



# Forest Stewardship

## Information Exchange

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Fall/Winter 1999  
Volume 2, Issue 2

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Produced by:



USDA Forest Service



Northeastern Area  
State and Private Forestry

Editors:

**Roger Monthey,**  
*Forest Stewardship Program  
Representative*

**Toni McLellan,**  
*Wildlife Biologist*

### Stewardship News

#### ***“Raising the Bar”— Improving the Quality of Forest Stewardship Plans***

The Northeastern Area State and Private Forestry has initiated an effort to improve the quality of forest stewardship plans. From the inception of the Forest Stewardship Program in 1990, stewardship plans have been written for approximately 7.3 million acres of forest land. In the beginning, the emphasis was to place as much nonindustrial private forestland as possible under stewardship management plans. Although we continue to strive toward this goal, we are also especially interested in improving the quality of existing stewardship plans. The Northeastern Area and the State Foresters want to encourage continuous improvement in the program. We would like to assure high quality by (1) adhering to higher technical standards, (2) ensuring that our landowner clients are indeed satisfied and motivated by the assistance they receive, and (3) providing information that is desirable for needs other than as a requirement to receive government cost-sharing.

When the Forest Stewardship Program was initiated, minimum standards were established for stewardship plans. A brief summary of these minimum standards and the new, additional standards follows.

### Minimum Standards

1. Landowner name, address, and phone number
2. Plan preparer name, address, and phone number
3. Stewardship acres
4. Landowner goals and supporting stand objectives
5. General property description
6. Map with property boundaries, cover types, water, roads, etc. clearly and adequately labeled
7. Known threatened and endangered species
8. Soils information (can be generalized over entire property when soils are uniform)
9. Stands by cover type and area (acres)
10. Description of dominant vegetation, including tree species and size class
11. Schedule for completion of prescribed activities for the next 5 years

### Additional Standards

1. Plan preparation date
2. Legal description, or directions to site
3. Regional/subsection national hierarchy information
4. Interaction with surrounding properties
5. Cultural heritage databases checked

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## **“Raising the Bar”**

Continued from page 1



6. Stand characteristics, based on a reliable field inventory that includes the following:
  - a. Stand age
  - b. Stand health
  - c. Site quality
  - d. Stocking
  - e. Stand volume
  - f. Timber quality
  - g. Growth rate
7. Stand history
8. Integrated items (based on observation or printed reports):
  - a. Habitat and wildlife uses
  - b. Water quality issues
  - c. Timber production potential
  - d. Recreational opportunities
  - e. Important natural features
9. Long-range silvicultural objectives for each forested cover type or stand are clearly stated and are related to landowner goals
10. Schedule for completion of prescribed activities for the next 10 years
11. Management Unit Analysis Table that summarizes stands (management units) by area, site class, cover type, description, management objectives, and recommended management activities
12. Summary paragraph from landowner profile that evaluates landowner’s available Time, Interest, Money, and Energy (TIME)
13. The plan information is presented in a logical format that is easy to follow
14. The writing style is easy to read and understand
15. The writer avoids wordiness, jargon, and mistakes in grammar and spelling
16. The plan meets the landowner’s needs and provides useful advice in a skillful way

17. The plan is likely to inspire the landowner to action

We hope that by increasing the quality of the plans, program participation as well as implementation of on-the-ground activities will increase.

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## **New Publication**



Christine Parrish of the Maine Forest Service has recently produced a publication, *The Woods in Your Backyard: A Homeowner’s Guide*. The book introduces forest ecology and management concepts in a way that, according to the author, “. . . is both accessible, fun, and scaled down to be relevant to those who own as little as a quarter of an acre.” There are eight parts to the publication.

