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Ohio's Amphibians •
Hemlock Woolly Adelgid •
Ohio's Forest Economy •
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### Species List

<table>
<thead>
<tr>
<th>Species</th>
<th>Size</th>
<th>Type</th>
<th>Price per 1000</th>
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<td>American Arborvitae</td>
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<td>Seedlings</td>
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<td>Norway Spruce</td>
<td>16-24”</td>
<td>Transplants</td>
<td>$785.00</td>
</tr>
</tbody>
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As the first “Thoughts From the Woods” on Thanksgiving eve, another six inches of snow has fallen on Snowy Oak Tree Farm. Here in eastern Pierpont Township we are blessed with 10 to 12 feet of snow annually. While we enter winter, we await the spring season when the sweet sap ascends the sugar maple trees.

Just like the sugar maple, the Ohio Tree Farm Committee looks forward to 2014. The 33 members of the committee include 18 tree farmers, 13 service or consulting foresters, and 4 industrial foresters. Service forester Joe Pupieri serves as vice chairman and tree farm program administrator. 2011 Tree Farmer of the Year, Donna Lange, continues her organizational skills as secretary. Attorney Jim Pry keeps us fiscally responsible by serving as treasurer. Those retiring from the committee include Janet Sweigert Grigg, Jim Elze, and Bob Wilson. A special thanks to them for their years of service as well as Teresa and Gene Sipos for the last two years serving as committee co-chairs. We welcome six new members to the committee: Mike Lanave, Don Rawn, Dewey Thompson, Noah Mechling, Dan Bartlett, and Dave Coldwell.

Our committee is a diverse group from all regions of Ohio. We all share our love of the land, yet we are not a homogeneous group. Tree farmers own land for different reasons and manage their forests because of different priorities. That diversity makes us a strong organization. If you have a friend or neighbor who is interested in becoming a member of the Ohio Tree Farm organization, please contact Joe Pupieri at (419) 429-8314.

The winter is a good time to review your forest management plan. A consulting or service forester may initiate your management plan or fine-tune a detailed plan that is already in place. The American Forest Foundation’s step by step on-line guide to planning your property, MyLandPlan.org, can be of assistance.

Your plan should note any special sites, animals, and plants as well as any invasive, threatened, or endangered species. Keep a record of all management activities that can provide useful accounting information and proof that your tree farm is a business. Make sure your property lines are marked. Ask yourself, “Do my trees look healthy?” “Are my trees growing properly?” Now is the time to plan management activities such as crop tree release, prescribed burns, a harvest, invasive species control, and order those seedlings for spring planting. Your forest management plan along with pictures and records can serve as a diary of your tree farm so you may be able to share your tree farm’s legacy with your family and others.

Speaking of legacies, the Ohio Tree Farm Committee gives a special thanks to the Dr. W.J. Lavelle Family for sharing their Stonewall Tree Farm as the site for the 2013 Tree Farmer of the Year tour. Their multi-generational tree farm is beautiful and bountiful, and provides excellent tasting maple syrup. Also special congratulations to Wayne Lashbrook and Walt and Donna Lange for being inducted into the ODNR Division of Forestry’s Forest of Honor on October 10, 2013. They are very deserving of this honor.

May all of you stay warm this winter and be prepared for all those woodland management projects in the spring! Remember the National Tree Farm Convention in Pittsburgh, Pennsylvania July 17-19, 2014. Let’s make sure there are a lot of Buckeyes attending. Also, plan to attend the OFA annual meeting March 5-6, 2014 in Columbus and support the Ohio Tree Farm luncheon and silent auction on Thursday.

One last “Thought From the Woods” comes from the land ethic writings of Aldo Leopold: “Conservation is a state of harmony between men and land.”

Dr. Paul and Joann Mechling live in Pierpont, Ohio, where they enjoy their Snowy Oak Tree Farm. Dr. Mechling is a retired veterinarian and serves on the ODNR Division of Forestry Forest Advisory Council, the Ohio Wildlife Council for the ODNR Division of Wildlife, the Ashumbula County Soil and Water Conservation District Board of Supervisors, and the Ashumbula Scenic River Advisory Council.

Are you planning to tap into the bounty of your sugar maples this winter or maybe next? It’s never too early to start managing your woodland, or parts of it, with the production of maple syrup in mind. Your Division of Forestry service forester, as well as private consultant foresters, can help you develop a part of your woodland management plan to enhance the viability of your sugar maples. (Red maples also produce sap, but the sugar content is lower than sap from sugar maples so it takes more sap to make your syrup.) Just remember, the bigger the crown, the higher the quantity of sap. This entails a management strategy slightly different from managing for timber production where you want tall and straight trees, with few limbs. For maple sap production, you’ll want big crowns with lots of limbs.

A few management strategies might include:

1. Choose sugar maples in your woodland that have the highest sugar content. You can test that with a refractometer.
2. Then, thin out the trees whose crowns are touching the crowns of your chosen sugar maples, thus enabling the maples’ crowns to spread even further.
3. And keep those grape vines off the trees.

Woodland management techniques for maple syrup production are not complex, and they will greatly improve your prospects for a sweet result. Speaking of working in the woods – when you’re out and about amongst your trees this winter, remember to look up. Beware of the snags and damaged branches above you – especially if you are using a chainsaw. And remember when you are hauling in all that firewood, don’t stack it too close to the house – it creates an invitation for termites and other critters to invade.

Best wishes to you in the New Year!

