



# Forest Matters

*The stewardship newsletter*

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## **Emerald Ash Borer: Outward From the Urban Fringe**

By Karen Sykes

Could emerald ash borer become the next gypsy moth? It's off to a strong start, killing more than 6 million trees in the Northeast and Midwest so far.

The similarities between gypsy moth and emerald ash borer (EAB) lie not only in their potential for destruction, but also in the way these pests spread out. Neither emerald ash borers nor gypsy moths can get very far by themselves. Instead, they rely on helpful humans to move them from place to place. A gypsy moth egg mass may be hidden on the underside of a lawn chair being moved from town to a lakeside cabin for the summer.

EAB larvae may be tucked away in nursery stock, or in firewood brought to a vacation camp beyond the county or State line.

In little leaps, EAB worked itself from the urban fringe deep into the forest, where it kills trees in numbers that turn native ecology upside down. It has significantly diverted the resources of many State forestry agencies since its first finding in America in 2002. Meanwhile, consultant foresters and private landowners in the States currently infested are either hoping their ash won't get hit or are harvesting it before quarantine zones expand, again.

"We really need a national awareness of EAB," warns Bob Heyd of the Michigan Department of Natural Resources. "Our approach is very much localized now, but the potential for EAB to move around on firewood or nursery stock is tremendous. I'd encourage foresters and landowners to be very aware when they see decline in their ash. There could be a number of causes, but ruling out EAB right away is a must."



Without comprehensive efforts to control its spread, the emerald ash borer could devastate the region's ash resource. (photo: Andrew J. Storer, Michigan Tech University)

*Continued on page 2*

### **What is EAB?**

The emerald ash borer (*Agrilus planipennis*) is a nonnative invasive insect. It hails from northeast China, eastern Siberia, Korea, and Japan, and infests all types of ash trees, as well as Asian walnut, elm, and *Pterocarya* species. EAB larvae damage host trees as they mature in the cambial layers. As the larvae feed on the phloem and outer sapwood, they choke off the transport of water, nutrients, and carbohydrates, causing death in 1 to 3 years.

The story of EAB's arrival is very typical, with likely introduction at the lake port in Detroit through infested pallets, crating, or dunnage. It's estimated to have established itself 5 to 10 years before its 2002 discovery, repeating the pattern invasives follow by remaining below the radar screen until a thriving population establishes itself at a detectable, hard-to-manage level.

Accidental or irresponsible human behavior brought this pest from its urban point of entry outward across county and State lines. Likewise, people will transport it to its next frontier if they are not vigilant when harvesting or transporting ash. One need only picture a map, with Detroit as the urban epicenter of EAB's expanding influence in Michigan and neighboring States, to understand how closely our ports, cities, suburbs, and rural forest are linked by our transportation systems and the constant movement of goods and supplies.

### **What is important to know?**

The native range of ash covers most of the 20 Northeastern and Midwestern States. Discoveries have been made and trees are dying in Michigan, Ohio, Indiana, and Maryland, and quarantines have been implemented in each of these States. Canada is also impacted by infestations in Ontario.

The presence of the emerald ash borer typically goes undetected until a tree shows symptoms of infestation. Thinning and dieback in the upper third of the crown is the most common warning. Other symptoms include "D"

shaped exit holes, split bark, woodpecker activity, root suckers, epicormic branching, and serpentine, frass-filled galleries.

The movement of firewood has been identified as one of the most common ways of spreading EAB to new areas. Public awareness campaigns urge homeowners to help prevent EAB's expansion with the following recommendations:

- ‡ Use local sources of firewood.
- ‡ Do not transport firewood from home.
- ‡ If you have already transported firewood, do not return it and do not leave it—*burn it!*

Ohio, Indiana, Illinois, Minnesota, and Wisconsin have developed response plans and established networks of agencies and organizations to respond to the discovery of EAB as and if it occurs. State teams have identified resources, taken steps to speed administrative processes, and determined their technical readiness.