1. Getting to Know Your Woods: A Landowner’s Primer
2. Home Improvement for Wildlife: Making Your Woods Attractive to Wildlife
3. Beauty and Adventure Out Your Backdoor: A Place for Fun and Reflection
4. From Mushrooms to Maple Syrup: Specialty Products from Your Woods
5. Safe, Safer, Safest: Be Aware of Woodland Hazards
6. Being a Friend to Your Woods: Protecting Your Land from Damage
7. Neighborly and Family Relations: Benefits of Working Together
8. Turning Great Ideas into Action: Planning Is the Key

The first 5,000 copies of *The Woods in Your Backyard* are available free to the public and will be distributed directly from the Maine Forest Service office in Augusta (phone: 207-287-2791).

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## **Vermont Family Forests**

Vermont Family Forests (VFF) is a nonprofit forestry education and outreach program. It is a cooperative effort by the Vermont Department of Forests, Parks and Recreation (under the auspices of the Addison County Forester) and neighborhood landowner and interest groups such as the Lewis Creek Association, the Otter Creek Audubon Society, and the Watershed Center. Its mission is to promote the careful cultivation of local family forests for economic and social benefits



while protecting the ecological integrity of the forest community as a whole. The target areas for VFF activities are the watersheds of Lewis Creek, Little Otter Creek, and the New Haven River, totaling about 170,000 acres.

Vermont Family Forests has been a very active organization. Some of their accomplishments are listed below.

1. Adopted a set of voluntary timber management practices designed to protect site productivity, water quality, and biological diversity.
2. Sponsored many workshops on a variety of forest-related subjects, such as portable sawmills, solar wood drying kilns, wildlife habitat, amphibians and reptiles, chain saw safety, riparian zone restoration, wood identification, timber grading, and water quality protection.

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## Vermont Family Forests

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3. Worked with Natural Forest Products of Burlington, Vermont, to supply a portion of the 125,000 board feet needed for the new Middlebury College Science Center. Logs for the project came from four VFF member woodlots.
4. Secured a grant from the Vermont Sustainable Jobs Fund for Phase 1 of the its Green Certification Project. The goals of the project are as follows:
  - a. Promote the use of sustainable forestry practices on family forests
  - b. Improve the financial returns of family forests
  - c. Increase the availability of sustainably produced, locally grown forest products to local wood product manufacturers
  - d. Develop an affordable model for independent “green” certification.

Green certification began in the early 1990’s to enable customers to purchase forest products derived from sustainably managed forests. This is accomplished through third-party, independent verification of the use of sustainable forestry practices and tracking forest products from stump to shelf. The Forest Stewardship Council (FSC), an independent, international, nonprofit organization of environmental, social, and forest products industry representatives, was formed to set guidelines for sustainable forest management. FSC offers a retail product label for use with certified products. In the United States, third-party, performance-based certification is offered only by two FSC accredited organizations—SmartWood of Richmond, Vermont, and Scientific Certification Systems of Oakland,

California. Vermont Family Forests was officially certified by SmartWood in the summer of 1998. Owners of 31 parcels with woodlands ranging in size from 32 to 1,757 acres, for a total of 4,718 forested acres, were included in the first phase.

VFF is working to complete Phase 2 of its Green Certification Project, which includes market, organizational, operational and network, and capital development. The potential for construction of energy efficient, wood drying kilns to dry lumber locally has been examined. In Phase 3, VFF will seek to increase the certified land base, create a local, green certified forestry network, install a secure chain of custody system, complete a value-adding project, and carefully document economic, ecological, and social impacts of a local, green certified network.

For further information, contact David Brynn, Addison County Forester and VFF Director, 1590 Route 7 South, Middlebury, VT 05753-8997; phone: 802-388-4969; fax 802-388-0511; E-mail: david.brynn@anrmail.anr.state.vt.us

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## Low-Grade Wood Market Report

Many forest landowners have low-grade trees dominating forest stands on their properties. Timber stand improvements (TSI) can be used to improve these stands, but are they economically feasible for the landowner? Markets for low-grade wood are a key factor in enabling landowners to utilize TSI to practice sound stewardship activities and sustainable forestry.