~

Your 2014 Ohio Tree Farm Committee ~

Paul Mechling, Chair; Joe Pupieri, Vice Chair and TF Program; Dan Bartlett, 2014 TF of the Year Nominating Forester; Adam Beichler, Area 2 Tree Farm Inspector Chair; Tom Berger, Awards, Dean Berry, TF Inspectors Chair; Mike Beneson, By-Laws; Dave Coldwell, 2014 Tree Farmer of the Year; Lee Crocker, NWTF; John Jolliff, Area 1 Chair; Abby and Alex Kindler, Silent Auction; Mike Lanave; Donna Lange, Secretary; Walt Lange, Education; Skip Malaska, Web; Galien Maxwell, Publicity; Eric McConnell, OSU Extension; Steve McGinnis, Area 4; Noah Mechling, Tom Mills, OWJ Advertising Manager; Jim Pry, Treasurer; Cotton Randall, ODNR Forestry Rep.; Don Rawn; Clayton Rico, Area 3; Cassie Ridenour, OFA Rep.; Steven Rist, ODNR Forestry Rep., Clarence Roller, Mentor Chair; Richard Rudy, Publicity; Dave Schatz, Nominations; John Schmidt; Gene and Teresa Sipos, Immediate Past Co-Chairs; Kathy Smith, OSU Extension; Dewey Thompson, Bruce Willis, Nominations; Ad Hoc Members Bob Boyles, Chief, ODNR Division of Forestry; John Dorka, Executive Director, Ohio Forestry Association; Bob Mulligan, ODNR Division of Soil and Water Resources; Greg Smith, Editor, The Ohio Woodland Journal; and Sue Wintering, Project Learning Tree-Ohio.

www.ohiotreecfarm.org
In Memory of Harold L. Bower

July 28, 1941 – October 17, 2013

The Ohio Tree Farm Program lost a good friend and a good forester on October 17, 2013. Harold Bower was a service forester who influenced many landowners throughout his career.

Harold graduated from Linden McKinley High School in 1959 and earned a bachelor of science degree from West Virginia University in 1964. Harold was hired by the Ohio Department of Natural Resources in 1964 and became a service forester in central Ohio in 1965, working 35 years with the Division of Forestry where his impact was far-reaching.

Harold was a dedicated forester who was involved with numerous organizations throughout his career. He was an active Tree Farm Inspector and served as an area chair for a number of years. He was a member of the Society of American Foresters (SAF) and received the Communicator of the Year award from the Ohio SAF. Harold also provided a quarterly article for the Ohio Woodland Journal entitled “Woodland Plants.”

Harold worked closely with Kenyon College located in Gambier in Knox County. He helped them establish native prairie areas and a riparian corridor on college property. He mentored college students through the Kenyon College Outdoor Center. He also worked with the Headwaters Education Center in Morrow County and the Leopold Environmental Center in Delaware County.

One of Harold’s particular interests was the American chestnut and all of the research that surrounded it. Harold spent a lot of time keeping up with the latest findings and shared his knowledge with landowners. Fellow foresters would also call to get Harold’s opinion on any questions relating to current chestnut research. Over the years, Harold obtained seeds and seedlings of American chestnut from various individuals in the Midwest and out-planted them in his project area and around the state. Harold was truly an advocate of nourishing the American chestnut tree back to its existence.

Harold lived in Mt. Vernon and was involved with many things throughout the community. He volunteered as a Boy Scout leader, a baseball coach, and enjoyed working with the local elementary school where he took time to read natural resource related books to the students. He was also a man of faith and taught Sunday school class at Grove Church of Christ.

Harold was part Native American and was involved with Native American pow-wows in the region. He conducted church services at the pow-wows and also planted and maintained the trees in the Arbor Circle. Harold shared his knowledge of Native Americans with students and landowners, and was proud of his heritage.

With all that Harold has done, he will be missed by his fellow foresters, forest landowners, and members of his community.
Activity 4: Sounds Around

Our ears are constantly being bombarded with sound—so much so that we automatically “tune out” a lot of it. This activity helps children “tune in” to the sounds of their environment and helps them to explore the sounds of nature.

Nature provides us with many unforgettable sounds. Breezes whistling through the leaves, birds singing early in the morning, and streams gurgling over rocks are just some of the sounds children recognize.

Doing the Activity

Sound helps animals in a number of ways. Explain to children that having ears on opposite sides of our heads enables us (and other animals) to judge the location a sound comes from. Find a safe, comfortable outdoor space where children can sit quietly. Then have them close their eyes and listen to the sounds around them for several minutes.

• Provide pencils, crayons, and paper, and ask children to make a “sound map.” They can put an X in the middle of a page to represent themselves, and then use pictures or words to show the locations of the sounds around them. Encourage them to use lines to show directions and distances.

• When reviewing the sound map, ask children:
  - Which sounds did you like most? Least?
  - What else did you hear? What might have caused the sounds you heard?

• Ask children to name some animals that are active at night. Do they have any special adaptations for seeing and hearing in the dark? For example, foxes have large ears for picking up small sounds. Have children mimic fox ears by cutting off the bottoms of paper cups and gently fitting the cups over their ears (see example below). How does this change what you hear? Can you add any new sounds to your map after listening with these new ears?

Adapted from Activity 4: Sounds Around from Project Learning Tree’s PreK-8 Environmental Education Activity Guide.
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After the initial discovery of hemlock woolly adelgid (HW A) on native eastern hemlock trees in Ohio in Meigs and Washington counties in early 2012, a group of concerned individuals, organizations, and agencies in the Hocking Hills Region began meeting to discuss the potential local impacts and how they could help plan for its eventual arrival.

The local tourism industry in Hocking County is a driving force for the area’s economy, and the threat posed by HW A could impact nearly everyone in the county tied to tourism.

Initially, the hope was that this group of representatives from state agencies, youth camps, nature preserves, and other area property managers with hemlock forests would be proactive by preparing plans and laying the framework for surveys and treatments with some time before HW A made its way from the Ohio River region to the heart of the Hocking Hills.

Since this infestation was discovered on state lands, plans began immediately for treatments. In April and May 2013, treatments of infested trees were completed on over 500 trees. Included were all hemlocks within the acre known to be infested and a small buffer zone around it to either eliminate the HW A population or significantly reduce their numbers and the potential of this pest to move to new trees within the broader Hocking Hills Region.