Despite the States' efforts, public awareness is critical to limiting the insect's spread. With so much of the ash resource at risk, people need to be aware of the situation and its severity, educated so they can identify EAB and its effects, and proactive in reporting it to authorities. Without the public's participation, EAB is certain to spread far beyond its current range.

### **Where is the real-time info?**

Foresters and landowners remain the best defense among the *Forest Matters* audience for the detection and control of EAB. The forestry agency Web site for each State infested with EAB contains local updates on the pest, quarantines, or other measures in place for its control. The Northeastern Area EAB Web site (<http://www.na.fs.fed.us/spfo/eab/>) directs you to these resources.

### **New Name, Same Message**

This issue of the newsletter is brought to you under a new name, *Forest Matters*. Although the name is different, the goal remains the same—to bring the stewardship message to natural resource professionals, consultant foresters, and landowners in the Northeast and Midwest.

If you have any questions, comments, or would like to be added to the hard copy or electronic mailing list, please contact Helen Thompson, USDA Forest Service, P.O. Box 640, Durham, NH 03824-0640, phone: 603-868-7701, fax: 603-868-7604, e-mail: [hthompson@fs.fed.us](mailto:hthompson@fs.fed.us).

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# Stewardship News

## Habitat Management Guidelines for Protecting Small Wetlands

A new publication, *Forestry Habitat Management Guidelines for Vernal Pool Wildlife*, offers guidance to landowners and forest managers interested in conserving vernal pool wildlife in managed forests of the Northeast. The habitat management guidelines (HMGs) balance the best available science on vernal pool–forestry relationships with the interests of the forest management community to produce guidelines that are both biologically meaningful and practical. This publication is a cooperative effort of Maine Audubon, the University of Maine, the Wildlife Conservation Society, and the Maine Departments of Conservation and Inland Fisheries and Wildlife.



Spotted salamanders are among the amphibians that rely on vernal pools for breeding. (photo: Phillip deMaynadier)

Vernal pools are typically wetlands of an acre or less that lack permanent inlet or outlet streams and are often dry in the summer.

Despite their small size, they provide important fishless breeding habitat for amphibians and invertebrates, as well as foraging and resting habitat for reptiles. Pool-breeding frogs and salamanders—building blocks of the forest food web—move significant distances from vernal pools into the surrounding forest, where shade, leaf litter, and downed woody material are essential for their survival. Interest has been increasing on the part of State agencies, scientists, and the general public in adopting nonregulatory approaches for conserving the far-reaching terrestrial habitat values important to vernal pool wildlife.

Small woodlot owners can help conserve vernal pools by identifying them on their properties and incorporating HMGs into their management plans. Initial steps include the following:

- ‡ Pre-identify vernal pools, or likely locations for them, using aerial photographs
- ‡ Document vernal pools located during forest cruising or other on-the-ground activities
- ‡ Include vernal pools and surrounding upland habitat zones on maps
- ‡ Plan forest road construction to avoid vernal pools and associated upland habitats
- ‡ Plan harvests and pesticide applications to avoid vernal pools and associated upland habitats
- ‡ Wherever possible, maintain a relatively closed canopy forest between nearby pools by limiting road construction, landings, and heavy cutting between them

The HMGs identify three different management zones: **the vernal pool depression**, **the vernal pool protection zone** (100 feet), and **the amphibian life zone** (100–400 feet). Recommendations for forest canopy cover, coarse woody debris, litter composition, and other elements vary for each zone.

The HMGs serve as a companion to a related document entitled *Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States*. Together, these publications provide techniques and recommendations designed to help maintain functioning vernal pool landscapes throughout the glaciated Northeast and Midwest.

For a copy of *Forestry Habitat Management Guidelines for Vernal Pool Wildlife* (\$8) by Aram Calhoun and Phillip deMaynadier (2004) or *Best Development Practices: Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States* (\$10) by Aram Calhoun and Michael Klemens (2002), contact Becca Wilson at 207-781-2330, ext. 222; send a check payable to Maine Audubon, 20 Gilsland Farm Road, Falmouth, ME 04105; or contact Nick Miller of the Wildlife Conservation Society’s Metropolitan Conservation Alliance at 914-925-9175.

