



Forest Stewardship

Information Exchange

Fall/Winter 2002
Volume 5 Issue 2

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Produced by:



USDA
Forest Service



Northeastern Area
State and Private
Forestry

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Forest Stewardship
Information Exchange
Web site: [www.fs.fed.us/
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library.htm](http://www.fs.fed.us/na/durham/who/stew_library.htm)

Stewardship News

Getting Hard Numbers on the Effects of Timber Harvesting on Stream Quality

Roger Ryder and Tim Post of the Maine Forest Service and Dave Welsch of the USDA Forest Service are leading an effort to develop a regional BMP (Best Management Practices) monitoring protocol along with supporting geo-referenced data layers.

The protocol enables water quality effects from harvest operations to be quantified, shifting from the subjective assessments more commonly used. Effects are documented using a standardized data dictionary stored on portable data recorders with GPS capabilities. Examples of on-site conditions recorded include measuring how far sediment has intruded into the riparian buffer (as a percentage) as well as the surface area of the channel bottom covered with sediment. Quantifying the measurements provides decisionmakers more reliable data on the impacts forest harvest operations have on water quality. Standardizing data collection also ensures that data is comparable from State to State.

During 2002, field crews in participating States (Indiana, Maine, Maryland, Massachusetts, New Hampshire, New York, Ohio, Pennsylvania, West Virginia, Wisconsin) were trained on 10 sample areas—recently logged areas with stream crossings and/or riparian buffers. Training included work on recognizing on-site conditions and understanding the questions and potential answers that describe the conditions, as well as the process for uploading data for e-mail transmission to the data storage computer.

In addition to training, project goals include (1) developing a written regional monitoring protocol based on scientific principles supporting BMP practices and constructing the associated data dictionary for the GPS units, (2) completing double sampling with a quality control team to evaluate the accuracy of the field crews' samples, and (3) a critical review of methodology and results by researchers, participating States, and the EPA. This project has the potential to meet EPA's need to demonstrate

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Rhode Island's Privately Owned Forests: A Woodscaping Guide for a Healthy Forest Future

By Holly Burdett, University of Rhode Island Cooperative Extension

The Southern New England Forest Consortium, Inc. (SNEFCI) and the University of Rhode Island Cooperative Extension's (URI CE) Home*A*Syst Program are collaborating to develop educational materials for small acreage woodland owners in Rhode Island. This project, called "Woodscaping in Southern New England," is being funded through the USDA Forest Service's Economic Action Special Project Proposal in cooperation with the Rhode Island Department of Environmental Management, Division of Forest Environment.

This project was designed to build upon the success of the URI CE Home*A*Syst Program, a voluntary residential pollution prevention education program that trains volunteers, residents, and community groups about environmental and health risk assessment and pollution prevention in and around the home.

Many may be surprised to learn that Rhode Island is approximately 60 percent forested. What may be more surprising are its changing ownership trends. About 80 percent of Rhode Island's forests (303,000 acres) are privately owned, with the majority of landowners (over 26,000) owning parcels of less than 10 acres. Rhode Island is not alone: nationwide, 150,000 new forest owners each year acquire parcels of 10 acres or less.

Traditional forest management education programs are not designed to serve these "new" forest owners. Most of these forest landowners do not make their living from the land; their ownership objectives are often not focused on timber production. Woodscaping studies by SNEFCI and

others in southern New England indicate that these landowners are interested in activities such as pruning, firewood management, wildlife enhancement, walking trails, scenic beauty, water resource protection, native plants, and alternative forest products.

The Woodscaping in Southern New England project has drafted a series of factsheets with the aid of a project steering committee and a focus group consisting of target audience members and industry professionals. The factsheets present an introduction to the history and importance of forests in Rhode Island's landscape and the trends in small acreage woodland ownership. Used as a complete set, they are designed to provide landowners with planning guidance, project ideas, and basic and technical information, and include such items as a list of specific contacts and resources, an inventory/record sheet, and a glossary. The factsheet sets are scheduled for distribution by January 2003.