Treatments included a range of options, including soil drenches, tree injections, and basal sprays, and were conducted by ODNR divisions of Forestry, Natural Areas, and Parks and Recreation, and Ohio State University Extension. Many infested hemlocks were located in areas not easily accessible. One of the keys to treating all of the necessary trees was to involve staff trained to use ropes and safety harnesses to tie off and treat trees while hanging off the cliff edges.

This approach to HW A treatment was different from most management in that a buffer zone was treated in addition to the known infested trees. Research has shown that pre-treating hemlock trees prior to HW A infestation can actually decrease the ability of those trees to resist the pest in later years, so it is not normally recommended. Since the infestation found at Cantwell Cliffs was small, no other areas in the region were found to be infested, and the overall environmental and economic threat to the region is so great, it was decided that the opportunity to catch any infested trees that were missed during surveys in the immediate area outweighed the future threat to the trees from HW A.

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FOCUS ON FOREST HEALTH, CONTINUED...

Surveys of the Hocking Hills Region for HWA continue, and now will include surveys for new populations as well as monitoring the treated hemlocks at Cantwell Cliffs. Each hemlock that received treatment will be monitored closely to evaluate the success of the treatment and help develop plans for treating other areas in the future. Other efforts currently underway in the Hocking Hills to reduce the impact of HWA include inventories of hemlock trees on state lands, trainings for state park, state forest, and state nature preserve employees on survey techniques, and inter-agency planning and cooperation for the development of a region-wide approach to HWA management.

Plans are being made for fundraising to support future HWA treatments to save Hocking’s hemlocks. Local efforts are being led by the Hocking Hills Conservation Association. To find out how you can help protect the hemlocks in the Hocking Hills, visit www.hemlockheroes.com and become an Ohio Hemlock Hero!

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ODNR Division of Forestry
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(740) 439-9079
jeremy.scherf@dnr.state.oh.us

### Kilbuck Valley Woodland Interest Group
Bob Bannig
3511 Clearview Pl.
Wooster, Ohio 44691
(330) 345-5017

### Muskingum River Woodland Interest Group
Dave Bomford
3594 Evans Rd.
Naugatuck, Ohio 43830
(740) 893-2474
mtlaud@wmdhstwam.net
www.mrwig.org

### Northeastern Ohio Forestry Association
James Elite
2140 Merle Road
Salem, Ohio 44460
(330) 337-8974

### Northwest Ohio Woodland Association
John Mueller
Joe Purdy
ODNR Division of Forestry
952 S Lima Ave.
Findlay, Ohio 45840
(419) 424-5004
john.mueller@dnr.state.oh.us
joe.purdy@dnr.state.oh.us

### Southern Ohio Forestland Association
P. Gentry
3813 Potts Hill Road
Bashford, Ohio 45612
(740) 634-2470

### Southwest Ohio Woodland Owners Association
Pat McGloin
ODNR Division of Forestry
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<td>1-800-GO-STIHL</td>
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</table>

A worker is roped in for safety while treating hemlock trees at the edge of Cantwell Cliffs.
The 689-acre Coldwell Family Tree Farm is located in southern Columbiana County, Ohio, with 620 acres of managed woodlands. The farm is owned and managed by families Dave and Lisa; Jed, Emily, and Silas; Jared, Carly, and Kinsley; and Josh and Cinda Coldwell.

The Coldwell family has managed their woodlands since the mid-1980s. The original parcel of woodland was purchased in 1983, with the most recent parcel added in 2012. In 1988, the Coldwells contacted Jim Elze, their state service forester at the time, for forestry assistance. The family’s commitment to active woodland stewardship resulted in the tree farm becoming officially certified with the American Tree Farm System in 2003.

Tree farmer Dave Coldwell got into forestry consulting while cutting firewood in a neighbor’s woods. When Dave was working there one day, the neighbor was approached by a lumber company about selling timber. Having learned the details of the proposed timber sale, Dave advised his neighbor that the company’s offer was extremely low, and he offered to help with a sale. Dave didn’t know everything about forestry, but being a tree farmer, he was familiar with most of the dos and don’ts of timber sales. After the timber was marked and bid out, the landowner got 10 times the amount of the first offer, and still had a nice woods remaining. Other friends and neighbors in the community heard of Dave’s success and started calling Dave. Out of helping his neighbors, Dave founded Coldwell Timber Consulting, LLC.

Uncharted territory

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Jared Coldwell with a planed elm board cut from the tree farm and ready for marketing.

Woodland work

Tree farmers are no strangers to work in the woods, but the scope of the woodland work completed at the Coldwell Tree Farm is very impressive. In the last 10 years, the Coldwells have completed over 250 acres of wild grape vine control, 175 acres of thinning of various types, and 75 acres of invasive plant control for multiflora rose and bush honeysuckle. The Coldwell’s tree planting projects on the farm have included 36 acres of open fields planted to various species of timber trees and 25 acres of reinforcement tree planting in lightly stocked woodlands. Many of the practices were accomplished under the Environmental Quality Incentive Program (EQIP). All of the thousands of man hours of work on the tree farm have been meticulously documented in Dave’s work journal.

Wildlife management

With Dave being retired from the Ohio Division of Wildlife, management of wildlife is an important part of the tree farm. Hunting with permission is allowed for friends, family, and neighbors. Deer hunting is closely monitored, since the property is managed under the Quality Deer Management philosophy. The family ensures there is quality habitat, proper population density, and standards on what age and size deer may be taken. In the past couple of years, this philosophy has paid off with some very impressive specimens harvested.

The Coldwells have taken the “next step beyond” in offering consulting forestry services and marketing character wood from trees that would have been left in their woods. These are in addition to the standard tree farm tours, school programs, newspaper articles, TV appearances, volunteering, and advocacy done by many active tree farmers. Please join me in congratulating the Coldwells on their well-deserved recognition.

