MFA's office, to obtain information before they harvest timber on their land. In other states, this system is called Call Before You Cut In Minnesota, it could be called something else but would have the same goals.

Planning for MFA's participation in the 2012 version of the Million Acre Conference, which is now being called, *Minnesota Family Woodlands: A Landowner Conference*.

Tips FROM A FORESTER Uncle Al

Tim Schacht is a fictitious young family man who lives in Rochester with his wife, Mary, and two small children. They just purchased 40 acres in Fillmore County near the Iowa border. The land is part of an old farm. About 30 acres of the land is old pasture that is covered with brush, including buckthorn. The rest is very hilly with some oaks, a few black walnuts and other trees that Tim can't identify. Tim and Mary want the land for weekend getaways and as a family asset to pass on to their children.

Tim called his uncle Al, a forester who spent his career with the U.S. Forest Service. Tim said, "Uncle Al, I know that novice landowners often make mistakes when caring for their land. What are some of the mistakes you've seen landowners make that I should avoid?"

Uncle Al replied, "Tim, I am envious! You and Mary are young enough that you can plant high value trees – oaks and black walnuts – on that old pasture and see them grow to early maturity. Most important, planting and caring for the trees can be a family activity that your children will cherish as they grow older.

"Your first step should be to get a Stewardship Plan. The plan will cost about \$300 but will amount to a blueprint for managing your land. If you are interested in enrolling in one of the tax saving plans available to woodland owners, you can recover the cost of the plan in two years or less. The forester who writes your plan will start by asking what your interests and goals are for the land, so the final product will be customized for you.

"Then, as you and Mary approach your retirement years, you'll have two choices. One is to pass the land on to your children. The other is to sell the land to an outsider and use the proceeds to supplement your retirement savings. In either case, you should consider getting a conservation easement to help ensure the land stays as you envision it.

"Tim, I hope this helps. I am so excited for you and Mary and your new land that I might even volunteer to help plant and prune trees!"



Al Schacht, MFA board member and forester who spent his career with the U.S. Forest Service.

Options for Managing Your Woodland

Four free field days were held during August and September in Hackensack, Lanesboro, Duluth and New York Mills. The events were conducted by U of M Extension under a grant from Minnesota DNR. Each three-hour session consisted of a short classroom introduction followed by hikes through the woods to discuss various subjects, from managing hardwoods to exploring income opportunities.



Above: Angie Gupta, U of M Extension, Rochester, discussed managing hardwoods.

Right: Lyle Keller, Peterson MN, discussed his experience with his Stewardship Plans.

Left: Joe Deden, director of the Eagle Bluff Environmental Learning Center, discussed shiitake mushrooms and passed out samples to taste. Good!



continued from page 1

Although foresters for years have relied on detection traps to survey the movement of other destructive insects, like gypsy moths, they have not been used until now to attract these buprestids, or jewel beetles, because they do not respond as readily to chemical lures. To detect the emerald ash borer, entomologists at the United States Department of Agriculture's Animal and Plant Health Inspection Service first had to do some detective work, getting behind the beetles' eyes and antennas to find out what turns them on.

The first clue, said Victor Mastro, director of that service's pest control laboratory in Otis, Mass., came from simply getting a good look at the insect. It is smaller than a penny, with a coppery red belly and huge eyes. Mr. Mastro said that if a human being had eyes that were proportionally as large as the ash borer's, they would be the size of softballs.

"We suspected that because of their eye size and their coloration, they were visual insects," Mr. Mastro said.

He and his team experimented with a dozen different colors to see which ones attracted the most beetles. They tried

greens, reds and some light shades of purple. To round out the dozen they threw in deep purple. "We figured it was probably not a good color, but we put it in as a negative control," Mr. Mastro said.

The deep purple, it turned out, was the beetles' antennae-down favorite. Mr. Mastro theorizes that the bugs link the color to the purplish hue that can be seen on the inner bark of ash trees. But no one knows for sure.

With the color decided, the team had to settle on the right shape. Four-sided traps gave them the most surface area, but manufacturing three-sided prisms was far cheaper. Each one costs about \$9.