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## Using Technology to Improve Forest Stewardship Planning

The Forest Vegetation Simulation (FVS) family of growth simulation models, developed by the USDA Forest Service for predicting forest stand dynamics, has many specific uses for foresters and landowners. For example, FVS has been used in timber management applications, including summary of current stand conditions, prediction of future stand conditions under various management alternatives, and updating inventory statistics. Output from the model is used as input to forest planning models and many other analysis tools. FVS can also be used to assess how management practices affect stand structure and composition, determine suitability of stands for wildlife habitat, estimate hazard ratings for insect outbreaks or wildfires, and predict losses from fire and insect outbreaks. The Stand Visualization System (SVS), one of the latest additions into the FVS family, allows forest managers and landowners to visualize the outcomes of varying management prescriptions.

The Stand Visualization System provides a visual display of an average acre of forest land derived from data collected in a stand. It can simulate how the stand will change in response to natural succession, disturbance, and proposed management actions. SVS is a standalone program, but is most useful as an output of the FVS program, because it is only as an output that you can begin to “grow” your stand into the future. This type of analysis incorporates Suppose, the graphical user interface that allows management plans or policies to be entered into the FVS system and then displayed via the Stand Visualization System.



The Stand Visualization System simulates an acre of forest land, created from on-the-ground data, and depicts the outcome of various management alternatives.

The visual display of forest stands over time is a powerful tool in educating landowners about forest dynamics. By seeing their forest’s projected response to various management activities, landowners can sculpt their management plans to best meet their individual goals.

For more information on FVS and SVS, contact the USDA Forest Service, Forest Management Service Center, 2150A Centre Avenue, Suite 343, Ft. Collins, CO 80526-1891. The center maintains a Help Desk at 970-295-5770. Visit their Web site at <http://www.fs.fed.us/fmsc/fvs/> for more information or to download the software. Penn State University offers an excellent Web site (<http://rnnext.cas.psu.edu/FSV/Default.htm>) to help make this software more accessible to landowners.

## Nashua River Watershed Association Selected for President’s Watershed Initiative

The Nashua River Watershed Association, in partnership with the New England Forestry Foundation, the Trust for Public Land, and a broad interstate coalition of stakeholders, was recently awarded an \$870,000 grant under the President’s Watershed Initiative. The grant will address threats to drinking water in the watershed, located in Massachusetts and New Hampshire, through activities ranging from developing smart growth regulatory approaches at the municipal and State level to exploring market-based opportunities for collective landowners through a forestry cooperative.

The majority of funds will be devoted to increasing incentives to individual and municipal forest landowners to voluntarily expand their stewardship and land protection efforts. Specific goals include educating targeted property owners and removing barriers to their performance as stewards, completing management plans or ecological assessments on at least 10 percent of unprotected priority lands in the watershed, and helping willing landowners toward permanent land protection where appropriate. For more information, contact Elizabeth Ainsley Campbell at 978-448-0299 or [e.ainsley.Campbell@NashuaRiverWatershed.org](mailto:e.ainsley.Campbell@NashuaRiverWatershed.org).

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## Common Focus on Wildlife Conservation Strategies

In the wildlife conservation arena, much of the focus, and funding, is directed towards two very distinct groups—threatened and endangered species, and game species. In an effort to meet the needs of a broader range of species and move towards a nationwide approach to wildlife conservation, States participating in the U.S. Fish and Wildlife Service’s State Wildlife Grant program have been charged with developing statewide Comprehensive Wildlife Conservation Strategies by October 2005. Although State fish and wildlife agencies are taking the lead role, they are engaging a broad array of partners—Federal and State agencies, conservation groups, private landowners, and the general public—to address their State’s entire diversity of wildlife and habitats. The strategies, unique for each State, will address a set of eight required elements to ensure nationwide consistency and a common focus

on preventing wildlife from declining to the point of endangerment.

