

# Minnesota MFA Woodlands

Minnesota Forestry Association

[www.MinnesotaForestry.org](http://www.MinnesotaForestry.org)

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

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MFA Board Meetings  
DNR Cambridge Office  
10 a.m. – 3 p.m.  
• October 9, 2018

Conference Calls  
8 – 9 a.m.  
• August 14, 2018  
• September 11, 2018  
• November 13, 2018  
• December 11, 2018

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## Jensens Receive Tree Farmer of the Year Award

*By Kassandra Tuten, Editor*

On Friday, Oct. 13, 2017, Minnesota Forestry Association (MFA) held its annual meeting and Tree Farm Awards. Receiving the 2017 Minnesota Tree Farmer of the Year Award was Peter and Debra Jensen, who have owned property in Sherburne County for nearly 30 years. The Jensens oversee a total of 166 woodland acres.



*Peter and Debra Jensen*

In December 2001, the Jensens' property became a certified tree farm, and has been under a written forest management plan for 14 years.

As an active member of the MFA, and as a recipient of the 2017 Tree Farmer of the Year Award, Peter said it is meaningful to the pair to be a part of a community of people who believe in taking care of the forest.

Since purchasing the first 80-acre parcel, the Jensens have embraced the land ethic of the previous landowners, Jack and Dorothy Grill, who did not want to see the land developed.

After building their home and settling in, the Jensens spent some years enjoying the land and learning about what they had. Much of the focus for the beginning phases of work was laid out in their first land stewardship plan.

"The Grills had planted 20 acres in mixed pines in the late '50s, and it needed work," said Peter in a 2015 interview with then Minnesota Woodlands editor Linda K. Dinkel. "We pruned and thinned, and [eventually] hired loggers to clear-cut the stand of scotch pine. We're amazed how the birch have regenerated in the clear-cut. It's really becoming a beautiful woods without much input from us."

*Continued on page 5*

### Save the Date: October Annual Meeting and Tree Farm Awards

MFA's annual meeting and Tree Farm Awards will take place on Friday, Oct. 5 followed by a Field Day on Saturday, Oct. 6. The annual meeting will begin at 4 pm. with dinner, and the presentation of Tree Farm Awards and guest speaker will follow.

This year, the annual meeting and field day will take place at Camp Ripley, located just north of Little Falls. The 53,000-acre Camp Ripley was recently awarded the U.S. Secretary of Defense's Environmental Award for Natural Resources Conservation. They have a large prescribed burning program, do native prairie restoration and numerous wildlife projects and conduct various forestry management projects on their lands.

For those wishing to stay overnight Friday, a block of rooms have been reserved at a cost of \$30 per room.

More details to follow in the registration packet to be sent out later this summer.

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## How and When Timber is Cut and Your Next Forest

A Walk in the Woods was held July 10 in Bob Asproth's forest near Mahtowa. The Kettle River Woodland Council led 24 woodland owners and forestry professionals through a summer of 2015 timber harvest. Participants learned how to steer the direction a forest takes by harvesting large, medium, or small areas, or by time of year harvested. Participants also learned that combining smaller harvests across property lines into a bigger one adds forest management options and harvest revenue; and how timber harvests improve wildlife habitat.

The harvest followed Bob's goals of improved wildlife habitat and new forest growth spelled out in his forest stewardship plan, written by forester Jan Bernu. Bob and Craig Ferguson (then a Sappi forester, now with the DNR) set up a timber sale on Bob's land. During the Walk, participants walked through regrowth in large area harvest. If winter harvested, large area aspen harvests tend to regrow as mostly aspen. Because this was a summer harvest, a mixture of maple, birch, oak and aspen are regenerating.

Participants then visited half-acre patch cuts on neighboring county land that was harvested at the same time. In certain types of forest, patch cuts tend to favor a mixture of aspen, maple, birch and oak. The gaps provide variety in regrowing tree species and tree age classes, and leave areas of mature forest between the gaps. This diversity makes for a resilient forest, better suited to handle insect, disease and storm damage. Harvesting gaps every 15 years or so provides no-maintenance wildlife food plots or a place to plant white pine, red oak or white spruce. Patch cutting works well only for certain types of forests and harvest situations.

