

The New York
FOREST OWNER

A publication of the New York Forest Owners Association

November/December 1997



**OSHA's Danger Tree Regulation
Just Say No To Highgrading
GypsyMoth—Down & Out?**

**THE NEW YORK
FOREST OWNERS
ASSOCIATION**

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Cover:

Log Drive in the Hudson River near Glen Falls, probably late 1800's from US Forest Service files at ESF Moon Library Archives. Photo provided by Professor Norman Richards.

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A SILVICULTURAL TOOL



A NYS DEC controlled burn on State Forest #37, off Kendrick Road, Town of Sherbourne, Chenango County. Photo by Gary Cole.

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President's Message

By Jill Cornell

Over the summer Ron Pedersen and I met with different chapters across the state to get their ideas and suggestions for long range planning for NYFOA, and to find a name for our independent tax exempt organization. NYFOAns are a bright, enthusiastic and creative group; the end result was a 12 page list of ideas!

The name for the tax exempt organization is **New York Woodland Stewards, Inc.** The incorporation papers have been sent to the state, and are expected back shortly. Then the review process with the IRS will begin. Hopefully by spring of '98, it will all be in place.

Our **Reciprocal Organizational Memberships** have been warmly received. This vehicle enhances communication with other landowner and related groups through exchange of publications, while eliminating dues and board seat exchanges, and refraining from automatic policy endorsements. To date ROMs have been set up with VT, NH, NJ, PA, MA, Catskill Forestry Assoc. (CFA), and the Empire State Forest Products Assoc. (ESFPA).

I thank **Bob Sykes** for finalizing our membership survey questionnaire. Everyone will receive a copy either with your renewal or separately. While I hope that you will answer all the questions, please omit any that you feel are too personal. We will use the address, phone, fax and e-mail information to produce a membership directory. The acreage amounts will be used as a collective number to increase our clout on legislative issues. The remainder of the information will be used to identify issues and interest areas for programs, etc.

There is a good possibility that our first **NYFOA notepaper card series** of eight cards will be available for holiday gifts. (See preview photos, page 19.)

A **Forest Travel Tour**, similar to those sponsored by NYFOA in the 80's is being considered. Probable destination would be Seattle, WA with trips to the Olympic Peninsula, Vancouver, and the Cascades. Any suggestions or woodlot owner contacts in that area are most welcome.

In August, I met with the new Deputy Commissioner of Natural Resources at DEC, **Peter S. Duncan**. We New Yorkers are **very** fortunate to have Pete in that position. He has a strong background in natu-



Jill Cornell

ral resources and forestry, and was President of the Pennsylvania Forestry Association in the '70s.

Our packet of information for new NYFOA members has been enlarged to include a glossary of forestry terms, and a checklist for timber sale contracts. Anyone wishing to receive a copy can call Debbie Gill at our 800 number.

If you were not at the Fall Meeting at Tully, you missed an interesting, informative program, and all the camaraderie of nice tree people. There is a good possibility that **Jim Peek**, an excellent woods photographer from western NY, will participate at our Annual Meeting Program in April, 1998 in Syracuse. He will explain to us how to capture our woodlots at the best time, and what we can learn from our photos.

There is still time for any of you who've found "pot" growing in your woods, either in the ground or in containers, to send me a description of what you experienced, so an article can be written on the subject for **THE FOREST OWNER**

NYFOA is too well kept a secret! Bring a friend to the next woodwalk or program at your chapter! And loan a copy of **THE FOREST OWNER** to a potential member.

Meanwhile, I hope you enjoy celebrating trees and forests as you celebrate the holidays—apples, nuts, citrus, turkey, venison, evergreen wreaths and trees, the tables that hold your feasts, and the fires in your woodstoves and fireplaces.

Happy Holidays!

Association and People

Jill Cornell, NYFOA's President, has been named the new Regional Vice President and chair of the Northeast Woodlands Committee of the National Woodland Owners Association (NWOA), according to an announcement by President **Keith Argow**.

Jill replaces former NYFOA Executive Director, **John Marchant**, who has served NWOA as Northeast Vice President since 1990.

John Marchant was the recipient of the 1997 Lifetime Achievement Award granted by the National Association of State Foresters (NASF). The NASF represents the State forestry directors of all fifty states, seven U.S. territories, and the District of Columbia.