Private forest landowners have a stake in the Comprehensive Wildlife Conservation Strategies for a number of reasons:

- ‡ Many private forest landowners are interested in wildlife management or are concerned about threatened and endangered species.
- ‡ Many wildlife species depend on private forest land for food, water, and habitat.
- ‡ The State fish and wildlife agencies are partners for many projects and programs targeting private forest land.

For more information on the Comprehensive Wildlife Conservation Strategies, as well as links to each State’s efforts, visit [http://www.teaming.com/state\\_wildlife\\_strategies.htm](http://www.teaming.com/state_wildlife_strategies.htm).

## Spatial Analysis Project Goes National

The Forest Service’s Spatial Analysis Project (SAP) is going national! A national steering committee is putting together a strategy for implementation, responding to the need for increased accountability within the Forest Stewardship Program and to focus efforts on the most critical resources.

The original pilot partners (Connecticut, Maryland, Massachusetts, and Missouri) have completed development and testing of the SAP. They are maintaining the databases (both spatial and tabular) as new Stewardship Plans are prepared or changes occur in existing plans. Eight additional States (Alaska, Colorado, Delaware, Indiana, Iowa, Oregon, Rhode Island, and West Virginia) will begin to implement the SAP during Fiscal Year 2004 with assistance from the pilot partners. These new States have seen the pilot results, envision the project’s utility, and are anxious to begin to benefit from its analysis capabilities and tracking accomplishments. They will complete full implementation by December 2005.

A Web-based data entry tool (Web-DET) is under development to enable States to enter SAP data only one time and report results automatically. Web-DET will give field foresters the ability to electronically map new stewardship tracts or modify existing tracts, create Stewardship Plans, maintain a standardized relational database, and report State and Federal accomplishments. It will be beta-tested by the four pilot States and Colorado during the coming year.

For more information, contact Barbara Tormoehlen at 812-277-3567 or [btormoehlen@fs.fed.us](mailto:btormoehlen@fs.fed.us).

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# Landowner Spotlight

## Roots of Revolution in Reforestation

(Used with permission from *Midwest Woodlands & Prairies*)

On a November day in 1993, volunteers shoveled bushels of ash and black walnut seed and acorns out of wagons onto a former corn field. Landowner Kevin Sand offered 3 acres for the experiment. Today, a budding forest covers the site. The experiment's success helped usher in direct seeding as a major method of reforestation.

John Olds, a consulting forester with One-Stop Forestry in Postville, IA, hatched the idea with Gary Beyer, a district forester with the Iowa DNR. They'd been frustrated with the poor survival of seedlings due to deer depredation and other problems. "We knew that nature regenerates timber through seed," Olds says today, "so we thought, why not try nature's way?"

According to a forest stewardship plan prepared for the property in 1992, Sand intended to plant alternative

*Continued on page 7*



Kevin Sand's willingness to experiment with direct seeding resulted in a healthy, thriving mixed hardwood forest.

### Is Direct Seeding Right for You?

Direct seeding is an alternative to traditional seedling planting for establishment of tree cover on open ground. Experts note that, while the practice has a number of advantages over traditional seedling planting, it comes with its own set of challenges. Before considering direct seeding, be sure to do your homework and learn from the experiences—both good and bad—of those who have ventured before you.

#### **Advantages**

- ‡ Rapid conversion of open sites to forest cover
- ‡ Straight, dense, naturally pruned trees
- ‡ Allows for more normal root development (avoids seedling transplant shock)
- ‡ Competing vegetation and predators need to be controlled for a shorter time
- ‡ Potential for cost and time savings over seedling planting

#### **Challenges**

- ‡ Competing vegetation must be aggressively controlled for a minimum of 3 years.