They host a field day for Rural Scholars to inspire junior high students to go to college for agriculture or natural resources. Recent tree farm tours and trainings have included the Northeastern Ohio Forestry Association (NEOFA), USDA Natural Resource Conservation Service (NRCS), and a tree farm tour and workshop focused on CAUV.

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Old Man Winter's grip is finally relaxing, as the days are getting noticeably longer and the air holds the promise of spring. Many woodland animals have begun their annual rituals. Birds are migrating from tropical areas and claiming nesting territories and many mammals are seeking out the dens and burrows they will use to birth their young.

Amphibians are also gearing up for spring after the long winter. You might think their first priority would be to find food, but what really tops their priority list is mating. Amphibians need water to lay their eggs, so springtime is for frogs, toads, and salamanders means heading to water to court mates and breed. Some species that have overwintered in pools or ponds, like the green frog, will have much shorter voyages than others. The spotted salamander, for example, will undergo amazing migrations in droves to reach breeding waters. At times, the forest floor can be so full of salamanders migrating on a mission, it will appear to be moving – quite a sight to see!

There are 15 species of frogs and toads in Ohio, and 24 species of salamanders. While most of us are familiar with the hopping, croaking, peeping frogs and toads, salamanders remain Ohio's secretive and silent amphibians. Most salamanders spend their lives in the dens and burrows they will use to birth their young. Other species, notably woodland frogs, take only modest precautions: they descend below the frost line by digging into the soil or by following abandoned rodent burrows or rotted root channels to an underground lair. But others, notably woodland frogs, take only modest precautions: they brave severe cold on the forest floor, insulated only by a thin layer of leaf litter, bark, and other debris. Overwintering in such exposed sites allows these frogs to emerge at the earliest signs of spring. But on the downside, virtually guarantees that they will experience temperatures low enough to turn their bodies into ice.

Freeze avoidance is a popular strategy of terrestrial species as well. Some, such as toads and mole salamanders, descend below the frost line by digging into the soil or by following abandoned rodent burrows or rotted root channels to an underground lair. But others, notably woodland frogs, take only modest precautions: they brave severe cold on the forest floor, insulated only by a thin layer of leaf litter, bark, and other debris. Overwintering in such exposed sites allows these frogs to emerge at the earliest signs of spring. But on the downside, virtually guarantees that they will experience temperatures low enough to turn their bodies into ice.

For any amphibian, even brief exposure to subfreezing temperatures threatens serious injury or death. Severe cold disrupts bodily functions in many ways, for example, by slowing the blood’s circulation and the delivery of oxygen and nutrients to cells. Cold can alter the molecular structure and functions of enzymes and other proteins, disrupting metabolic processes. And, of course, it can cause animals to freeze, which creates some additional problems. Notably, when a portion of the body water changes from a liquid to a solid (ice), the fluid that remains unfrozen becomes laden with extra salts and other perturbing substances. The process also causes cells to shrink, which, if taken to an extreme, can cause their membranes to buckle and fail. Ice itself can rupture delicate vessels and shear apart the cells within tissues. For the vast majority of amphibians, and other animals, too, these conditions are overwhemingly damaging.

Remarkably, though, a handful of woodland frogs are specially adapted to survive the repeated freezing and thawing of their bodies. This phenomenon, known as freeze tolerance, also occurs in several other vertebrates, including salamanders, turtles, snakes, and lizards. Among Ohio's amphibians, freeze tolerance is known in the spring peeper, chorus frog, gray tree frog, Cope's gray tree frog, and wood frog. Of these, the wood frog is by far the best studied with regards to understanding this fascinating adaptation.

Unlike its aquatic cousins, the wood frog is highly terrestrial and prefers cool, moist woodlands, often far from permanent water. In early autumn, they suspend feeding and retire to a simple depression in the soil, where they will spend the next four or five months beneath a modest blanket of leaf litter. A snowfall will add insulation, but the frogs nevertheless can cool enough that their bodies freeze. They may remain continuously frozen for hours or weeks, and can experience several bouts of freezing and thawing over the course of a typical winter.

It is fitting that the wood frog's ability to survive freezing peaks in midwinter, when it counts the most. The tolerance begins to develop in autumn as the frogs undergo physiological changes that prepare them for the cold weather ahead. One of these changes is a limited breakdown of muscle tissue to form the waste product urea, which, although usually lost in the urine, now accumulates to high levels. They also amass huge amounts of glycerin, which is the storage form of glucose, the blood sugar in frogs and humans alike. With this extra glucose safely stored in the liver, the hefty frogs can avoid the complications of diabetes while also remaining poised to unleash a flood of glucose the instant freezing begins. The sugar enters the bloodstream and circulates to cells throughout the body where it, along with urea, helps reduce freezing damage. These compounds, called cryoprotectants, work by lowering the solution's freezing point, just as automotive antifreeze does. They effectively limit the Continued on page 20
amount of ice that can form as the frog continues to cool. This is a critical function because even freeze-tolerant frogs cannot withstand the freezing of more than 65 percent of their water. Cryoprotectants such as glucose and urea (and glycerol in tree frogs) play other important roles, such as reducing cell shrinkage, fueling and regulating metabolism, and stabilizing membranes, proteins, and other cellular components.

Regulation of the freezing process is another key to the freeze tolerance adaptation. Usually, freezing is triggered when frost in the surrounding soil permeates the frog’s moist skin, causing a wave of ice to spread uniformly throughout its body. However, as a back-up, specialized ice-nucleating bacteria within the frog’s gut can initiate freezing. Controlled freezing ensures that ice accumulates slowly, which helps the cells cope with the many stresses that develop within frozen tissues. A frozen frog’s skin is frosty and its eyes are filled with ice crystals.