Cycles

By Dorothy S. Darling

It begins as a whisper,
a shivering of leaf and grass
in the hour neither day nor night,
recalling the past to my mind,
the whisper growing, breathing its
coolness
into autumn's bright face
as it lay down its orange and gold
with seasonal grace.

Whisper into breeze transports
dry, curling leaves,
spreading them on bush and
lawn,
turning my restless thoughts to a
time
when small wonders were my
song.

As breeze turns to wind,
night comes in, covering
autumn's glow,
and I am lost in long ago ventures
that transcended the mundane
with prolific pretending of the
mind,
and suddenly I succumb to envy
before the cycle of seasons
unaltered by time.

The OSHA "Danger Tree" Rule: Does it Affect You?

By Andrew Egan and Carol Alerich

Recognizing the hazards involved in the timber harvesting industry, the Occupational Safety and Health Administration's (OSHA) current Logging Safety Standard (published on October 12, 1994) includes specific requirements for work around potentially hazardous trees and for safe manual felling techniques. Effective as of February 9, 1995, and revised on September 8, 1995, this document defines a "danger tree" as "a standing tree that presents a hazard to employees due to conditions such as, but not limited to, deterioration or physical damage to the root system, trunk, stem or limbs, and the direction and lean of the tree."

Because of the inherently hazardous nature of logging, on-the-job safety has been the subject of considerable concern and discussion. In particular, the issue of responsibility for potentially dangerous preharvest forest conditions is of importance to landowners, forest managers and logging contractors.

Obviously, given the OSHA guidelines, the number of "danger trees" encountered in the preharvest forest environment has implications for logging safety, practice and costs.

The purpose of this study was to estimate the number of "danger trees" in the forests of four contiguous northeastern states for which data were available: New York, Ohio, Pennsylvania, and West Virginia (Figure 1). Specifically, those trees that showed evidence of conditions that may be the cause of the most common logging fatality—a falling object accident—were investigated. These dangerous tree characteristics included broken tops, dead tops and dead trees. The results of this study help to clarify the scope of the "danger tree" phenomenon in forests of central Appalachia.

Background Information from the Bureau of Labor Statistics indicates that 53 percent of logging injuries take place at the stump during felling, delimiting, and topping activities. Moreover, the act of fell-



Almost all logging jobs, including this Pennsylvania tornado salvage, are affected by the current OSHA "Danger Tree" rule.

ing trees is responsible for nearly one quarter of all logging injuries. Falling objects account for most logging fatalities with falling trees accounting for more than two-thirds of the struck-by-falling-object deaths.

Poor felling technique has been implicated directly in about 15 percent of felling fatalities. And high fatality rates in logging and their association with tree felling are not peculiar to the US. Information available from other countries, including Canada, New Zealand, and Australia, indicates both similar trends in and causes of logging fatalities.

Ongoing litigation in the northeastern United States is testing the question of who is legally responsible for potentially unsafe conditions on logging jobs. Recently, a feller in West Virginia claimed to be struck by a snag that was accidentally tipped in his direction when the skidder operator was

pulling down a severed tree that the feller had lodged in a nearby supporting tree.

In the process the feller, an employee of an independent logging contractor, alleged to be injured by the snag and has sued both his employer and the company that owned and managed the land. The focus of the plaintiff's complaint was that the forest management company did not provide a safe working environment, as required by OSHA's General Duty Clause.

The snag that struck the injured logger, they claimed, should have been removed by the forest management company before beginning the logging operation. The plaintiff cited a paragraph in the 1970 OSHA pulpwood logging standard (in effect at the time of the accident) that states:

Dead, broken, or rotted limbs or trees that are a hazard (widow makers) shall be felled or otherwise removed before commencing logging operations, building roads, trails or landing, in their vicinity.