- ‡ Poor seed germination and survival may result from several factors, including poor cultural practice, herbicide deficiency, poor seed quality, and predation
- ‡ Seed availability and quality varies widely from year to year
- ‡ Seed must be stored under ideal conditions
- ‡ Planting density is hard to control

#### **Keys to Success**

- ‡ Select and prepare site as recommended
- ‡ Plant quality seed at proper depth for species and site
- ‡ Use a combination of seed species
- ‡ Control seed predators
- ‡ Control competing vegetation until seedlings are established

For more information and links to other resources, visit <http://www.directseeding.org>.

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## Country Roads Take Me Home

After retiring as Chairman of the Physics Department at Ohio University, Jim Shipman returned to his native West Virginia and purchased a 130-acre farm in Barbour County. The old farm had a few hayfields and acres of woods, but they were not accessible enough for him to enjoy his favorite pastime of jogging. Jim began trading timber to a local sawmill in order to get a little bulldozer work done on the roads, but he faced a dilemma—how to obtain good overall access to the forest for recreation without degrading its aesthetic appeal.

Jim met with Joe Tekel, a private consulting forester who frequently prepares Stewardship Plans in West Virginia. Tekel inventoried the woods and interviewed Jim and his wife Genevieve to help them begin formulating a plan to meet their goals. Joe helped them develop a planned road network that would provide good jogging as well as access to the site of a future cabin for the Shipman's children and grandchildren. As part of a timber sale, Joe opened up a vista for the cabin to provide an outstanding view of Laurel Mountain.

Tekel's inventory revealed that part of the forest could support a commercially operable thinning that would yield sufficient sawtimber to pay for good roads, plus offer some additional income. Jim was willing to tackle the task of deadening grapevines in the stand so that they wouldn't

damage the crop trees. It was good exercise, and he made sure that the job would be done correctly. Jim says, "It is nice to have visitors tell you that they are impressed with the number of good trees you have left after a logging job is completed."

This story is not over, though. Jim and Joe are now talking about regenerating part of the forest and discussing the type of work that will need to be done to accomplish that goal. All of this will be done while maintaining the overall aesthetic appeal of the farm for the Shipman's children and grandchildren in Florida, who one day want to come home to live in West Virginia.



Jim Shipman's efforts will ensure that his daughter Sarah (right) and his other children will enjoy the family's legacy for generations to come.

## Roots of Revolution in Reforestation *Continued from page 6*

rows of conifers and hardwoods on the site. Olds and Beyer convenience him to test the direct seeding theory and Beyer wrote the project plan. Sand received a 75 percent Federal cost-share to offset his costs.

The experiment looked like a bust the next spring as Olds searched for seedlings in the mat of weeds. But the seed kept germinating through the summer, and by fall he and Beyer counted enough seedlings to give them hope. By the second year, the seedlings averaged 3 feet high.

Olds admits that direct seeding looks unsightly the first year or two despite herbicide treatments. But he says that after three or four growing seasons, the high density of seedlings—thousands per acre—shades out competing weeds and grasses.

Direct seeding has taken off from there. One-Stop Forestry direct seeded more than 400 acres last fall. In all, it has reforested more than 4,000 acres this way since that bold experiment more than 10 years ago.

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# Research

## Forestry Practices to Avoid: Just Say No To High-Grading

(Adapted with permission from an article by Peter J. Smallidge [NY State Extension Forester, Cornell University Department of Natural Resources] and Michael C. Greason [Private Consulting Forester], courtesy of Cornell Cooperative Extension News Service)

Cutting the best trees (those of highest value) and leaving the low value, often diseased or malformed trees, is all too common. This type of forestry is called high-grading, where the highest grade (or value) trees are removed. By cutting only the largest and most valuable trees, you remove those best suited to the site. The trees that are less well adapted remain as the next forest and the seed source for future forests. The financial gain of high-grading exists only briefly, yet ownership objectives can be sacrificed for decades. A similar analogy is the livestock farmer or stable manager who shoots the blue ribbon bull or winning race horse and uses the losers for breeding stock. The quality of the herd, just like the quality of the forest and woodlot, declines rapidly!