To enhance the traps' ability to attract beetles, Mr. Mastro said a chemical lure was added. The most effective proved to be manuka oil, an extract from a tree that has been used by Maori tribesmen in New Zealand to treat certain illnesses. (Manuka is widely used in the West for aroma therapy.) Each lure packet contains a blend of manuka and other scents and costs \$5.

Which Firewood Is Best?



Brian Bond

Adopted with permission from a piece by Brian Bond, assistant professor and extension specialist in the Department of Wood Science and Forest Products at Virginia Tech University

Heating with firewood is likely to increase in popularity as energy costs rise. The best firewood is that which produces a lot of heat, for the longest time period, with minimal sparks and smoking. These characteristics are related to how much moisture is in the wood, the wood density, and the efficiency of your wood-burning device.

When trying to determine which firewood is best, you have to consider all the variables that impact the amount of heat produced from wood. The amount of heat produced from firewood is usually measured in Btu's, an abbreviation for British thermal unit. One Btu is the amount of energy needed to raise the temperature of one pound of water one degree Fahrenheit. The number of Btu's available from firewood depends on how much moisture is in the wood, its density, and the efficiency of your wood-burning device.

Moisture content in firewood is the ratio of the weight of water in wood relative to the dry wood mass, expressed as a percentage. It can be calculated by weighing one piece of firewood to determine the green weight and then drying it in a kitchen oven set to 220° F. After drying, reweigh the wood to determine the oven-dry weight. Use the two weights to calculate the moisture content like this:

$$\% \text{ Moisture Content} = \frac{\text{Green weight} - \text{Oven dry weight}}{\text{Oven dry weight}} \times 100$$

The initial moisture content of different species is highly variable. The "green" or fresh-cut moisture content of wood is higher than 60% for most hardwoods and, for some species, is over 100%.

Table 1. Green moisture content for the heartwood and sapwood of various species.

	Heartwood	Sapwood
Red oak	80%	70%
Yellow poplar	83%	106%
Hickory	70%	50%
White oak	64%	78%

After drying, the moisture content should be about 20%.

Before discussing the Btu output, it's important to understand that when wood burns, its combustion occurs in three consecutive and overlapping stages. In the first stage,

between ignition and 500° F, the heat of the fire is absorbed by the fuel and the wood dries. In the second stage, 500° F to 1,100° F, the wood breaks down, emitting flammable gases (volatiles) that contain more than half of the heat energy of the wood. In the third stage, over about 1,100° F, the remaining material burns until it is consumed. Ideally, well-dried wood will burn through the second stage evenly, without sparks, and with minimum smoke, and spend a long time burning in the third stage.

Thus, wet firewood will take more heat to dry it and will produce fewer Btu's to warm the room. So dry firewood will not only start better but will also produce more usable Btu's.

Of course, not all species used for firewood have the same density. A 12-inch-diameter oak log is more dense than an aspen log and, at the same moisture content, will produce many more Btu's. Table 2. Btu's produced by various species.

Table 2. Btus' produced of various species at 20% moisture content.

	Weight per cord	Btu's per cord
Aspen	2,295	14,700,000
Basswood	2,108	13,500,000
Hard maple	3,757	24,000,000
Paper birch	3,179	20,300,000
Red oak	3,757	24,000,000
Soft maple	2,924	18,700,000
White ash	3,689	23,600,000
White oak	3,800	26,500,000
White pine	2,236	14,300,000

Finally, the efficiency of your wood-burning device (stove, furnace, or fireplace) will determine how many Btu's are used for heat and how many go up the chimney. A standard fireplace is only 10% to 15% efficient whereas the newer gasification wood furnaces are over 90% efficient.

So, You Want To Sell Firewood?

If you are interested in drying firewood commercially, see "Drying Firewood – Why, How, and Where Is the Money?" in the July 2011 issue of Sawmill & Woodlot Management magazine at www.SawMillMag.com. Drying firewood for sale in Minnesota is regulated by the Department of Agriculture. For information, call Terry McDill at 651-201-6448.

Drying Firewood

Since moisture content of firewood can have such a big impact on the amount of heat produced, drying is an important factor.

Jim Ballenthin, Backus, might be one of MFA's most experienced people when it comes to drying wood. He built his own solar kiln in which he can get lumber down to 6% moisture content. He uses this lumber in making furniture, paneling and flooring.