The 1970 OSHA pulpwood standard stated that these trees must be felled or removed before work is begun in their vicinity. The 1994 OSHA standard specifies that:

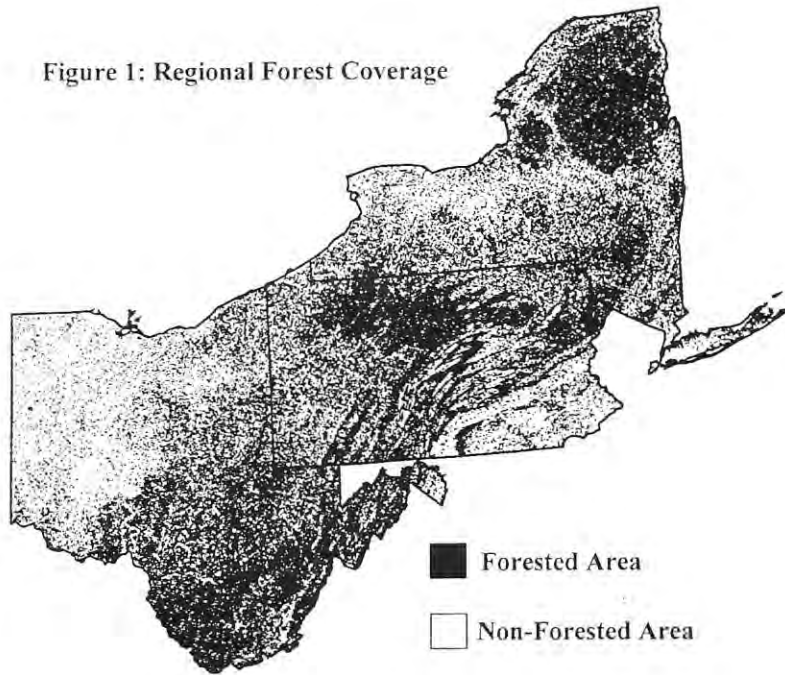
Each danger tree, including large trees and snags, shall be felled or removed using mechanical or other techniques that minimize employee exposure before work is commenced in the area of the danger tree. If the danger tree is not felled or removed, it shall be marked and no work shall be conducted within two tree lengths of the danger tree unless the employer demonstrates that a shorter distance will not create a hazard for an employee.

The case of the injured West Virginia logger was recently settled out of court.

Methods

Data collected by the US Forest Service

Figure 1: Regional Forest Coverage



for the states of New York, Ohio, Pennsylvania, and West Virginia were analyzed to estimate the number of trees considered to be hazardous as described in the most recent OSHA guidelines for the logging industry. All trees 5.0 inches diameter at breast height (dbh) were evaluated on a region wide sample of permanent plots.

Those hazardous tree conditions that could be assessed both objectively and practically were evaluated. These included trees with broken or dead tops, standing dead trees (i.e., dead trees with no signs of advanced decay) and snags. Those trees described as hazardous by OSHA due either to deterioration of the root system or to direction or lean of the tree were not investigated. Not included in the original sampling protocol, damage to the root system is difficult or impossible to assess during large-scale region wide studies and would require excavation of root systems of each tree to definitively determine deterioration. Hazardous tree direction and lean would have required subjective determinations on the part of the field crews that might have lead to inconsistent results for this category of hazard tree.

Results and Discussion

Results of the region-wide inventory indicated a substantial number of trees fitting the six conditions studied for "danger trees": alive with broken top, alive with intact dead top, dead with intact top, dead with broken top, snag with intact top, or

snag with broken top. In the four-state region, approximately 20 trees per acre were determined to be "danger trees" (Table 1).

On a per-acre basis, Ohio had the fewest such trees (almost 16 per acre) and Pennsylvania the most (almost 22 trees per acre). Two thirds of the "danger trees" (approximately 13 trees per acre) were snags, while

19 percent were live trees with either broken or dead tops and over 15 percent were dead trees with intact or broken tops. Inspection of the results suggests some consistency in trees per acre within each condition class among the states included in the study.

Overall, 12 percent of the trees studied in the four state region were "danger trees". As a percent of trees in each species group, there appeared to be little difference in "danger tree" estimates between hardwoods (12.0 percent) and softwoods (11.9 percent).

Red spruce (17 percent) showed evidence of the "danger tree" characteristics studied more often than other major softwood timber species. However, it is important to note that red spruce is considered "rare" by the US Forest Service in most of the four state region studied (i.e., it accounted for only 0.05—0.49 percent of all trees). Yellow birch (almost 18 percent) led all major hardwood timber species with "danger tree" conditions. Yellow-poplar (6 percent) had the smallest number of hardwood trees and eastern hemlock (7 percent) the smallest number of softwood trees with these conditions.