Back in Bob's forest, participants looked at a small group selection harvest area where the tree canopy is left mostly intact. This method is usually utilized in maple-basswood stands when the goal is renewing those species. Small group selection is an expensive logging method. However, balanced with the large area cuts where a logger can make money, some small group harvesting was affordable.

Greg Bernu and Mark Westphal of Carlton County explained how the county had stands of aspen that were ready to harvest. When there is a county land harvest, they inform neighboring landowners of a harvest opportunity on their own forests. Bob was interested,

*Continued on page 7*

*Right: Participants checked out a half-acre patch cut, anchored with a red oak seed tree. Birch and maple seed trees are on the edge.*

*Below: Participants gathered at the landing. Host Bob Asproth, leaning on the tailgate, demonstrates his deer-fly catching hat.*



# Understanding the Soil in Your Woodland

From My Minnesota Woods, May 2018

Soils are the foundation of every forest, and understanding the properties of soil is important in woodland management. Knowing the basic features of soil, such as its physical and chemical properties, can provide insights on how productive a woodland can be. A solid understanding of soils can maximize ecological, economic, recreational and aesthetic values of woodlands.

## Texture

The physical properties of soils start with the texture. Soil texture ranges from sand to clay.

**Sand** is a coarse grain ranging from 2 to 0.05 mm in size. A good rule of thumb is if you can see the individual grain, it is likely sand. Sand typically holds little organic matter and therefore tends to be lighter in color. Soils with high percentages of sand are well-drained due to the low amount of surface area and high porosity between grains. Sandy sites are typically less rich in nutrients and in Minnesota are often occupied by pines.

**Silt** is a finer textured soil with smaller grain sizes, often compared to talcum powder. Silt particles range from 0.05 to 0.002 mm in grain size. It tends to be moderately to poorly well-drained with higher organic content and is richer in nutrients compared to sand. Associated species of silt-dominated woodlands typically include both hardwoods and conifers such as white spruce.

**Clay** is the finest textured soil with high organic content and nutrients. Grain sizes are less than 0.002 mm, which typically makes them poorly drained. Hardwood species are commonly found on clay-dominated soils.

In reality, the soil on a property owner's piece of land is likely some combination of all three textures. By using the soil texture triangle, property owners can determine the soil texture on their land.

## Bulk Density

Soil bulk density, which is also a factor of soil texture, is the mass of dry soil per unit volume.

Bulk density is an important factor that influences soil

productivity and is a good indicator of soil compaction. Bulk density relates to the structural support of soil, water and solute movement, and aeration. If a soil is compacted, it will display a high bulk density which can limit water and solute movement and have less air space.

The result of compacted soils can cause a lack of oxygen in the soil which can limit root growth and the movement of nutrients within the soil. This will create a less productive woodland and can potentially take decades to recover. Clay soils tend to have the highest bulk density, followed by silt and sand. For more information, the USDA Natural Resources Conservation Service provides info on bulk density and its importance.

## Chemistry and Biology

Soil chemical and biological factors also influence the productivity of a woodland.

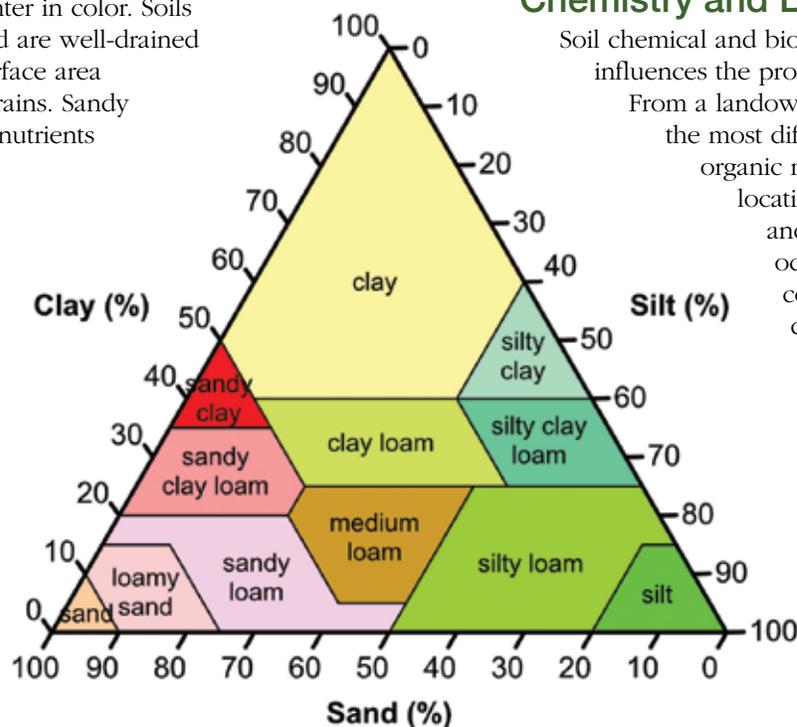
From a landowner perspective, this is the most difficult factor to assess. Soil organic matter (SOM) is the main location where these chemical and biological interactions occur. Organic matter contains all the living and decomposing material from the forest including woody debris, living microbial communities, and fungi. Greater SOM tends to lead to a more nutrient-rich site with greater productive potential and higher ecological diversity.