For more information about this publication, contact Holly K. Burdett, URI CE, at (401) 874-5398, or Chris Modisette, SNEFCI, at (401) 568-1610. For information on the Home*A*Syst Program and woodscaping, visit the URI CE Web site at www.uri.edu/ce/wq/.

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compliance with the Clean Water Act by generating data on BMP effectiveness that is measurable, site specific, quantitative in nature, and comparable among States.

Work is currently underway to statistically assess the validity of the individual questions in the protocol and to generate initial reports. Future work includes incorporating State comments from the pilot phase, developing risk assessments based on a combination of site factors and operator attitude, and developing computer code to generate automated reports.

For further information about this project, contact Dave Welsch at dwelsch@fs.fed.us or (603) 868-7616.

Distance Learning Opportunities for Forest Landowners

Distance learning is an exciting way for rural forest landowners to learn more about their forest lands without having to commute to an educational facility. Two examples are highlighted here.

The Lincoln Land Institute in Boston offers “Introduction to Forests,” a short, online course targeted to owners of small woodlands (e.g., private landowners, land trusts, local governments). The course explores the fundamentals of small forests by revealing the elements of forest processes and encouraging active, private stewardship by landowners. It is comprised of an overview section and six in-depth and illustrative lessons ranging from forest ecology and woodland management to land protection.

The course offers numerous links to other Web-based resources, instructive photographs, correlated bibliographies, and an interactive message board. For more information, visit www.lincolneducationonline.org/index.cfm. The course is currently offered tuition free.

Virginia Tech University offers a 10-week online graduate course covering the basics of tree growth, tree identification, forest ecology, and natural resource management. The course, titled “Forest Biology and

Ecology for Educators,” is aimed primarily at public school biology educators but would be of interest to anyone desiring advanced knowledge about trees and forests. All material is relevant to teaching the Virginia Standards of Learning. Course content is on two CD’s and the class is managed over the Internet. For more information, visit www.cnr.vt.edu/dendro/wwwmain.html

For a list of Web resources on forestry issues for nonindustrial private landowners, check out “**A Forest Landowner’s Guide to Internet Resources: States of the Northeast**,” compiled by the USDA Forest Service’s Northeastern Area (<http://www.na.fs.fed.us/pubs/misc/ir/index.htm>).

New Hampshire Wins National Canon Envirothon

The Envirothon program is an excellent way for young people interested in conservation to learn more about forests and related resources. This year’s national competition was held at Hampshire College in Amherst, Massachusetts, with high school teams attending from 42 States and 7 Canadian Provinces. Teams were tested in forestry, wildlife, aquatics, soils, and this year’s topic—invasive species.

The winner of this year’s competition was the State of New Hampshire, represented by a team from Keene High School. The team dominated the event, taking first place not only in the overall competition, but also in forestry, wildlife, invasive species, and their oral presentation, second place in aquatics, and third place in soils.



Members of New Hampshire’s first place team work on their field tests at this year’s Canon Envirothon. (photo from envirothon.org)

A Vermont Landowner Experiments to Increase Growth of Black Ash

Black ash, also known as brown ash, is renowned by Native Americans in the Northeast for its use in basketry. It has been used for generations, and the art and science of constructing these baskets has been passed down from one generation to the next. But the black ash is in trouble, and traditional basketmakers report that it is becoming increasingly difficult to obtain basket-grade logs. Though never very abundant (e.g., black ash stems currently make up less than 1 percent of stems counted on inventory plots nationwide, and less than 1 percent of these have value in basketry), black ash now seems to be in decline due to a variety of factors including over-cutting, habitat intrusion and loss, pollution, lack of applied management practices, climatic effects (e.g., drought), diseases, and insects. Black ash also has a naturally low reproductive capacity.