Inspection of the results indicated that there was some variability in percent of "danger trees" per species among the states

Table 1: Number of affected trees in the four- state region

	Live Trees		Dead Trees		Snags		TOTAL
	broken top	dead top	intact top	broken top	intact top	broken top	
New York							
number of trees	46,929	32,786	25,892	12,913	53,785	149,438	321,743
trees/acre	3.05	1.89	2.13	0.84	3.49	9.70	21.10
Ohio							
number of trees	14,751	10,181	13,955	3,763	35,163	43,560	120,373
trees/acre	1.95	1.35	1.84	0.05	4.65	5.62	15.91
Pennsylvania							
number of trees	34,492	22,461	38,625	13,762	94,198	144,756	348,294
trees/acre	2.17	1.42	2.43	0.87	5.93	9.12	21.94
West Virginia							
number of trees	21,711	11,169	35,921	11,049	45,349	91,267	216,466
trees/acre	1.82	0.94	3.01	0.93	3.81	7.66	18.17
Region							
number of trees	117,884	76,597	114,393	41,487	228,494	428,021	1,006,876
trees/acre	2.03	1.51	2.25	0.82	4.50	8.43	19.54

studied. The species with the most state-to-state variability appeared to be red spruce, showing none of the "danger tree" characteristics in Ohio, whereas more than 26 percent of West Virginia's red spruce displayed "danger tree" signs.

It should be noted that the study estimated only 167,000 red spruce in Ohio, the smallest species group in any state. In West Virginia, red spruce is also considered "rare" and generally grows in high, more exposed elevations where damage by wind and desiccation is likely to cause many of the "danger tree" characteristics described.

Conclusions

The question of how to define "safe working conditions" in the context of the natural forest environment is still unclear. The current OSHA standard for logging has attempted to describe tree conditions that it considers potentially hazardous. Several of these conditions, especially those related to the condition of root systems, are difficult to evaluate.

Other conditions, e.g., broken or dead tree branches and tops, are assessed more practically and objectively. Accident statistics and anecdotal evidence suggest that this latter class of tree conditions accounts for many falling object accidents, causing most U.S. logging-related deaths.

Moreover, the negative impact on wildlife habitat of clearing standing dead trees and snags—82 percent of the "danger trees" studied—also requires careful consideration. The option of removing potential wildlife habitat trees prior to harvesting may be inconsistent with the recommendation of some wildlife biologists to leave two to four large snags per acre.

Alternatively, retaining such trees while following OSHA's guidelines for maintaining a safety zone of two tree lengths around the tree, within which "no work shall be conducted," is also problematic. For example, leaving a circular safety zone with a radius of two tree lengths around a retained "danger tree" that is 60 feet tall, precludes logging activity on an area of over one acre around this tree.

Although the OSHA standard suggests that a safety zone of two tree lengths does not need to be maintained if "the employer demonstrates that a shorter distance will not create a hazard for an employee," OSHA fails to suggest ways in which this exception may be justified by an employer.

Recently, a coalition of groups including the National Wildlife Federation, the

Wildlife Management Institute, the Society for the Protection of New Hampshire Forests and the Forest Trust petitioned OSHA to change the rule, calling for it to be made "more flexible and responsible to differing circumstances." The coalition is calling for OSHA to give loggers "more discretion to use their common-sense judgment" in deciding which trees they will cut and which they will leave.

What is the scope of the "danger tree" situation in the region's forests?

This research has shown that, in the four-state region studied, approximately 20 trees per acre fall into one of the following six categories: alive with broken tops, alive with intact dead tops, dead with intact tops, dead with broken tops, snags with intact tops, or snags with broken tops. Approximately two thirds of the "danger trees" inventoried were snags.

It seems safe to assume the presence of more than 20 "danger trees" per acre in the region, since some danger tree categories were not investigated (e.g., trees with "deterioration or physical damage to the root system"), and only trees greater than five inches dbh were included in the study. Unfortunately, the practical question of how to deal safely with these trees, remain in compliance with OSHA guidelines, and leave snags for wildlife habitat after logging is not addressed by the OSHA standard.

However, from the standpoints of both personal safety and liability, loggers, foresters, and landowners should be aware of the "danger tree" elements of the OSHA guidelines.