## Geology

It is important to understand how the

location of a site influences its soil. This is largely due to the unique geological history of Minnesota. Eight- to ten-thousand years signaled a retreat of glaciers that covered the state, an event which formed the soils that are present today. Soils will be different based on their geographic location across the state, and even topographic location throughout a site.

To determine what kind of soil a property or area of interest has, the USDA has an interactive resource. Known as the Web Soil Survey, it allows individuals to find detailed soils information for their property. To learn more, visit <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>



# Creature Feature

By Jodie Provost, MN DNR Private Land Habitat Specialist

## American Goldfinch and the Thistle Connection

The American Goldfinch (*Spinus tristis*) is a cheerful, yellow jewel of summer and common guest at bird feeders. Flying in a bouncy, up and down pattern, they make themselves known by gently and evenly calling po-ta-to-chip, po-ta-to-chip. Widely distributed, they breed across southern Canada and the northern and central United States. As a creature of open country with scattered trees and shrubs, they are typically found in old fields, young successional stands, roadsides, riparian floodplains, brushy openings, forest edges, savannas and prairie groves. They breed across Minnesota in these suitable habitats. Some are present year-round in the southern part of our state, although more commonly they winter in nomadic flocks in the southern United States and northern Mexico.

**Unique Molter** This small, charming songbird has a few characteristics that make it unique. Goldfinches are the only finch that molts its body feathers twice a year, once in late winter and again in late summer. Males in spring and early summer sport vivid yellow feathers to alert prospective mates of their vitality. Black foreheads and wings, with a touch of white above and beneath their tails, polish off their garb. Adult females are duller yellow below and olive above. In winter, both sexes are drab, but they are given away by their short conical bill, pointed notched tail, blackish wings with pale white wing bars and lack of streaking.

**Seed Menu Only** Another distinctive quality of this lively bird is their vegetarian diet, which is among the strictest in the bird world. Goldfinches are foliage and ground gleaners that eat seeds exclusively and insects only inadvertently. Where thistles, asters, sunflowers and other annual wildflowers of the Aster family are present, goldfinches abound. Seeds of grasses and trees, such as alder, birch, red cedar and elm, also provide nourishment.

**Late Nester** In spring, male goldfinches boisterously sing a long and variable series of twitters and warbles. However, they are rather late nesters among our North American birds, not nesting until late June to August (yet another unique quality), and have an inclination to nest semi-colonally. This delay in nesting allows them to capitalize on mature thistles, milkweed and other favored plants.

Females weave a tight, three-inch wide, open nest cup of grass, rootlets and plant fibers in an herbaceous plant such as a thistle, shrub or small tree. It is secured to branches using spider silk, lined with plant down, then graced with two to seven pale, bluish-white eggs. If a female decides a neighbor's nest is too near, she rips out its lining. After an



incubation of 12-14 days, and nestling period of 11-17 days, young finches take their maiden flight. If a brown-headed cowbird, a nest parasite, lays an egg in a goldfinch nest, the cowbird chick will perish due to its inability to survive on seeds alone. One to two broods are raised in a summer.