If you are interested in building a solar kiln, Jim Ballenthin recommends that you first do some research on the Internet. In particular, look for material by Eugene M. Wengert who is a professor in the Department of Forestry and Wildlife Ecology at the University of Wisconsin, Madison. Once you've done the research, call Jim with your final questions at 218-682-2055.



Wood gasification furnaces are the only ones likely to be permitted under coming EPA regulations. Dave Anderson, Classic Outdoor Furnace, is shown here with a Central Boiler E-Classic model. By burning the wood and then burning the gas that comes off the wood at 2000 degrees Fahrenheit, it achieves 92% efficiency. Virtually no smoke comes out of the chimney which means it can be used in urban areas where the old, smoky outdoor furnaces would not have been permitted.

The one "catch" to these efficient gasification furnaces is that the wood fuel has to be dry, the drier the better.

For more information, contact Dave Anderson in Isanti at 763-444-9000.

But, Jim doesn't believe in using a kiln for drying firewood. He believes that in July properly stacked and covered firewood will dry as fast in the air as it would in the kiln. Jim's specifications for drying firewood are:

- Locate the stacks in a sunny area. "Let the sun do the work!"
- Start the stacks one foot off the ground so there is good air circulation under the pile.
- To let the air move through, pile the firewood loosely and make the piles no more than four feet wide.
- Cover the piles with scrap corrugated steel panels or similar material.



Meet a Tree

Black Ash

Black ash is a slow growing tree commonly found in swampy woodlands. Although it is typically found growing on peat and muck soils, it will grow on fine sands and loamy soils. Black ash can tolerate a wide range of pH conditions but does not tolerate shade. It can be found from western Newfoundland to eastern North Dakota and south to Iowa, Indiana, Ohio, and West Virginia.

Black ash flowers in May or June, about the same time as leaf-out. Seeds ripen from June to September and are dispersed from July to October. Although black ash can go as long as seven years between good seed crops, seeds remain viable for up to eight years. Young black ash will also readily sprout from cut stumps.

On better sites, trees may grow to a height of 60 to 70 feet with diameters ranging from 12 to 24 inches. In northern Minnesota, many black ash stands have experienced a die-back that seems to be related to the weather. Black ash is also susceptible to Emerald Ash Borer.

Did you know - Black ash is one of the last trees to leaf-out in the spring and one of the first trees to drop its leaves in the fall.

For a great photo of black ash, see page 6 of the booklet *Ash Management Guidelines for Private Forest Landowners*. Also find more information on black ash on page 11.

Woodland in Oronoco: Member Profile of Ken Nichols and Sharon Wonsil

“A few years ago, we considered moving to central Wisconsin for better job opportunities”, said Ken Nichols. “We decided against the move mainly because we didn’t want to leave our home and the land we’ve owned for 20 years. In particular, we have invested a lot of time in planting trees and now we really enjoy watching them grow.”

The home and land that Ken and his wife Sharon Wonsil own is 20 acres located outside Oronoco (Try pronouncing the name of the town. It’s fun!), which is just north of Rochester.

“We’ve planted about 4,000 trees over the years,” Ken said. “Some of them were planted during planting parties with friends and relatives. The rule during those events was ‘no food or beer until the trees are in the ground!’ Now we often hear from someone who participated in one of those parties who wants to know how their trees are doing. The parties and the people who helped plant them are all part of the memories we cherish.”

When Ken and Sharon bought the place, it was a farmstead with few trees. “During the first year we planted black walnut seedlings but the deer ate most of them,” Ken said. The walnuts finally did take hold and are now 30 or 40 feet tall. In addition to walnuts, they have planted red, white, pin and swamp white oak, Norway spruce, red cedar, high bush cranberry, shag bark hickory, various fruit trees and lilacs.

Now that the trees have grown, watching birds and wildlife out the window is a regular enjoyment. Sharon said, “When we first moved in after purchasing the land, we’d race to the window to see a squirrel. Now we see all sorts of birds and wildlife. Recently I saw a screech owl stick its head out of a snag tree cavity the pileated woodpeckers had made. Last winter we enjoyed watching the antics turkeys would go through trying to get at the sunflower seeds in a bird feeding platform.”