Although sanitizing the forest of all potential hazards is impossible and, perhaps, undesirable, training in the recognition of these hazards is critical—and is now required by OSHA. Assessing "danger trees" in the felling area should be one aspect of this training. ▲

Andrew Egan is Assistant Professor of Forest Harvesting, Division of Forestry, West Virginia University, Morgantown, WV. Carol Alerich is Research Forester, United States Forest Service Northeast Forest Experiment Station, Radnor, PA. This paper is excerpted from a manuscript to be published in the Journal of Safety Research and was reprinted here with the permission of Eric Johnson, Editor of the Northern Logger and Timber Processor, wherein (August 1997) this article formerly appeared.

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Ginseng Growing Workshop

September 13-14, 1997, Ithaca, NY

By Jill Cornell

Ginseng, (*panax quinquefolium*) subtitled "the king of herbs" is also nicknamed "green gold", by W.

Scott Persons, because of the \$300-400./pound price it commands when dug in the wild. The marketable root has an 8 to 10 year growing cycle, and is found growing naturally in NY woods. Indicator plants for a probable site include: cohosh, bloodroot, trillium, baneberry, jewel weed, Jack-in-the-pulpit, May Apple, foam flower, maidenhair fern, preferably under sugar maples.

Properties ascribed to the use of ginseng include increased energy levels and stress reduction. The active ingredients are called ginsenosides. It has been used in the orient for over 5000 years, and was exported by American colonists during the 1700's. Today there are myriads of products produced in this country, from teas and ointments to soaps.

High prices have encouraged experimentation with cultivation, both here and in the orient. The commercially grown herb can be recognized by its smooth appearance, as contrasted to the wrinkled, annular-ringed wild type.

Experimental cultivation has been tried in artificial shade settings using wooden slats, and screen mesh, as well as cultivation in rows under a canopy of hardwoods. Densely planted seedlings are more prone to health problems from slugs, alternaria leaf and stem blight, and phytophthora root rot.

Ginseng is a federally protected plant. Dealers are permitted by DEC. Ginseng exported from NY must be certified by DEC,

and unsold ginseng must be certified by DEC before April 1st following harvest. Harvest season starts September 1st, and



A 4 year plant with berries. Photo by Dick Fox.

closes November 30th. Harvesters (shang diggers), are required to plant the seeds from the harvested plant within 50 feet of the dug root.

Steve Roth of North American Ginseng Association opened the workshop with an overview of ginseng's uses and varied cultivation practices in this and other countries.

W. Scott Persons, author of "*American Ginseng: GREEN GOLD*", described suitable growing sites as hardwood forests with humus soil and good drainage. First year plants have three leaves, 2nd year plants have 2 triple leaves, 3rd year plants have 3 triple leaves, and 4th year plants produce a flower which produces green seeds which ripen to red seeds.

Bob Beyfuss, one of the guest speakers, did his Masters thesis on growing ginseng, and is currently making a study of the soils found at sites of naturally growing ginseng. He reported that the critical soil factor seems to be a pH range from 3.7 to 6.2, with trace minerals found in a wide range of concentrations. Calcium also seems to be critically important.

Louise Buck, Coordinator of the Cornell University Agroforestry Group, discussed the research being done in cooperation with DEC, Agricultural Research Service, Sylvan Botanicals and others. Their preliminary conclusions are that "specific soil characteristics or microclimatic factors are likely to be more important than climatic region, slope aspect or canopy dominant for successful establishment of this endangered herb". She also commented that one site abounded with ginseng after a logging operation. Security from poachers is a problem, and mice are known to like the seeds.

For more information contact:

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Jill Cornell is NYFOA's President.

Just Say No to High-Grading, Selective Cutting, and Diameter-Limit Cutting

By Peter J. Smallidge and Michael C. Greason

Currently the prices paid for timber in New York woodlots are good and harvesting activity has increased. However, what may surprise many forest and woodlot owners is that some forestry techniques can limit options for future benefits and enjoyment — both in the long run and short term. While well-planned timber harvesting can increase your benefits, “high-grading” and related practices should be avoided.

Cutting the best trees (those of highest value) and leaving the low value, often diseased or malformed trees, is 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 that 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 exist only briefly, yet ownership objectives can be sacrificed for decades. A similar analogy from livestock is the 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 as the quality of the forest and woodlot, declines rapidly!