Black ash reproduces by seeds, by stump sprouting, and by root suckers, which are new plants developing from root systems connected to living trees. The regeneration of this shade intolerant species, though apparently never very prolific, is of much concern and has been the subject

of recent studies (see, for example, Benedict, Les; David, Richard. 2000. Handbook for black ash preservation reforestation/regeneration. Hogansburg, NY: Mohawk Council of Akwesasne, Department of Environment. 78 p.). Experiments to produce nursery stock of black ash have been made with some success (Bridgen, Michael; Benedict, Les. 1995. Development of black ash [*Fraxinus nigra* Marsh.] seedlings under extended photoperiod. Report No. 1. Potsdam, NY: State University of New York, A.C. Walker Foundation North Country Research Fellowships. 4 p.).

Landowners who are fortunate to have black ash on their woodlots may be interested in enhancing its regeneration and growth through silvicultural manipulation. Erhard Frost of Thetford, Vermont, is one landowner who has taken steps to enhance black ash growing on his property.

Frost selected a 0.45-acre wet area to conduct his experiment. Species present before the cut included black ash (33 percent of stems), eastern hemlock, red spruce, red maple, and balsam fir. Prior to harvest, the number of tree stems greater than 4 inches d.b.h. on the site was 106, or 240 trees per acre, and the number of seedlings and saplings present totaled 273.

Most black ash were retained during the harvest, while all other species were either removed or girdled. These black ash “crop trees” were numbered, ranked for crown position, tallied for d.b.h. to 0.1 inch,



Erhard Frost pounds out splints for basketmaking.

and rated as either acceptable or unacceptable for basketry (basket-grade trees have a tree diameter of 6–8 inches, a straight trunk that is 8–12 feet, and no limbs or knots the length of the log being used). A few black ash ranging in age from 70 to 100 years old were felled to assess their age and how well they were growing. One 76-year-old tree was 4.5 inches in diameter; another 70-year-old tree measured 8.5 inches. Tree ring examination indicated periods of slow growth.

Frost plans to remeasure growth of the trees at 3-year intervals to determine their response to removal of competing trees. He will also make observations on the regeneration of black ash after thinning. Frost has already noticed stump sprouting of the black ash that were felled to assess age and growth.

Frost expended about 8 hours selecting crop trees, girdling or felling, tallying, and conducting tree ring assessments on the 0.45-acre treatment area, which is a good deal more time than during normal timber stand improvement operations (about 1–1.5 acres per day).

Additional work on black ash silviculture titled “Black Ash (*Fraxinus nigra*) Silviculture: Combining Traditional Ecological Knowledge and Science to Sustain a Natural and Cultural Resource” is currently being proposed by researchers at the USDA Forest Service, Northeastern Research Station, and the St. Regis Mohawk Tribe, Hogansburg, NY. The project has four goals: enhancing the current supply of basket-grade logs; promoting cross-cultural exchange between scientists, foresters, landowners, and basketmakers to ensure ecologically and socially sustainable management of black ash; expanding the knowledge base for developing criteria and indicators for sustainable black ash management; and investigating black ash ecology on a regional scale, which includes establishing research silvicultural plots in New York, Vermont, and New Hampshire. For further information on this proposal, contact Marla Emery, USDA Forest Service, 705 Spear Street, P.O. Box 968, Burlington, VT 05402-0968, phone: (802) 951-6771 ext. 1020, e-mail: memery@fs.fed.us.

Identifying Black Ash

Black ash bark, grayish brown in color, starts out smooth and becomes scaly to corky with age. In contrast, both green and white ash have interlacing corky ridges forming obvious diamonds, with color ranging from ashy gray to brown.



Black ash



White ash



Green ash

Biodiversity

Growing American Ginseng in Your Backyard or Woodlot

By Roger Monthey

My house lot in southeastern Maine is heavily shaded by northern red oak, white pine, and red maple. I wanted to plant something that would grow under such dense shade. Knowing that some small woodlot owners have had success growing American ginseng, which requires at least 70 percent shade, I decided to give it a try. I purchased seed from a company in northern Wisconsin and planted it in a raised bed about 5 by 15 feet in September 2000. The raised bed was outlined with landscape timbers and filled with silty loam purchased from a landscaping company.

I planted the seeds in rows about 4 inches apart at a depth of about ½ inch and covered them with soil and finely chopped leaf debris that I had processed with my lawn mower. The following spring I was rewarded with a number of small plants that eventually resembled strawberry plants with three small leaves. Some of the seeds did not germinate for unknown reasons, although I did notice some rodent tunnels within the bed.