A recent report examines the potential for new or expanded markets for low-grade wood in New Hampshire. The

report identified five potential markets for low-grade wood: wood energy, including “green” power marketing of existing wood energy plants; solid wood composites; chip export; co-firing at coal plants; and biofuels/ biochemicals. The report suggests that consumers may be willing to pay a little more (compared to coal and other electricity producers) for power generated by wood energy, which is more environmentally beneficial. Production of oriented-strand board, a solid wood composite, utilizes green fiber as a raw material, which is of lower quality than that used by sawmills. Wood chips are a potential export product, although the recent Asian economic downturn does not help the outlook for this market. Co-firing is defined as supplementing different fuels in boilers designed to burn coal exclusively. Although this is technically feasible dependent on boiler specifications, it is not cost-effective at this time as coal is currently cheaper than green wood. Another potential market for low-grade wood is chemical production. Technology exists to produce biochemicals like levulinic acid (used as an ingredient in other chemicals) and biofuels such as ethanol (used as a fuel or fuel additive).

For more information or a copy of this report, contact one of the sponsoring agencies: State of New Hampshire Division of Forests and Lands (603-271-3456), State of New Hampshire Governor’s Office of Energy and Community Services (603-271-2611), or Sarah Smith at the University of New Hampshire Cooperative Extension (603-862-2647).



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## **Ongoing Research at the Durham Lab**

A session on coarse woody debris was held at the 2nd North American Forest Ecology Workshop at the University of Maine, June 27–30 in Orono. Contributors from the USDA Forest Service, Northeastern Research Station included John Brissette, Jeffrey Gove, and Mariko Yamasaki.

Coarse woody debris (CWD) is an important structural component of forests for maintaining biodiversity. Standing snags and downed woody material affect many ecosystem processes, including nutrient cycling, wildlife habitat, and hydrology. A growing concern is how long-term timber harvesting may affect the volume and characteristics of CWD. Efficient measurement is essential to the evaluation of how much CWD is needed to maintain ecosystem processes. Research by John Brissette, Jeffrey Gove, and Mark Ducey (University of New Hampshire) compared two methods of measuring CWD in stands with different treatment histories in a long-term silviculture experiment on the Penobscot Experimental Forest in east-central Maine. The CWD sampling methods included line-intersect and point relascope sampling using three angles. The former method is often cited; the latter is a relatively new technique with little field experience but is well grounded in theory. It is analogous to variable radius plot sampling for estimating basal area of standing trees and is a quick, easy method to determine which pieces of CWD are “in” on a plot.

Mariko Yamasaki is conducting a CWD study on the Bartlett Experimental Forest in New Hampshire, and has noted that the various silvicultural systems used in New England (single-tree and group selection, shelterwood,

and clearcutting) influence the recruitment of CWD to the forest floor compared with unmanaged or natural forest conditions over time. CWD was studied on existing cruise plots; measurements included (1) an ocular estimate of overstory dominance (hardwood, softwood, or mixed wood), and (2) for each piece of CWD, length to a 4-inch diameter top, diameter at the midpoint, log condition, and signs of wildlife usage. CWD volumes were compared among the overstory dominance categories and the three silvicultural system categories.

Another study to evaluate the effects of timber harvesting on CWD in industrial forests of Maine has been conducted by Stacie Grove, John Hagan, and Andrew Whitman of the Manomet Center for Conservation Sciences, Brunswick, Maine (phone: 207-721-9040; E-mail: slgrove@ime.net). This study surveyed standing dead wood (snags) and downed woody material (i.e., logs, tops, branches) in 26 habitat types, ranging from clearcuts and regenerating stands to mature, old-growth stands, as well as selectively cut stands, of hardwood, softwood, and mixedwood forest types. Comparisons between the habitat types are made for volumes, size-class distributions, decay-class distributions, and physical characteristics of standing and downed dead wood. The authors offered management guidelines.