In addition to high-grading, similar practices exist with different names. High-grad-

ing is often disguised under the name of “diameter-limit cutting”. This is a practice that removes all trees above a certain minimum diameter. In some rare situations diameter-limit cutting is appropriate. For example, if old pasture trees are shading the growth of young hardwood saplings. Often however, diameter-limit cutting removes trees of commercial value (say above 12 or 14 inches in diameter) before these trees can attain a more valuable size and add seed and seedlings to the forest. Selective cutting is another technique where high-grading can occur. Selective cutting (generally not recommended) differs from the selection system of silviculture (a legitimate technique). Selective cutting, as commonly practiced, involves selecting the highest quality trees and cutting them. (Technical note: selective cutting by definition can include other activities such as improvement cuts) The selection system involves someone professionally trained in silviculture to select trees from all age and size classes, both high and low quality to produce an uneven-aged forest. Diameter-limit cutting and selective cutting are often rationalized by arguing to remove the bigger trees so the smaller trees can grow. However, the smaller trees may be undesirable species, poor form, or poor 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 for high-grading is greed to maximize immediate profits. Beginning in the early 1970's, demand for high-value timber increased and sawmills could pay more for certain species. Thus, markets for high-value trees grew stronger while markets for low value trees did not. Further, it costs about the same amount of money to cut and haul a \$10 tree as it does to cut and haul a \$300 tree of the same size. Another factor is that taxes on forest land not under the NYS 480-a Forest Tax Law can create financial hardships that encourage landowners to maximize immediate profits. The result is that more immediate profit is gained by cutting only the highest value trees, but left behind is a legacy of low quality trees and under-productive forests. This knowledge helps explain high-grading, but doesn't excuse it.

What are the consequences of high-grading, is it really that bad? One result is that 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 next harvest will remove the low quality trees previously left so the value at the next harvest will be reduced. 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 demand. While timber harvesting is not bad, accelerated harvesting is not in the best interest of our natural resources and conflicts with a growing demand by the public for accountability of natural resource management. As the value of the land to produce timber crops decreases, the incentive to subdivide and develop increases.

So what can you do to avoid high-grading? The first step is to work with competent and professional loggers and foresters. When you select a new refrigerator or car you likely consider several features, including price, reputation, service after the sale,

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and other long-term benefits. Similarly select your forester and logger. Ask for references, find out if the forester participates in continuing education programs and whether the logger has completed the "Trained Logger Certification" program, make a visit to forests or woodlots where they have worked, and know that the best price may not provide the best treatment for your land. The logger who outbids his competitors for a timber sale by a few percent may be more efficient or may not devote enough effort to ensure your property is left in good condition. Similarly, the forester who promises you maximum short-term profit likely doesn't have in mind the best interests for you and your land. The consequences of selecting an incompetent forester or logger will exist longer than a bad choice on a refrigerator.

A second step is to avoid high-grading is to have a written management plan. Your management plan 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. Just because a forester or logger offers to cut your timber doesn't mean it's the best time for your interests. The value of trees increases greatly as trees get bigger, and it's probably a safe assumption that good markets will continue to exist for high quality trees (although markets fluctuate).

Third, look for creative solutions to remove the low value trees at the same time the high value trees are harvested. A harvest that removes high-value and low-value trees provides financial benefits from the high- and low-value trees and improves the quality of the residual forest. One way is to have the forester mark and the logger skid the low value trees to the log landing. Then you can cut them yourself for firewood, or sell them to a firewood processor. This will require extra effort on the part of the logger and forester, which means you might not make as much money, but the benefits, including even greater profits, will exist a few years down the road.

Finally, get assistance from unbiased people to help you develop long-term objectives and management plans. Master Forest Owner Volunteers are forest owners trained through Cornell Cooperative Extension to provide nontechnical assistance to forest owners. They can help you think through your management objectives and provide sources of information. Also, NYS Department of Environmental Conservation professional foresters are available for free consultation and can provide technical expertise and guidance on forest management. Both of these groups of people can provide free, unbiased information and advice that will help you avoid some of the pitfalls of practicing short-sighted forestry. The Catskill Forest Association and New York Forest Owners Association are landowner groups dedicated to helping other landowners enjoy their forest land. Contact your county office of Cornell Cooperative Extension or the nearest DEC office for more information ▲

Peter J. Smallidge is the State Extension Forester for the Department of Natural Resources, College of Agriculture and Life Sciences, Cornell University. This article is available from Cornell Cooperative News Service (the series, Forests For Tomorrow.) Mike Greason is NYS DEC Chief of the Bureau of Private Land Service.