**Robust Great Lakes Population** Fortunately, the American Goldfinch is abundant and of low conservation concern. Climate change is not expected to create major challenges for it, and no major changes have occurred to its historical North American breeding distribution. A very slow population decline has been detected across its range; however, our Minnesota population has shown a steady increase. During the Minnesota Breeding Bird Atlas surveys of 2009 - 2013, it was the 14th most abundant species detected. Some of the highest breeding densities of goldfinches occur across our Great Lakes states.

**As Always, Habitat is Key** To pull our weight in sustaining a healthy goldfinch population, we can most effectively benefit this popular bird by maintaining and creating open woodlands, savannas and fields where ecologically suitable in our local landscapes. Native vegetation such as thistles, other Aster family wildflowers, and milkweeds should be encouraged in these habitats, as well as in our gardens, backyards, pollinator habitat patches, wildlife openings and roadsides. These activities will benefit many wildlife, including species of concern such as monarchs, native bees, red-headed woodpeckers and American kestrels.

**Conserve Native Thistles** Because goldfinches have a special connection to thistle, and native thistles, like all native plants, are part of the foundation of a resilient and healthy ecosystem, we should conserve them. They provide seed, down, nectar and foliage as food and cover for wildlife, and sequester carbon, protect water quality, and add color and beauty to our lives. In turn, wildlife that use thistle pollinate its blooms and spread its seed.

Nine thistle species exist in Minnesota – five native (Flodman's, Swamp, Hill's, Field and Tall) and four non-native (Canada, Musk, Bull and Plumeless). Take care to identify them if controlling non-native thistles, so the natives go unharmed. A starter hint is to remember that our five native thistles all have smooth stems (i.e., no spiny wings). Canada



## UNIVERSITY OF MINNESOTA EXTENSION

For MFA members, the two best online sources of woodland information are the MFA website at [www.minnesotaforestry.org](http://www.minnesotaforestry.org), and the University of Minnesota Extension Forestry website at [www.myminnesotawoods.umn.edu](http://www.myminnesotawoods.umn.edu).

Thinking of harvesting  
timber from your land?

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You will be sent a packet of information  
with no cost or obligation to you.

**218-879-5100**

Thistle also has a smooth stem, but is differentiated by its colony-forming habit, and from Flodman's Thistle by its lack of a white, wooly appearing stem and lower leaf surface. The Xerces Society and Minnesota Board of Water and Soil Resources have helpful thistle guides at [xerces.org/native-thistle-guide](http://xerces.org/native-thistle-guide) and [bwsr.state.mn.us/native-vegetation](http://bwsr.state.mn.us/native-vegetation) (in Featured Plant Archive).

**Bird Feeder Boost** In addition to conserving their preferred habitats and wildflowers, we can also aid and enjoy goldfinches, and other birds, by placing and regularly cleaning bird feeders filled with sunflower and thistle (Nyjer) seed. Most any feeder style will attract them, and they are content to feed on the ground as well.

With good stewardship, this spirited, winged jewel will continue to inhabit and adorn our backyards to back forties.

### *Tree Farmer of the Year continued*

Over the years, Peter and Debra have developed a symbiotic relationship with the land, and they are continually learning its language and responding to its needs. They understand that planting, growing, tending and harvesting trees are just a small part of caring for the land.

Recently, Peter said he has enjoyed time spent learning more about the undergrowth that has emerged after the (reluctant) removal of a number of oak trees due to oak wilt. On certain parts of the property, said Peter, 95 percent of the oaks had to be removed.

"We didn't want to cut the trees down, but we had to," explained Peter. "But it's been fun to see the new growth that's emerged now that we've taken a lot of the mature trees down."

Making lemonade out of lemons, Peter said he has spent the past spring learning to identify and gather a number of berries, bushes and other plants emerging in the oaks' absence.

"And I'm looking forward to learning about mushrooms on my property," he added.

"And, in about 80 years, we will have a big mature forest again," he chuckled.

Peter and Debra focus their objectives on sound forest management, which has included pine harvest (clear cut), selective timber harvest in oak, tree planting (bare root and direct seeding), pruning for blister rust, pine thinning and buckthorn control. The couple implements all of these with a great sense of stewardship and appreciation for the land that benefits wildlife, the environment and their community. In fact, the pair allowed their property and good work to be used as a teaching tool, having hosted the 2015 Minnesota Forestry Association Field Day during which time they welcomed more than 200 people onto their property.