How Low Can They Go?
The wood frog’s capacity to survive freezing is well matched to the temperatures it experiences throughout the winter. Frogs indigenous to Ohio can recover from freezing at temperatures as low as 21°F, but what about their brethren living near the northern reach of their geographic range, which extends to the Arctic Circle? Those northern frogs, which have adapted to their harsh climate over thousands of years, can easily tolerate temperatures near 0°F. If that seems unimaginable, consider that some species of Siberian salamanders can survive being frozen to below minus 31°F! Artwork courtesy of Michael F. Wright

It has no heartbeat or blood circulation, does not breathe, and is unresponsive to the touch. Inside, pockets of ice fill the spaces among organs, and the organs themselves are shrunk. Narrow plates of ice appear within and around muscles, which are unable to contract. By any reasonable standard the frog would be considered dead, but, amazingly, it is very much alive. In fact, just a bit of warming brings on a swift recovery. The heart resumes its rhythmic contractions even before the frog has fully melted. Breathing and blood circulation return next, followed by muscle contractions and, eventually, locomotion. Most bodily functions are restored within a day or two of thawing, although a longer recuperation is needed if the freezing was especially severe. So, are frozen frogs science fiction? Most definitely not: they are science fact!

The long, cold winter has ended…now what?
After the thaw, literally for some of Ohio’s woodland frogs, amphibians’ first priorities are to seek out a mate and begin breeding. For frogs and toads, this is marked by the chorus of croaks, peeps, trills, and quacks coming from ponds, pools, and other bodies of water. The wood frog is one of the first of the frogs and toads to begin calling, as early as February. Its unique ‘quacking’ call can be heard from vernal pools surrounded by woodlands. A vernal pool is a shallow pool that holds water through spring, and sometimes into the summer if the pool is large, and does not contain fish. These seasonal water bodies are some of the most diverse and dynamic of ecosystems. For breeding amphibians, they are a critical breeding site lacking the fish that would prey on tadpoles and larvae. Vernal pools that are surrounded by woodlands provide an ideal breeding site for woodland-living amphibians.

The wood frog’s chorus is followed by the spring peeper’s serenade, which typically begins in March. Spring peepers are perhaps the loudest frog given their size in Ohio. An adult spring peeper is only ½ inch to 1 inch long, but encounter a body of water full of these tiny peepers and it can be deafening. Many woodland owners are very familiar with the peeper’s easily recognized, repetitive ‘peeping.’

As spring progresses into summer, all 15 species of Ohio’s frogs and toads will be out and about serenading the opposite sex. The green frog is one of the last species to begin calling in May and continues to call into August when most other species have fallen silent. The green frog call sounds like a plucked banjo string. Green frogs are also the species that when startled, will leap from the banks of a pool back into water with a surprised, if not indignant, “Meep!”

One of the best strategies to determine what frog and toad species you have on your property is to conduct an acoustic survey. As each frog or toad has its own unique call, species can be determined just by listening. The best time to go out and listen is at night—better yet, a rainy night. Head out to a vernal pool or pond and don’t forget a flashlight. Spring peepers, gray tree frogs, and western chorus frogs like to call from vegetation on or close to the shore, while wood frogs, bullfrogs, and green frogs like to call from in the water. Shining your light over the surface of the water can reveal many sets of eyes peeking just above the water level. Visit the Ohio Frog and Toad Webpage (www.ohioamphibians.com/frogs/frogspecies.html) to learn each species call.

Searching for salamanders
As the silent amphibians, salamanders can be a bit more challenging to find. Knowing when and where to look is the best strategy. Mole salamanders, named because they spend much of their lives underground as moles do, are the largest terrestrial salamanders in Ohio. The largest salamander in the state is the endangered aquatic hellbender.

The spotted salamander, a common mole salamander, can reach up to 8 inches in length. The best time and place to spot a spotted salamander is late winter into early spring, when many of the mole salamanders emerge and migrate to vernal pools. The great migration sometimes occurs in late February, sometimes in March, but is marked by the first thawing spring rain. Put on a raincoat, grab a flashlight, and head out to a vernal pool that night (travels are safer at night for salamanders), and if you don’t encounter migrants on the way, perhaps you will find the pool swarming with mating salamanders. If you miss this nighttime activity, head out to the pool during the day to look for egg masses, or maybe around May with a dip net to look for larvae.

Other great places to search for salamanders are within and along the shores of streams, creeks, or seeps. Check under large, flat rocks or logs along the banks. Salamanders typically found in these environments are small, delicate, and brightly colored. For example, the longtail salamander has a bright yellow to orange body speckled with dark brown or black spots. The redback salamander has a dark brown to black body with a red-orange stripe down its back.

Be cautious when searching for salamanders. Chemicals on our skin can irritate the permeable skin of amphibians, so if handling is necessary, for example to safely reposition the salamander before you place the rock back over it, make sure your hands are wet and free of soaps or lotions.

For more information on salamanders, check out OSU Extension’s bulletin “Getting to Know Salamanders in Ohio: Life History and Management,” available at www.woodlandstewards.osu.edu under the ‘Publications’ tab.

Interesting in attending a class to learn more about vernal pools and amphibians?
Check out the Ohio Woodland Stewards Program for woodland wildlife classes at www.woodlandstewards.osu.edu

For more information of all of Ohio’s frogs, toads, and salamanders, visit The Ohio Frog and Toad Webpage http://www.ohioamphibians.com/index.html.
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John Yoder started with a portable sawmill, sawing construction lumber for farmers. As the business grew, he began buying timber from landowners, sawing furniture-grade lumber and railroad ties. In 1956, he built a stationary facility on his farm. John’s sons took over ownership in the 1960s. The third generation of Yoders is now learning to manage and grow the business.

Today, Yoder Lumber Company has three Ohio production facilities (Charm, Berlin, and Buckhorn) and a log distribution yard in Parkersburg, West Virginia, operating as Rolling Ridge Woods, Ltd. Combined, the three Ohio plants produced 18 million board feet of hardwood lumber in 2013.