Ken has been an enthusiastic attendee at various training sessions. He’s taken many Woodland Advisor classes. His favorite class was the Wisconsin Woodland Leadership Institute for which Blandin Foundation provided scholarships for MFA members in 2008 and 2009. The Institute is currently on hold while more funding sources are sought. When it does become active again, Ken would highly recommend it. In fact, he said, “If I had a bunch of dollars, I’d contribute it to the Institute to get it going again right now!”

Ken and Sharon got a Stewardship Plan the year they moved in and had it updated last year. “There is a lot of talk about the economic value of Stewardship Plans,” Ken said, “but I think caring for the woods is good for the soul.”



Top: Ken and Sharon are shown here with two Memory Trees, trees that were planted by friends in memory of a deceased parent or sibling.

Above: The fruit of the high bush cranberries is a winter food source for the birds Ken and Sharon enjoy watching.

Left: The black walnuts planted as seedlings 20 years ago are now 30 or 40 feet tall.

Timber Industry Struggling After Burst Housing Bubble

Tom Robertson, Minnesota Public Radio

Bemidji, Minn. — A few years ago, the Norbord Minnesota plant west of Bemidji was one of four plants in northern Minnesota making a plywood-like product called oriented strand board. Now Norbord is the only plant still running.

Since new home construction started to tank in 2007, the company has tried to keep its doors open and maintain jobs for about 140 employees, and provide work for loggers and haulers, said Jack Wallingford, the plant's general manager.

"We've been successful in that regard," he said. "Past that, it's been a rough stretch."

Although timber is a \$17 billion dollar industry in Minnesota, an anemic housing market has put segments of that industry on life support. Thousands who depend on timber for their livelihood have lost their jobs. Plants and mills have shut down.

Timber related businesses that survived the economic shake-up are hanging on, waiting for a recovery. But economists say that could be years away.

Until a rebound occurs, times will be tough for any business tied to housing. That includes wood floor manufacturers and producers of board lumber, cabinets and windows. Wallingford said most companies that survived aren't making any money.

"There's been way more quarters we've lost money than what we've made," he said. "Since the bottom of the crash ... we've had very few profitable quarters as a company."

Timber economists estimate Minnesota lost more than 5,000 timber-related jobs since the start of the recession, including about 600 logging and hauling jobs.

Rajala Companies, a wood products producer in Bigfork and Deer River, has trimmed its workforce from 300 to 70, vice president John Rajala said.

"It's horrible," he said. "It's just, we're in complete survival mode."

The family-owned company has survived by producing boards for the wood packaging industry and also by exporting some hardwoods to China. But it focuses on products marketed directly to local consumers, things like specialty wood flooring and maple tongue and groove ceilings.

The company is losing money, but with those new niche products, Rajala hopes it can stay afloat until new home construction picks up.

"Family owned, independent sawmills like ours in the lake states region [are] probably two-thirds gone, literally just gone, at least in terms of employment," he said. "In most cases just literally, they're bankrupt or there's been consolidation and closures."

There is a bright spot for the timber industry. Paper



Left: Norbord's plant

Below: Norbord General Manager Jack Wallingford says most companies tied to home construction aren't making any money these days. The Norbord Minnesota plant west of Bemidji is the only big oriented strand board plant left in the northern part of the state. Three other plants closed during the recession because of the housing market crash.



manufacturers like Boise in International Falls and UPM-Blandin in Grand Rapids

are doing relatively well and managed to avoid job cuts. A recent report from the state Department of Natural Resources found that the state's paper industry rebounded more quickly from the recession.

"They've been running at pretty good capacity and pricing is strong," said Don Deckard, an economist with the department's forestry division. "We've seen some softening of prices in August, but it's still a profitable business right now."

Low demand for raw timber from Minnesota forests has driven down prices. That's hurt private landowners, who've largely stopped selling timber. The state continues to sell cheap timber to support the industry, but it's meant a 20-percent drop in gross timber revenue for state coffers.

The future of the timber economy will likely include new technologies, including wood-based bio-fuels, bio-chemicals and bio-plastics. But Deckard said that while new bio-businesses in some states are getting big federal grants to develop those industries, that's not happening much in Minnesota.