During the second growth season (2002), surviving ginseng developed its typical growth form of an unbranched main stem with a single whorl of once palmately compound leaves. I added some gypsum (calcium enhancer) to the soil to promote better growth. I harvested one of the roots in late August.

This has been a very interesting project, and I hope to continue to monitor growth for a number of years. My goal is to harvest a small number of these roots for my own consumption and to retain some as an added element of biodiversity to my surroundings.



This second-year ginseng root is beginning to exhibit the stick figure shape typical of older roots.

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Biodiversity Workshop at Maine's Holt Research Forest

A workshop entitled “Biodiversity—Knowing Your Forest” was held at the Holt Research Forest near Arrowsic, Maine, on September 28. About 30 people attended, many of whom are landowners in southern Maine. Roger Monthey, Forest Stewardship Coordinator for the Forest Service’s Durham Field Office, served as the main presenter for the day, with assistance from Kevin Doran of the Maine Forest Service, Paul Miller of the Small Woodlot Owners Association of Maine (SWOAM), and Jack Witham of the University of Maine and Holt Woodland Research Foundation. The workshop focused on species diversity on Maine woodlands. Participants learned about identifying typical flora and fauna inhabiting these woodlands, and measuring and recording biodiversity data gathered from field plots using the NED software developed by the Northeastern Research Station in Burlington, VT. (For further information on NED, visit www.fs.fed.us/ne/burlington/nedindex.htm.)



Workshop participants recap the day's program.

Maintenance of biodiversity is a major issue in Maine (as well as other States). In the mid-1990's, the State forged a collaborative effort among State and Federal agencies, environmental groups, commercial forest and conservation landowners, scientists, and other concerned individuals to address biodiversity. Among other things, this effort resulted in the 1996 publication *Biological Diversity in Maine—An Assessment of Status and Trends in the Terrestrial and Freshwater Landscape*. Copies of this report may be obtained from the Maine Geological Survey, Department of Conservation, 22 State House Station, Augusta, ME 04333, (207) 287-2801.

Invasive Plant Survey Volunteers Needed

The New England Wildflower Society (NEWFS) needs volunteers to identify invasive plants and document their current range. The first cadre of volunteers was trained in 2002; additional volunteers will be trained in 2003 and 2004. Two-day training programs in each New England State will include an indoor classroom session using slides, herbarium sheets, and other materials, and field visits to local sites where infestations of invasive species occur.

Information collected will be entered into the Invasive Plant Atlas of New England (IPANE) at the University of Connecticut. The data will be used for early detection of problem species, research, and decisionmaking on how to control invasive species to slow their spread and reduce their impact. For more information, visit the New England Wild Flower Society Web site at www.newfs.org or the IPANE Web site at www.invasives.eed.uconn.edu/ipane.

Those interested in volunteering should contact Bryan Connolly, NEWFS Invasive Plant Survey Coordinator, 76 Warrenville Road, Mansfield Center, CT 06250, phone: (860) 423-8305 or (508) 877-7630 ext. 3206, e-mail: bconnolly@newfs.org or connollybryan@hotmail.com.



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Neckera pennata (photo by Ken Dudzik, USDA Forest Service)

Naturalist's Corner

Feather Flat Moss

The feather flat moss (*Neckera pennata*) is a beautiful moss that grows as “shelves” from tree trunks or rocks. Its distinctive shelf-like growth makes it look like a landing strip for small flying insects. According to Janice Glime in her book *The Elfin World of Mosses and Liverworts*, the leaves are rippled (i.e., undulate) like a lake on a windy day. The elliptical leaves extend on both sides of the stem. *Neckera* was used by early humans during the Stone Age in Germany, apparently to plug seams and cracks in stone buildings. Even today, *Neckera* is used similarly in boats and canoes. One species of *Neckera* has also been used to make cords to decorate ladies' hats. *Neckera pennata* is commonly found in the Northeast on a variety of hardwood trees, including black ash.