### **References on Sampling for Coarse Woody Debris**

Brissette, J.C.; Ducey, M.J.; Gove, J.H. [Draft]. A field test of point relascope sampling of coarse woody material in managed stands in the Acadian forest.

Gove, J.H.; Ducey, M.J.; Ståhl, G.; Ringvall, A. [Draft]. Point relascope sampling: A new method for assessing downed coarse woody debris. *Journal of Forestry*.

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Ringvall, A.; Ståhl, G. [In press]. On the field performance of transect relascope sampling for assessing downed coarse woody debris. *Scandinavian Journal of Forest Research*.

Ståhl, G. 1997. Transect relascope sampling for assessing coarse woody debris: The case of a  $\pi/2$  relascope angle. *Scandinavian Journal of Forest Research*. 12: 375-381.

Ståhl, G. 1998. Transect relascope sampling—A method for the quantification of coarse woody debris. *Forest Science*. 44(1): 58-63.

Ståhl, G.; Lämås, T. 1998. Assessment of coarse woody debris. In: Bachmann, P.; Köhl, M.; Päivinen, R. (eds.). *Assessment of biodiversity for improved forest planning: Proceedings of a conference; 1996 October 7-11; Monte Verità, Switzerland*. European Forest Institute (EFI) Proceedings No. 18. Boston: Kluwer Academic Publishers: 241-249.

Ståhl, G.; Ringvall, A.; Gove, J.H.; Ducey, M.J. [In review]. Bias due to slope in point and transect relascope sampling of downed coarse woody debris. *Forest Science*.



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## Biodiversity



### Butterflies and Forests

Many people equate butterflies with open fields and flowers. While this is certainly true, forests are also important habitat areas. Butterflies are part of the diverse ecosystem that constitutes a forest and are found from young, open areas to mature forest stands.

According to John Grehan and James Linnane in their publication, *Butterflies of the Green Mountain National Forest*, butterflies function in the ecosystem as pollinators of flowers, recyclers of nutrients, and prey for many birds, spiders, and small mammals. Butterflies belong to the insect order Lepidoptera, which literally means scaly (Lepido) wing (pteron) and refers to the thousands of small scales that cover a butterfly's body and wings. There are about 800 species of butterflies in North America, with about 100 species in the state of Vermont. Butterflies can be identified as day-flying moths having club-tipped antennae. There are two groups of butterflies—the "true" butterflies, which have antennae with rounded clubs, and the skippers, which have antennae with hooked clubs and are usually heavier bodied.

Butterflies can be observed in roadways, walking trails, meadows, openings within forests, and along forest edges. Roadways are excellent for seeing some of the larger species (e.g., tiger swallowtail) as they come to the ground to feed or rest. Trail entrances often have openings with an abundance of flowers that attract butterflies.

Butterflies are active from snowmelt to the first snow at the onset of winter. As soon as springtime temperatures reach 60 °F, butterflies emerge on sunny days

to search for food. The length of time a particular adult butterfly species can be seen varies. Some have a narrow window of activity (1-2 weeks) while others may be present up to a month or more. Late June and July are the best time for observing the maximum number of species. Some of the Green Mountain species include Canadian tiger swallowtail, black swallowtail,



cabbage butterfly, mustard white, banded hairstreak, Acadian hairstreak, eastern tailed blue, spring aquare, silvery blue, question mark, hop merchant, gray comma, mourning cloak, Milbert's tortoise shell, red admiral, American painted lady, painted lady, white admiral, red spotted purple, viceroy, inornate ringlet, common wood nymph, monarch, long dash, dun skipper, and dreamy dusky wing.

The town of Southwest Harbor, Maine, near Acadia National Park has its own butterfly garden. The garden was installed by the town to promote conservation education and gardening instruction for the community. The town has planted a variety of nectar and host plants, which are essential in the life cycle of butterflies.