Over the last five years, the Jensens have harvested 468 cords of oak saw logs and firewood, 1.15 tons of grindings/chips, 400 cords of pine saw logs, and eight cords of split firewood. They have also been harvesting white pine seed from an old giant on the property, and direct seeding them in post-harvest areas. Additionally, they are encouraging the beneficial tree regeneration in these same areas.

In 2016, the Jensens were selected by the Sherburne Soil & Water Conservation District (SWCD) as the 2016 Outstanding Conservation Cooperator.

"Pete and Debra Jensen are phenomenal people who have an innate love of caring for the land entrusted to their care," said Gina Hugo, Forest Resource Specialist with Sherburne SWCD. "Their motivation seems to lie in the intangible benefits they receive from their land; which is simply inspiring."

Hugo has worked with the Jensens since 2014.

To learn more about the Jensens' story, revisit the December-January 2015 edition of Minnesota Woodlands, for a member profile: [minnesotaforestry.org/newsletters/](http://minnesotaforestry.org/newsletters/).

# Maintaining Honey Bee Health

By *Kassandra Tuten, Editor*

A colony of honey bees is an amazing organism when it is healthy.

The individual bees that comprise a honey bee colony deliver to the superorganism what it needs: Pollen and nectar collected from flowering plants that contain nutrients necessary for growth and survival.

According to “Why Does Bee Health Matter? The Science Surrounding Honey Bee Health Concerns and What We Can Do About It,” a scientific paper authored by Marla Spivak, Zac Browning, Mike Goblirsch, Katie Lee, Clint Otto, Matthew Smart and Judy Wu-Smart, honey bees with access to better and more complete nutrition exhibit improved immune system function and behavioral defenses for fighting off effects of pathogens and pesticides.

Since 2006, there has been a decrease in honey bee health. Frequently referred to as colony collapse disorder, this erosion of honey bee health has affected most of North America and parts of Europe. According to information gathered by Spivak and her peers, survey data indicate that the average winter mortality of colonies across the United States has ranged from 22 to 37 percent, and the average yearly mortality from 35 to 45 percent. These losses are well above the historical 15 to 18 percent that beekeepers consider acceptable winter attrition, putting economic pressure and responsibility on beekeepers to replace their losses or divide their surviving colonies.

The public should be concerned about honey bees because their pollination services contribute directly to the economy and food security.

Human nutrition depends heavily on honey bees for the pollination of fruits and vegetables. In fact, the annual revenue from the sale of honey bee pollinated fruit, vegetable, and nut crops in the United States in 2012 was estimated at \$11.7 billion, and, in 2015, commercial beekeepers in the United States removed approximately 156 million pounds of honey from their honey colonies, an agricultural product worth nearly \$387 million.

Further, state the authors, consumers reap the benefits of pollination services honey bees provide to crops grown for seed production.

“The value of seed produced from legume hays, carrots, and onions is estimated to be \$5.4 billion,” wrote the authors. “High-quality forage (e.g., alfalfa hay) grown from seed produced via honey bee pollination aids other sectors of agriculture such as livestock and dairy production.”

Honey bees also support diverse assemblages of plant communities that sustain wildlife and, intangibly, add to the quality of life.

Over the last decade, the public has taken an interest in the plight of honey bees, leading to increased funding for research as well as a number of federal and state legislative



*Photos by Kassandra Tuten*

initiatives to help increase and protect forage for honey bees and other pollinators. In addition, most states have, or are developing, their own pollinator protection plans to enhance communication and collaborations among growers, beekeepers, pesticide applicators, and policy-decision makers with the goal of mitigating pollinator decline while maintaining economic growth.

While most scientists agree that there are four main stressors producing unwanted outcomes on honey bee health, namely parasites, pathogens, pesticides and poor nutrition, there are some measures private landowners can take to increase the health of their local bee populations.

Good nutrition, which for bees comes from the landscape, is the foundation of a healthy, productive colony. Modifying landscape practices to better accommodate honey bees,

native bees, and other beneficial insects is just one of the ways to generate real and positive change.