Practices similar to high-grading exist under a variety of names. High-grading is often disguised under the name *diameter-limit cutting*—a practice that removes all trees above a certain minimum diameter. Diameter-limit cutting is appropriate in some rare situations, for example, if old pasture trees are shading the growth of young hardwood saplings. Often however, diameter-limit cutting removes trees of commercial value (e.g., > 12–14 inches in diameter) before they can attain a more valuable size and add seed to the forest. *Selective cutting* is a form of high-grading that can include activities such as improvement cuts. (Selective cutting should not be confused with the selection system of silviculture, a legitimate technique in which a professionally trained silviculturist selects trees from all age and size classes, both high and low quality, to produce an uneven-aged forest.) The rationale for high-grading, diameter-limit cutting, and selective cutting is to remove the bigger trees so the smaller ones can grow. However, the remaining trees may be undesirable species, or in poor form or health. By any name, high-grading degrades the value of the forest regardless of the “logic” used by foresters or loggers trying to make a quick buck.

Why does high-grading happen? A common cause is greed to maximize immediate profits. Beginning in the early 1970s, demand for high-value timber increased and sawmills could pay more for certain species, thus strengthening the market for high-value trees while severely weakening it for low value

trees. Despite some regional variation, this trend has persisted. Further, the costs to cut and haul a tree worth \$10 are about the same as those to cut a similarly sized tree worth \$300. Another factor is that the property tax structure for forest land can create financial hardships that encourage landowners to seek short-term gains. The result is that the highest value trees are cut for immediate profit, leaving behind a legacy of low quality trees and under-productive forests. Although this knowledge may help explain high-grading, it doesn't excuse it.

What are the consequences of high-grading—is it really that bad? The trees that are left behind won't grow as quickly as better quality trees, and the time until the next harvest is lengthened. In addition, the value of the next harvest will be reduced because only low quality trees will be left. If you magnify the practice of high-grading across a region, assuming the demand for wood products remains steady, then more acres must be harvested to meet the same demand. As the value of the land to produce timber crops decreases, the incentive to subdivide and develop increases.

Although high-grading usually leaves a forest of tall trees behind, there are hidden ecological costs. Because the healthiest trees with the fewest defects are harvested, the overall health of the forest is reduced. The remaining trees may be more susceptible to the effects of insects, pathogens, strong winds, or ice storms and less able to recover after these disturbances occur. Often high-grading emphasizes cutting a few select species. This trend reduces tree species diversity and can impact wildlife that depend on the harvested species for food or shelter.

So what can you do to avoid high-grading? One step is to work with competent and professional loggers and foresters. Ask for



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references, find out if the forester participates in continuing education programs, make a visit to forests or woodlots where they have worked, and know that the best price may not result in the best treatment for your land. A second step is to have a written management plan, which will state your objectives and help keep you on track. The harvesting schedule in your management plan will help you decide when harvesting is appropriate. A third step is to look for creative solutions to remove the low value trees at the same time the high value trees are harvested. One way is to have the forester mark and the logger skid the low value trees to the log landing where the landowner can process them or sell them for firewood. Finally, get assistance from people focused on your interests to help you develop long-term objectives and management plans. Woodland

owner organizations and State public service foresters can help you avoid the perils of high-grading.

What can you do if your woodlot was previously high-graded? In simple terms, you need to have a vision for what you want your forest to look like and then plan a set of actions to move you towards that goal. A lightly high-graded forest may need only some thinning around the best trees and steps to ensure the forest can be effectively regenerated when the time comes. A heavily high-graded forest may no longer have the tree species you desire, which will require you to create openings that you then plant to your desired species. The size of the openings and the species to plant will depend on the specifics of the site. A competent forester and your willingness to invest time and probably money are necessary to move a high-graded forest back to a sustainable forest.

For more information, contact Peter J. Smallidge, 607-255-4696 or [pjs23@cornell.edu](mailto:pjs23@cornell.edu), or visit [www.dnr.cornell.edu/ext/forestrypage](http://www.dnr.cornell.edu/ext/forestrypage).