Nectar plants must be planted to ensure continuous feeding and visitation by butterflies. Shape, color, and fragrance are important in selecting plants. *Shape* is important as butterflies look for a place to land. Daisy-like flowers (composites), panicles (large flower clusters on a stem), and umbels (flat topped flowers that originate from a single apex) are preferred by

butterflies. They provide good landing spots and easy access to the nectar. *Color* is important because butterflies see in the ultraviolet range and prefer strong colors such as purple, yellow, and orange. The UV light enables them to see hidden ultraviolet patterns on the petals that guide them to the central nectar source. *Fragrance* is important because butterflies like flowers with a heavy perfume; they are attracted to many older plant varieties that have a stronger fragrance than newer hybrids. Some suggested nectar plants include butterfly-bush (*Buddleja*), cosmos, bee-balm (*Monarda*), butterfly weed (*Asclepias*), coneflower (*Echinacea*), black-eyed Susan (*Rudbeckia*), and zinnia.

Butterflies are attracted to host plants as well as nectar plants. They selectively choose host plants on which to lay their eggs, and these same plants provide the larval food for the caterpillars when they hatch. Eggs are laid on the undersides of leaves. Depending on the species, egg laying can occur several times per season. Caterpillars can be found on or near well-eaten leaves of host plants. The butterfly pupa or chrysalis may be found in a protected area attached to the underside of leaves or branches. Some herbs and vegetables serve as host plants, including blueberry, cabbage, dill, ironweed (*Vernonia*), mallow (*Malva*), milkweed, parsley, and spice-bush (*Lindera*).

Reference



Grehan, John R.; Linnane, James P. 1996. *Butterflies of the Green Mountain National Forest*. U.S. Department of Agriculture, Forest Service, State and Private Forestry, Northeastern Area. 42 p. Copies available from the USDA Forest Service, Northeastern Area, P.O. Box 640, Durham, NH 03824.

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## Naturalist's Corner

### Interpretive Hikes



Interested in leading nature hikes for your family, or for local groups and schools? Environmental education is essential if we hope to be able to deal with our environmental problems now and in the future.

Leading successful nature hikes takes a bit of planning. According to George Knudsen, former Chief Park Naturalist for the Wisconsin Department of Natural Resources, most specific themes to get the most out of Knudsen feels that of interest along a particular hike, thus turning the hike into a hodgepodge of topics.



Department of Natural Resources guided hikes should follow enable the participants to each hike experience. there is generally so much any nature trail that a hike

In his short publication *Nature Hike Themes*, Knudsen describes a variety of hiking themes. Themes are classified into groups such as Plants and Plant Values. Hike themes listed under this group include Nature's Food Factories; Can You Find An Ugly Plant?; Trees and Shrubs; Wildflowers and Ferns; Parasites, Saprophytes, and Diseases in Nature; Tree and Shrub Forms; Mushroom Adventures; Plants and Their Attributes; Plant Uses by Man; and Edible and Poisonous Plants.

Let's take a closer look at the theme Trees and Shrubs. According to Knudsen:

"This hike theme should concentrate on the identification of trees and shrubs. Whenever possible the use of these plants by white men and/or Indians should be stressed. Their use by mammals, birds, and other animals should be pointed out when important species are encountered. Discuss the aesthetics of their general forms, leaf shapes, fall colors, etc., emphasizing that all plants are important to mankind in many different ways. If the plants are flowering or fruiting, these structures should be pointed out since many people have never looked closely at the flowers and fruits of our common woody plants. Other values are as ornamentals, windbreaks, nutrient 'pumps,' and water 'pumps.' "

I (Roger Monthey) used to work as a Seasonal Naturalist with the Wisconsin Department of Natural Resources at Governor Dodge State Park, located near Dodgeville. George

Knudsen was my boss. One of my favorite hike themes under the Animals and Animal Values group is Sugaring for Moths. This is an incredible theme and our park visitors really enjoyed it. According to Knudsen:

"A moth hike is often a real eye-opener. It should be undertaken at dusk and continued until after dark. It can be done in late May, June, July, and August on warm, sultry, calm nights. On good nights there will usually be a host of small, often colorful moths, and other insects brought to the bait. In early summer you may attract the large hawk moths and in July and August you will often attract many large, colorful underwing (*Catocala*) moths. This specialized hike will usually net only a few hardy, inquisitive hikers, but this is preferred since everyone will be able to see the moths. (Sometimes a very large group will turn out for this hike.) When announcing the time and place for this hike, ask the hikers to bring flashlights and warn them to be very careful when walking the trail after dark.