Lumber is available in standard thicknesses, 4/4 through 16/4. Rift and quartered lumber is a specialty. In addition to rough lumber, Yoder offers a variety of services and value-added products. Width-sorting, color-sorting, ripping, and surface requests from wholesale and retail customers are important considerations.

According to operations manager Trent Yoder, production of graded and sorted lumber, kiln dried, and green lumber has increased to 70,000 board feet per day. Value-added services include S2S, S4S, ripped-1-edge, custom moulding, and glued panels and pieces.

The Berlin facility is home to Yoder Lumber’s corporate offices and their 44,000 square foot dimension plant. Dimension plant specialties are glued panels, squares, and a variety of mouldings fashioned primarily of red oak, beech, or poplar.

To better serve hobbyists and retail customers who require only small quantities of hardwoods, Yoder Lumber opened an online store. The e-Bay store offers an assortment of pre-bundled packs and pieces of unique character not available at local lumber yards.

Yoder Lumber Co., Inc. has a long history of exporting through a number of brokers. In 2003, Yoder Lumber began developing its own overseas presence in Europe and Asia. Paul Dow, export sales manager, said, “With the continuing contraction of the secondary hardwood lumber industry in North America, we are taking an active position to increase our international presence.” Yoder started out by exhibiting at the larger trade shows in Germany and China, and has branched out to additional Asian and European markets. Exports now make up a growing part of sales, about 1.5 million board feet annually.

Yoder Lumber’s philosophy is that forest operations should be managed in a way that promotes future growth. To encourage good forest stewardship, Yoder is a registered Master Logger through the Ohio Forestry Association. Master Loggers are trained in forest management techniques which help minimize damage from logging activities, including soil erosion. In addition to purchasing timber from private landowners, the company manages 1,700 acres of its own timberlands, taking measures to ensure productive harvest for many years to come.

In the summer of 2014, Yoder Lumber will celebrate its 70th anniversary with the company’s valued customers and employees. ❖

Yoder Lumber Company is a founding, 20-year sponsor of the Ohio Woodland Journal. The company was also featured in the Winter 2011 issue.
In 2001, Ohio's forest products industry directly employed 71,000 people and produced $11.7 billion in outputs. This report was based off of an economic analysis conducted by Ohio State University professor Dr. Leroy Hushak in 2004. Much has happened in the industry nationally, the Appalachian region, and here in Ohio since 2001. There have been fluctuations in the national economy which have directly affected wood demand, an accelerated decline in the domestic wood furniture and pulp and paper industries that traditionally consumed large amounts of American lumber and fiber, and a boom in personal computer and internet usage making paperless information much easier and convenient to access. Further, inflation-adjusted prices for standing hardwood timber at the end of 2012 were down over 50 percent as compared to their 2004 price highs. Recently, analyses of Ohio's forest products industry have been conducted at the county level (these publications can be found under Hushak's report on the 2001 data. For more information on the input-output analysis, please refer to McConnell (2012). Our largest observed decrease in value (in total value added of Forestry and Logging) likely coincides with the 30-year lows in timber prices and 45-year lows in lumber prices obtained at the height of the Great Recession. One explanation could be the loss of logging firms coupled with a subsequent hiring of unemployed, unskilled labor by employers.

### Results

We have largely observed a decline in the economic contributions of Ohio's forest products industry in real terms. Labor income and employment in the Forestry and Logging sector were the only values to increase between 2001 and 2011 (Table 1). Wages and benefits increased in Forestry and Logging 5.8 percent, and the actual number of full and part-time jobs increased by 4.36 percent (Table 2). Jobs have been lost at relatively high rates within Wood Products Manufacturing (-32.9 percent), Paper Manufacturing (-32.9 percent), and Wood Furniture Manufacturing (-39.7 percent). Overall, the number of full and part-time jobs in Ohio's forest products industry has dropped by (-3.35 percent). This was similar to the change seen in the U.S. South between 2001 and 2009 (-3.34 percent). The industry has also declined over 20 percent in dollars contributed through output, labor income, as well as value added since 2001 (Table 2).

### Discussion

Ohio's economy overall is showing similar trends to the forest products industry; except the percent changes in dollar values of Ohio's economy overall are not as severe as what has been lost in the forest products industry. Ohio's entire economy has fallen by (-5.31 percent) in output, (-5.17 percent) in labor income, and (-8.72 percent) in total value added. Employment level declines between 2001 and 2011 were similar for the forest products industry (-33.5 percent) and the state as a whole (-36.6 percent). Our other three industry measures have seen much larger declines than Ohio's entire economy (table 2).

### Methods

We used IMPLAN® (Impact Analysis for PLanning, an input-output modeling system) to assess the economic contributions of Ohio's forest products industry at the state level. We conducted an input-output analysis to quantify values of economic interest, such as the number of jobs created (employment), employee compensation (labor income), the value of an industry's total production (output), and the total value added, which includes employee compensation, proprietary income, other property type income, and indirect business taxes. Input-output analysis follows the movement of commodities from producer to the final consumer. We compared our economic values in 2011 to those of Hushak's report on the 2001 data. For more information on the input-output modeling system (IMPLAN), please refer to McConnell (2012).

### Table 1. Economic contributions of Ohio’s forest products industry in 2001 and 2011. All dollar amounts are reported in millions of dollars; employment is reported as the number of full and part-time jobs. The 2001 dollar values have been inflation-adjusted to represent 2011 year dollars for a more accurate comparison.