## **Upcoming and Existing Research on High-Grading in the Northeast**

**Helping Small Landowners in Maine Identify Opportunities for Management of Degraded Northern Hardwood Stands.** Research on the rehabilitation of high-graded stands is scant and badly needed. In order to meet this need, Michael Maguire, University of Maine, and Laura Kenefic, USDA Forest Service, have initiated a cooperative study to identify forest practices that allow sustainable, economically viable management of degraded northern hardwood stands in Maine. This will be accomplished by comparing and evaluating the outcomes of alternative silvicultural treatments following exploitative harvests. Data from well-stocked northern hardwood stands will be used to simulate degrading and rehabilitative treatments. Stands will be modeled over a 100-year period using the NE-TWIGS variant of the Forest Vegetation Simulator. Treatments may include no harvest, various diameter-limit cuttings, intermediate treatments (thinnings), and even-aged regeneration harvests (shelterwood and/or clearcut). Rehabilitative treatments will focus on managing the distribution and abundance of acceptable growing stock while releasing or regenerating a new age class. A financial analysis pertaining to timber harvests, rehabilitative treatments, and residual stand conditions will be compared across treatments and sites, and sustainability of composition, structure, and production will be evaluated.

**Comparison of Fixed Diameter-Limit and Selection Cutting in Northern Conifers.** ([In press]. Kenefic, Laura S.; Sendak, Paul E.; and Brissette, John B. *Northern Journal of Applied Forestry*.) A recent study at the Penobscot Experimental Forest near Old Town, Maine, looked at fixed diameter-limit and selection cutting, which have been applied at 20-year intervals since the early 1950s. The study found that sawtimber volume and growth, total and merchantable volume, regeneration stem density, and inventory value were all lower in the fixed diameter-cut cuts than in selection cut stands.

**Long-Term Structural Change in Uneven-aged Northern Hardwoods.** (Leak, W.G. 1996. *Forest Science*. 42: 160–165.) Diameter-limit cutting in northern hardwood forests resulted in a slow return to the initial stand structure, jeopardizing timely and subsequent harvests with comparable yields.

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# State Roundup

**Regional awareness and education on invasive plants** and their impacts on natural ecosystems is a hot topic these days. The **Vermont** Department of Forests, Parks and Recreation, in conjunction with the Forest Service's Northeastern Area, is planning a demonstration and a series of workshops around the State in 2005 showcasing efforts to control these damaging plants. For more information, contact Roger Monthey at 603-868-7699 or [rmonthey@fs.fed.us](mailto:rmonthey@fs.fed.us). Elsewhere in the region, representatives from Delaware, Maryland, New Jersey, Pennsylvania, Ohio, and West Virginia are planning a joint workshop on invasive species management and control on forest land. The workshop, to be held in the eastern panhandle region of **West Virginia** during the summer of 2005, will be open to service foresters, forestry consultants, and others within the six-State area. For more information, contact Karen Sykes at 304-285-1532 or [ksykes@fs.fed.us](mailto:ksykes@fs.fed.us).

The **Illinois Report on Sustainable Forest Management: Criteria and Indicators** presents a comprehensive overview of Illinois' forests and provides information for further analysis and discussion about their sustainable use. It also identifies gaps in resource data and other issues that must be addressed. For more information, contact Lyle Guyon at 217-265-6451 or [lguyon@uiuc.edu](mailto:lguyon@uiuc.edu). The report may be downloaded at <http://ifdc.nres.uiuc.edu/publications/SFMCI.htm>.

A new publication, **Forests of Indiana: Their Economic Importance**, seeks to educate the average Hoosier on the scope, productivity, and economic impact of Indiana's forest land. Compiled by numerous Federal, State, and local partners, the report emphasizes that care, management, and sustainable

forest use is critical to Indiana's economy through wood products, tourism, tree sales, and special forest products. For more information, contact Dan Ernst at 317-232-4101 or [dernst@dnr.state.in.us](mailto:dernst@dnr.state.in.us), or access the publication on-line via <http://www.na.fs.fed.us/spfo/pubs/alpha.htm>.