"Wisconsin is getting it, Michigan is getting it. Ontario is getting it. But we're not," he said. "We're not getting anything. Nothing is moving. It's a very frustrating situation."

Deckard said the problem is that neighboring states offer more incentives for bio-businesses, including help with financing.

Experts say the real key to reviving the timber industry is a recovery in new home construction.

Homebuilding in the United States has dropped nearly 75 percent from a peak of about two million homes in 2005. Economists predict new housing starts won't hit the one million mark again until 2013.

Upcoming Events

Find more events, and more information on these events, at the MFA website, www.MinnesotaForestry.org or by calling MFA at 218-326-6486.

Wednesday, October 26

- 12pm – 1pm Biomass Harvesting as a Wildlife Management Tool (Online). Presented by Jodie Provost, Private Woodland Owner Wildlife Specialist of the Minnesota Department of Natural Resources. All classes are recorded for later viewing. There is no charge, but registration is required in order to obtain connection instructions. Find details and registration information at www.MinnesotaForestry.org.

Wednesday, November 16

- 12pm – 1pm Biomass Energy: A Private Sector Perspective (Online). Presented by Bruce Labno, senior consultant with Golder Associates, Roseville. All classes are recorded for later viewing. There is no charge, but registration is required in order to obtain connection instructions. Find details and registration information at www.MinnesotaForestry.org

PLANNING AHEAD FOR 2012

Friday & Saturday, March 9 & 10, 2012

- Minnesota Family Woodlands: A Landowner Conference (Duluth Entertainment & Convention Center). This “Don’t Miss” event is a successor to the Million Acre Conferences that have been held in Duluth. For more information, contact Stephanie Kessler, 218-326-1130 or at MFWConference@yahoo.com.

Friday & Saturday, May 18 & 19, 2012

- MFA’s Annual Meeting and Spring Field Days (Forest History Center, Grand Rapids). For more information, contact event chair, Dave Roerick at 218-326-3774 or DRoerick@gmail.com.

Here’s one more reason to dislike deer ticks

Adopted with permission from a piece by Christopher Snowbeck in the St. Paul Pioneer Press



Researchers have discovered a new strain of bacteria that sickens humans by way of tick bites and apparently poses a health risk that’s unique to Minnesota and Wisconsin. Since 2009, at least 25 people from Minnesota and Wisconsin have been sickened by the bug, which is a form of the bacteria called “ehrlichia.” But public health experts said there’s no need for panic. “I don’t think people should be scared,” said Dave Neitzel, an expert in vector-borne diseases at the Minnesota Department of Health. “This is just the latest in a series of organisms being described, and I’d be surprised if it’s the last.”

Two other ehrlichia species are known to cause tick-borne illnesses primarily in the southern and south-central United States, and another strain of the bacteria exists in Europe and Asia. But the genetic fingerprint of the new bacterium - first seen in 2009 at a hospital in Eau Claire - has never before been documented, according to Mayo Clinic researchers.

“As the deer tick population continues to spread and increase across Minnesota and Wisconsin, we are likely to see increasing incidence of this new infection, just as we have seen with Lyme disease and anaplasmosis, which are transmitted by the same tick species,” said Susan Paskewitz, an entomologist at the University of Wisconsin-Madison, in a news release.

What To Look For

Symptoms of the ehrlichia bacteria include fever, muscle pain and headache. Severe disease could produce gastrointestinal, kidney, respiratory and central nervous system problems and, in rare cases, death. It can be treated with antibiotics.

For MFA members, the two best online sources of woodland information are the MFA web site, www.MinnesotaForestry.org and www.MyMinnesotaWoods.UMN.edu.

Here’s what’s new at MyMinnesotaWoods:



- Woodland Options series recap: Stewardship Planning, Property Taxes, and Your Property Online
- Woody biomass webinar series update
- Poem of the month: Five Landscapes
- Northern Minnesota phenology report
- Four Keys to Successful Seed Collection
- Oriental bittersweet in Minnesota: A presentation by MDA

Have a question about your woodland? Post it on the Discussion Board. You may be surprised at how many good responses you get!

For the live version, with much more info on each topic, visit MyMinnesotaWoods.org

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