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>Employment</th>
<th>Labor Income</th>
<th>Value Added</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry and Logging in 2001</td>
<td>2,178</td>
<td>$21,000</td>
<td>$222,000</td>
<td>$441,000</td>
</tr>
<tr>
<td>Contribution % of Forest Products Industry</td>
<td>3.07%</td>
<td>0.53%</td>
<td>3.71%</td>
<td>2.52%</td>
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<tr>
<td>Forestry and Logging in 2011</td>
<td>2,273</td>
<td>$32,300</td>
<td>$343,000</td>
<td>$812,000</td>
</tr>
<tr>
<td>Contribution % of Forest Products Industry</td>
<td>4.82%</td>
<td>1.12%</td>
<td>0.85%</td>
<td>1.33%</td>
</tr>
<tr>
<td>Wood Products Manufacturing in 2001</td>
<td>20,392</td>
<td>$585,000</td>
<td>$1,147,000</td>
<td>$2,241,000</td>
</tr>
<tr>
<td>Contribution % of Forest Products Industry</td>
<td>28.7%</td>
<td>21.8%</td>
<td>19.2%</td>
<td>18.5%</td>
</tr>
<tr>
<td>Wood Products Manufacturing in 2011</td>
<td>13,689</td>
<td>$525,000</td>
<td>$620,000</td>
<td>$2,245,000</td>
</tr>
<tr>
<td>Contribution % of Forest Products Industry</td>
<td>29.0%</td>
<td>18.2%</td>
<td>15.5%</td>
<td>16.4%</td>
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<tr>
<td>Paper Manufacturing in 2001</td>
<td>29,808</td>
<td>$2,176,000</td>
<td>$3,434,000</td>
<td>$11,280,000</td>
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<tr>
<td>Contribution % of Forest Products Industry</td>
<td>42.0%</td>
<td>55.4%</td>
<td>57.4%</td>
<td>65.4%</td>
</tr>
<tr>
<td>Paper Manufacturing in 2011</td>
<td>20,609</td>
<td>$1,531,000</td>
<td>$2,317,000</td>
<td>$9,143,000</td>
</tr>
<tr>
<td>Contribution % of Forest Products Industry</td>
<td>42.4%</td>
<td>53.7%</td>
<td>57.9%</td>
<td>66.9%</td>
</tr>
<tr>
<td>Wood Furniture Manufacturing in 2001</td>
<td>18,613</td>
<td>$876,000</td>
<td>$1,179,000</td>
<td>$2,550,000</td>
</tr>
<tr>
<td>Contribution % of Forest Products Industry</td>
<td>26.2%</td>
<td>22.3%</td>
<td>19.7%</td>
<td>14.9%</td>
</tr>
<tr>
<td>Wood Furniture Manufacturing in 2011</td>
<td>11,232</td>
<td>$778,000</td>
<td>$1,033,000</td>
<td>$2,086,000</td>
</tr>
<tr>
<td>Contribution % of Forest Products Industry</td>
<td>23.8%</td>
<td>27.0%</td>
<td>25.8%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Total Forest Products Industry in 2001</td>
<td>70,991</td>
<td>$3,931,000</td>
<td>$5,981,000</td>
<td>$17,493,000</td>
</tr>
<tr>
<td>Contribution % of Ohio’s total economy</td>
<td>1.04%</td>
<td>1.18%</td>
<td>1.10%</td>
<td>1.69%</td>
</tr>
<tr>
<td>Total Forest Products Industry in 2011</td>
<td>47,205</td>
<td>$2,887,000</td>
<td>$4,005,000</td>
<td>$13,656,000</td>
</tr>
<tr>
<td>Contribution % of Ohio’s total economy</td>
<td>0.73%</td>
<td>0.92%</td>
<td>0.80%</td>
<td>1.40%</td>
</tr>
</tbody>
</table>

### Table 2. Percent change (from 2001 to 2011) of our four aggregated sectors and the total forest products industry in Ohio.

<table>
<thead>
<tr>
<th>Industry Type</th>
<th>Employment</th>
<th>Labor Income</th>
<th>Value Added</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forestry and Logging</td>
<td>4.36%</td>
<td>53.8%</td>
<td>-84.6%</td>
<td>-58.7%</td>
</tr>
<tr>
<td>Wood Products Manufacturing</td>
<td>-32.9%</td>
<td>-38.8%</td>
<td>-45.9%</td>
<td>-30.7%</td>
</tr>
<tr>
<td>Paper Manufacturing</td>
<td>-32.9%</td>
<td>-28.7%</td>
<td>-32.5%</td>
<td>-18.9%</td>
</tr>
<tr>
<td>Wood Furniture Manufacturing</td>
<td>-39.7%</td>
<td>-11.2%</td>
<td>-12.3%</td>
<td>-17.9%</td>
</tr>
<tr>
<td>Total Forest Products Industry</td>
<td>-33.5%</td>
<td>-26.6%</td>
<td>-33.0%</td>
<td>-21.9%</td>
</tr>
</tbody>
</table>
the remaining businesses. Also, timber harvest volumes in Ohio have declined in recent years, and Ohio has seen a 45 percent decrease in the state’s timber margin (delivered log value minus standing timber value) over the last 35 years. The timber margin includes not only harvest and hauling costs but also the profits derived from each.

While the forest products industry was declining in most of the economic measures displayed here, it still contributed 1.4 percent of the output, and almost 1.0 percent of the labor income to Ohio’s overall economy. These values may seem low, but the relative contributions (the percentages, not dollar values) are comparable with the forest products industry’s standing in the U.S. South’s economy. Overall, Ohio’s forest products industry directly contributed $13.6 billion in output, 47,200 jobs, $2.9 billion of labor income, and $4.0 billion of total value added in 2011 (table 1). While the forest products industry has declined in almost all of our observed values, Ohio’s economy overall has as well from 2001 to 2011.

Suggested Readings


Montgomery County
One of Ohio’s 88 Greats

By Eric McConnell

Montgomery County contains 37,000 acres of forestland. Responsible managing these woodlands provides community value to the county’s forest industries. These Montgomery County businesses employed 1,197 people while directly generating $422.8 million in output and $24.1 million in taxes in 2010. Sources: United States Forest Service Forest Inventory and Analysis, Montgomery County; 2011 forest survey database; United States Department of Agriculture County profile; and Minnesota IMPLAN Group, 2010 Ohio state and national package database, MIG, Inc., Hudson, WI. ◆

Distribution of sawtimber volume in Montgomery County.