**Ohio** moved a step closer to initiating its **State Forest Legacy Program** by preparing an Assessment of Need (AON). The State Stewardship Committee spent considerable time determining the goals of the AON, which are to:

- ‡ protect working forests threatened by conversion to nonforest uses;
- ‡ protect and enhance social/cultural values;
- ‡ improve and enhance biodiversity; and
- ‡ enhance economic productivity through traditional forest uses.

The committee also carefully considered various available data to successfully delineate the State's Forest Legacy Areas. The AON was submitted June 15, 2004, for review and approval by the USDA Forest Service. For more information, contact Mark Ervin at 614-265-6667 or [mark.ervin@dnr.state.oh.us](mailto:mark.ervin@dnr.state.oh.us).

After a long search, the **West Virginia** Division of Forestry announced the selection of Todd Groh as the **new Assistant State Forester** of Forest Management and Stewardship. Todd will oversee the division's landowner assistance programs, including the Forest Stewardship Program and the Clements State Tree nursery. Todd also will supervise the State Land Management Section that manages the eight State Forests, as well as the State's ginseng program. For more information, contact Leslie Fitzwater at 304-558-2788 or [lfitz@gwmail.state.wv.us](mailto:lfitz@gwmail.state.wv.us).

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# Naturalist's Corner

## Biodiversity and Small Woodlands in Urbanizing Areas—Opportunities for Connecting to the Forest

by Roger Monthey

One focus of a recent talk I gave on the ecological and natural history values of woodlands in urbanizing areas was the importance of conserving and managing woodlands and their associated biota, such as wildflowers, shrubs, fungi, lichens, mosses, liverworts, and wildlife. I believe that increasing our personal knowledge of these species and their ecological and natural history values will lead to greater appreciation of them. This, in turn, will lead to more engaged and responsible woodland stewardship.

Just what are ecological and natural history values? Ecological value refers to the functional importance of organisms and their role within an ecosystem. Natural history values include the inherent uniqueness and beauty of organisms, as well as their uses for food, medicine, and other purposes (see <http://www.fs.fed.us/biology/plants/celeb.html> for a brief list). Humans have known about and depended on a wide variety of organisms for millennia. The Iceman, a mummified body found in the northern Alps dated at over 5,300 years old, carried specimens of 17 trees and shrubs and 2 fungi with him, many of which were used for utilitarian purposes.

Woodlands serve as great outdoor laboratories for people to increase their “stewardship IQ” and to feel more directly connected to the land. Maintaining this connectedness is critically important for our youth, especially in urbanizing areas where opportunities to understand and experience woodland values are diminishing. Active management will protect the long-term health of woodlands and can maintain or, in some cases, enhance many of the species that inhabit them.

Wildflowers and shrubs are just two of the many life forms that inhabit our woodlands. Wildflowers are an important component of woodland biodiversity. Spring ephemerals flower before dense shade develops, while other species, such as woodland asters, are adapted to lower light levels and develop as the season progresses. Not only do wildflowers generate oxygen, provide food for humans and wildlife, and help to filter pollutants, they add greatly to the spice of life. Their colors and shapes are splashed throughout woodlands as if from an artist’s brush, providing moments of pleasure and appreciation to forest visitors.



Instilling an appreciation of nature in children is an investment that lasts a lifetime.

Shrubs, as well as wildflowers, can be excellent indicators of site conditions. Distinct from young tree regeneration in that they do not develop into tree-size forms (although some can get quite large), shrubs are an important component of vertical and horizontal diversity in woodlands and provide important nesting cover and food for wildlife. Many shrubs have culinary, medicinal, floral, decorative, or cosmetic values.

Fortunately, the value of woodlands as an escape from suburban pressures and for woodland education has been recognized by local grassroots groups, woodland owner and regional conservation organizations, and governmental agencies. Examples abound of woodlands that have been conserved in urbanizing areas and of educational efforts to teach us about woodland values. However, we need to increase the extent of conserved and sustainably managed woodlands in the face of unrelenting development pressures.



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