"Instructions: About an hour before dusk, choose a trail segment or short loop trail that lies upwind from a large, wooded area, or a woods-field edge. Mark 20-30 trees or fence posts along the trail with a small piece of white paper (use thumbtacks) to aid in finding the baited trees after dark. Paint a 2- by 15-inch strip of bait on each marked surface. Time the arrival of the participants so that they are at the trailhead by deep dusk. Then begin the hike, asking everyone to walk slowly and quietly. Only the leader should shine his light ahead to locate the baited trees and moths. The hikers must shine their lights only on the trail tread. When moths are seen, everyone must approach them with extreme caution, as the leader holds his light beam just to one side of the moths and not directly on them. If the bait has stupefied the moths they will often hold well. The leader can, with care, catch one of the moths in a clean, wide-mouthed jar and pass it among the observers.

"To make the bait, mix 1 pint of beer and 1 pint of corn syrup with 2 pounds of brown sugar. Simmer this mixture until melted. Put it in jars. Just before applying it on the trees with a small paintbrush, mix in 2 or 3 ounces of rum. If available you may add 8617 L••355.73272 342.125 7L••355.67008 342.14287 L••355.6026



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## Interpretive Hikes

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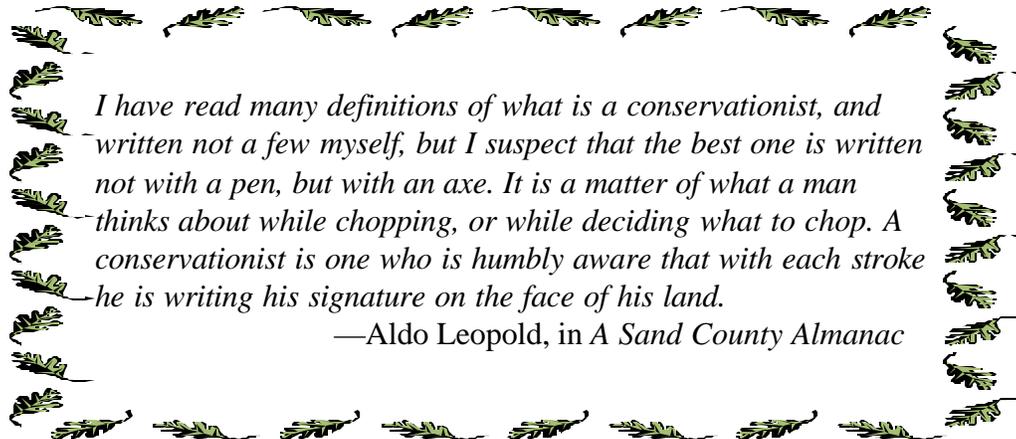
Moth slides may be obtained from John Grehan, Frost  
Museum, Penn State University (814-863-2865); Bob  
Acciavatti, USDA Forest Service, Morgantown, WV (304-  
285-1547); or the Entomological Society of America website  
(www.entsoc.org).

### Biodiversity Resources

Back issues of the Forest Stewardship  
Information Exchange are located at  
[http://willow.ncfes.umn.edu/fih\\_pubs/alph\\_list.htm](http://willow.ncfes.umn.edu/fih_pubs/alph_list.htm)

For information on urban sprawl, refer to  
<http://www.sprawlwatch.org>

For more on Maryland's Smart Growth Initiative, see  
<http://www.op.state.md.us/smartgrowth/index.html>



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USDA Forest Service  
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