2014 OFA ANNUAL MEETING

A Look at New Regulations Impacting Forestry

The 2014 OFA Annual Meeting will once again be held in downtown Columbus at the Columbus Sheraton Hotel on Capitol Square on March 5-6, 2014. Like last year, the meeting will include a legislative reception late afternoon on March 5 outside the Statehouse Museum. It will be another opportunity for OFA members to meet with their legislators to discuss forestry and other issues important to them.

The reception could prove particularly important as OFA expects to respond to proposed legislation on timber theft and trespass initiated by Rep. Ross McGregor (R-Springfield). As part of the meeting prior to the reception, there will be a session to review the current legislative proposal. Members will then be able to discuss their concerns with their legislator at the reception. Appropriately, Rep. McGregor will be requested to be at our session to talk about his proposal. ODNR Division of Forestry Chief Bob Boyles will also give his annual state of the division address at the meeting.

Day two of the meeting on Thursday, March 6 will focus attention on other new regulations that are now or could potentially affect forestry and the forest industry. To start the day, we have invited Governor John Kasich to give the keynote address. We are hopeful that the governor will be able to join us and share his thoughts about where Ohio is headed, especially during an important election year.

Other presentations include a Hardwood Market Analysis by David Caldwell from the Hardwood Market Report; the Affordable Care Act and its tax implications to you and your business by CPA John Lawrence of John M. Lawrence and Associates; changes with OSHA under the Obama Administration, and, how to handle a sawmill inspection by Stephen Ogle from Stephen B. Ogle and Associates; the latest on thousand cankers disease, Asian longhorned beetle, and other invasive species by Dan Kenny from the Ohio Department of Agriculture; and a discussion on the Farm Bill and forestry implications by Brent Keith from the National Association of State Foresters.

We will have the Awards Luncheon to recognize Ohio’s 2014 Tree Farmer of the Year along with OFA Conservation and Industry award winners. Brought back by popular demand, the Ohio Tree Farm Committee will again host a silent auction to raise funds for Tree Farm activities. Everyone is welcome to donate items for the auction, which can be brought to the meeting.

The meeting ends on Thursday with the OFA President’s Reception. We look forward to networking and learning the latest in forestry and the industry. All OFA members are invited, and please bring along guests. It should be a good time with good information. ◆

Ohio Forestry Association is dedicated to
Responsibly managing these woodlands provides community value to the county’s forest industries. These Montgomery County businesses employed 1,197 people while directly generating $422.8 million in output and $24.1 million in taxes in 2010. Sources: United States Forest Service Forest Inventory and Analysis, Montgomery County; 2011 forest survey database; United States Department of Agriculture County profile; and Minnesota IMPLAN Group, 2010 Ohio state and national package database, MIG, Inc., Hudson, WI. ◆
Dayton Carves Out a Space for Wood Art

By Christine Hodgson

Who says that you can't make a silk purse out of a sow's ear? How about converting a simple wooden golf tee to an intricately carved Santa?

Every November, wood carvers from North America converge in northern Montgomery County for the annual Artistry in Wood exhibition. This is a juried show where artists compete for awards in various categories of wood carving. Human caricatures are the most prevalent, but one can see more unfamiliar types of carving such as chip carving, marquetry, and pyrography.

Artistry in Wood was conceived in 1981 by the Dayton Carvers Guild as a means for local wood artisans to show and sell their work. Over the past 33 years, the show has blossomed into the largest carving exhibition in the country. The 2013 show attracted over 225 artisans and vendors of carving tools and supplies. Demonstrations are offered over the two-day show as an introduction for future carvers or as an opportunity to hone techniques for those more experienced.

It is safe to say that hundreds of hours are dedicated to most of these works of art, which are available for purchase. But for some carvers, they prefer to just display their art. Sandy Czajka is one such carver who has yet to use the show to sell her creations. Czajka is a Dayton Carvers Guild member responsible for behind-the-scenes mechanics of the show. She is a relative newcomer to carving and tested her skills in 2003. Her interest in bird watching was the catalyst for her carvings. Czajka attended carving classes in Dayton at the beginning of her wood artistry career, and her creations are beautifully detailed and precise replications of birds in the wild.

A special exhibit during this year’s show was a 1930s streetscape that featured caricatures of policemen, store clerks, and construction workers. The Caricature Carvers of America featured the exhibit with 11 building and 120 caricatures interpreting various scenes of Americana in a three-dimensional Norman Rockwell style.

Proceeds from a silent auction are evenly split between the artist and a selected local charity, United Rehabilitation Services. Since its inception, Artistry in Wood has donated over $125,000 to this Montgomery County organization.

The Dayton Carvers Guild was co-founded in 1972 by two local carvers, one of whom being Dick Belcher who is still an active member of the group. There are currently 160 members. Meetings are the fourth Tuesday evening of each month at the United Rehabilitation Services building in northeast Montgomery County. Meetings focus on the various techniques of carving, reports on future shows and classes, and “carvers” where members bring art pieces to share with other members. And of course whittling during the meetings is highly encouraged.

Add one more must-do activity to your forestry field day calendar and attend the 2014 Artisans in Wood Show, November 8 and 9. The exhibit is easily accessible from I-70 and I-75 at the Expo Center near the Dayton International Airport. The website Dayton carvers.com will provide photos of competition winners, or visit Facebook, Artistry in Wood to view many event pictures. It will take one’s appreciation of wood to an entirely new level.

Christine Hodgson served the Ohio Woodland Journal in various capacities since its inception in 1994, including as Editor from 2000 through 2010. She retired from ODNR Division of Forestry, where she was a service forester working with private landowners in western Ohio, including Montgomery County. Chris operates her tree nursery, Basically Natives, in rural Clinton County.

Photos provided by the author.

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