According to “Why Does Bee Health Matter,” bees require a nutritional balance of protein, amino acids, carbohydrates, vitamins, and minerals, which they obtain from the pollen and nectar of flowering plants. Honey bees forage up to five miles from their colony in search of food, with the average foraging trip being approximately two miles. (A two-mile radius around a bee colony encompasses an area of 8,000 acres.)

Bees rely on flowers to supply them with the food they need to survive. Some flowers (e.g. tomatoes) provide only pollen, the main source of protein for bees. Other flowers (e.g. clovers) provide both nectar and pollen, thus providing both protein and carbohydrates.

In times of natural flower dearth, colonies must be fed supplemental protein and carbohydrates (usually liquid sugars) to maintain food supplies and brood rearing. These artificial feeds do not provide the same health benefits as abundant and diverse flowers, and they are not a solution to the problem.

There are hundreds of different bee species in Minnesota, and different types of bees prefer different flowers due to the physical size or shape of the bees and the flowers, nutritional needs, seasonal differences in the activity of different bee species, etc.

Providing a diverse array of plants will help ensure that you support a diverse population of bee species. To support the proper health of honey bees, woodland owners can incorporate hawthorn, pussy willow, false indigo, swamp milkweed, and sunflowers, just to name a few.

For more information on pollinators and what you can do to create healthy environments for them, visit the University of Minnesota’s Bee Lab website at [beelab.umn.edu/honey-bees/research](http://beelab.umn.edu/honey-bees/research).

*Note: A major source of information for this article was “Why Does Bee Health Matter? The Science Surrounding Honey Bee Health Concerns and What We Can Do About It.” Also utilized were resources made available on the University of Minnesota’s Bee Lab website.*

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### *How and When Timber is Cut continued*

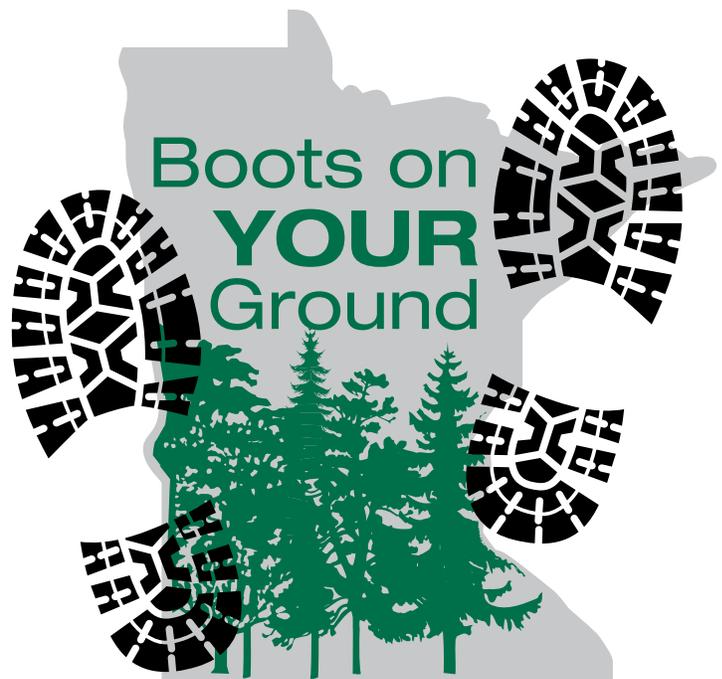
and the harvests were combined into one operation. Using access through Bob’s land made a summer harvest possible. Summer wood, and larger combined harvests, commands a higher price. It also gave John Palmer, the logger, flexibility to work on Bob’s better-drained ground during rainy periods.

Using a tracked feller buncher and a grapple skidder, John cut and hauled full-length trees to the landing. There, the logs were limbed, cut to length and stacked. The tops and limbs were chipped for biomass. Bob is happy with the condition of his forest after the harvest. The soil and uncut trees are in good shape. Bob checked in on the harvest every day to see how things were going and answer any questions—a good way to avoid problems.

John grubbed out stumps and graded a harvested area for Bob to seed a food plot. The food plot, along with the other harvest areas, has young plants of all kinds that attract wildlife and pollinator insects.

Kelly Smith of Carlton County Soil & Water Conservation District shared how lakes and streams surrounded by healthy forests tend to have better water quality and fishing. Part of having forests is the landowner being able to afford owning them, which often means selling timber. For forestry planning or project funding assistance, contact your local SWCD.

Woods Walks help private landowners connect with others and learn how to achieve their forestry goals. If you would like to attend future walks, or host one, contact Kelly Smith, Carlton SWCD, 218-384-3891, or Paul Swanson, Pine SWCD, 320-216-4240.



## Upcoming Events

Find more events, and more information on these events, at the MFA website, [www.MinnesotaForestry.org](http://www.MinnesotaForestry.org), or by calling MFA at 218-879-5100.

### Buckthorn Removal Demonstration

**Saturday, Sept. 8, 10 a.m. - 12 p.m.**

Learn how to identify common and glossy buckthorn and the beneficial look-alikes you should protect, including updated best management practices, and weed establishment vs. native regrowth after removal. Learn how to safely use buckthorn herbicides. Register online by Wednesday, Sept. 5.

Location: Applewood Preserve, Maplewood  
Contact: 651-249-2170

For more information: [apm.activecommunities.com/maplewoodmn/Activity\\_Search/buckthorn-removal-demonstration-and-removal/6137](http://apm.activecommunities.com/maplewoodmn/Activity_Search/buckthorn-removal-demonstration-and-removal/6137)

### Genetic Impacts of Harvesting and Regeneration

**Tuesday, Sept. 18, 12-1 p.m.**

Together, we will investigate commonly used harvest systems and discuss regeneration options that maintain genetic variation in the next generation and provide opportunities for addressing changes in climate. No prior knowledge of genetics or forest genetics required.

Speaker: Andy David, UMN-FR and Cloquet Forestry Center

Cost: \$20 per webinar or \$50 for the entire 2018 series

For more information: [sfec.cfans.umn.edu/2018-webinar-sep](http://sfec.cfans.umn.edu/2018-webinar-sep)

### Emerald Ash Borer, Ask the Forester

**Tuesday, Oct. 2, 1-2:30 p.m.**

Stations will be set up to help you identify ash trees, learn the signs and symptoms of EAB, and figure out what to do. Our City Forester will be on hand to answer your EAB questions. Pre-registration required.

For more information: [apm.activecommunities.com/maplewoodmn/Activity\\_Search/emerald-ash-borer-eab-ask-the-forester/6143](http://apm.activecommunities.com/maplewoodmn/Activity_Search/emerald-ash-borer-eab-ask-the-forester/6143)

### Fall Native Shrub and Tree Hike

**Saturday, Oct. 6, 1-2:30 p.m.**

Explore the nature center yard and hike the trails. Meet native trees and shrubs that provide food and shelter for wildlife along with fall color and winter interest. Learn which common nursery shrubs are invasive and should be avoided. FREE; register by Oct 5.

Register online: [maplewoodnaturecenter.com](http://maplewoodnaturecenter.com) and click on the Register-Online-Go button, or call 651-249-2170.

## Regenerate Your Forest

Itasca County Private Woodlands Committee and a host of forestry partners invite landowners to the Fall Forestry Field Day, Regenerate Your Forest, to take place on Sept. 8 at Itasca Community College (ICC).

Morning session topics include an introduction to forest nursery, forest regeneration and cost share opportunities, and the afternoon bus tour includes several forest regeneration field site visits within Itasca County.

- Registration begins at 8:30 a.m. for the morning sessions
- Buses depart for afternoon field site visits from Itasca Community College



Minnesota Forestry Association

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[www.MinnesotaForestry.org](http://www.MinnesotaForestry.org)

*Change Service Requested*



- \$20 registration fee includes lunch and tour transportation

The Itasca County Fall Forestry Field Day is presented in partnership with University of Minnesota Extension, MN DNR, Minnesota Forestry Association, Ruffed Grouse Society, MDHA Itasca Chapter and MDHA Habitat Committee, Itasca County Land Department, Sappi, and Blandin Forestry.

To register, or for more information, contact Josh Donatell at [josh.donatell@state.mn.us](mailto:josh.donatell@state.mn.us) or call 218-328-8912.