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LEGISLATION

By David J. Colligan

Thanks to information received by this author from the Empire State Forest Products Association (ESFPA), a reciprocal organization to NYFOA, the following is a summary of legislative highlights from 1997.

Forestry R&D Center Continued - The New York Center for Forestry Research Development received continued funding in this year's budget. For the fourth year in a row the Center was provided with a \$250,000 appropriation.

Property Tax Reforms Enacted - The STAR program was enacted and provides significant school tax relief for residential ratepayers and particularly senior citizens. The school portion of the property tax for homeowners will be reduced by an average of 27% beginning in 1999. The state will reimburse school districts for lost revenues.

New York's 'Extra' Estate Tax Eliminated - Family businesses and forest owners will be beneficiaries of significant reductions in both the federal and state so called "death" tax or estate taxes. The state's top rate will move from 21% to 16% and raises the exemption level from \$115,000 to the federal level which was \$600,000. The recent resolution of the federal budget amended this threshold to \$1 million phased in through the year 2003.

The state reduction will be accomplished over a three year period and will be fully implemented by January 1, 2000. The state's gift tax, also, is eliminated on January 1, 2000.

Timber Theft Laws Receive Update - The legislature passed two provisions updating the state's timber theft laws. Originally enacted in 1911, section 9-1501 of the Environmental Conservation Law

makes it illegal to cut "evergreen" trees without the consent of the landowners. S4003/A5411 deletes the word "evergreen" from the statute to update this law to recognize the increased value of deciduous trees.

A second bill (S4004/A5410) updates the state's trespass laws to require enforcement for the "...cutting, pulling or (digging of trees; or c) the removal of trees" when a landowner has legally posted his or her property. Enforcement had been considered optional and at the discretion of the enforcement officer or agency prior to this amendment.

These provisions were introduced to bill sponsors by ESFPA in consultation with other landowner representatives. They reflect the growing concerns over the level of timber theft occurring in New York forests. Further legislative attention to this issue is likely. In fact, a third provision was introduced this year with sponsorship in both houses. The bill would allow for the prospect of criminal prosecution if the values involved exceed those currently used for other Class D felonies.

"Right to Practice Forestry" - Progress on this important legislation can be characterized by early support followed by last minute cold feet. Progress continues to be made. ESFPA members have helped immensely as many discussed this issue in legislative visits during their annual lobby day in May. NYFOA members are encouraged to write and otherwise communicate with your state legislators on the need for this legislation.

The general purpose of this bill is to maintain the pursuit of some forestry practices and to permit the continuation of forestry within this state, to protect the existence and operation of existing forest ac-

tivities, and to encourage the initiation and expansion of additional forestry businesses. ▲

David Colligan, former NYFOA Director, serves NYFOA as the legislative liaison, and is a practicing Attorney in Buffalo.

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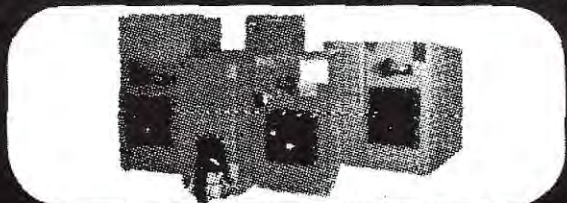
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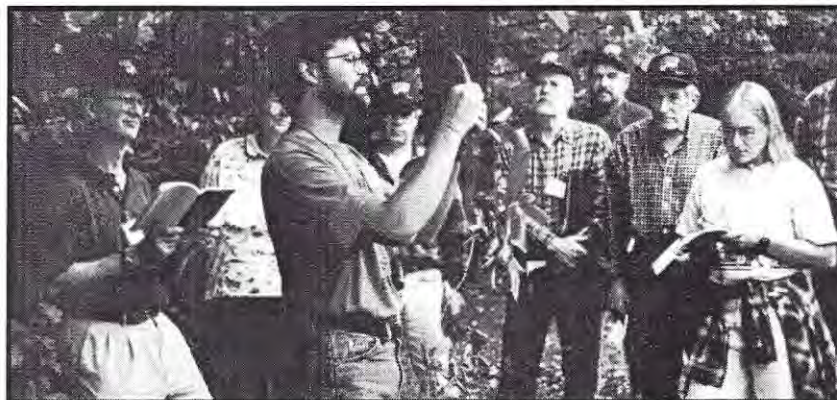
By Ella Elman

New York is a land of forests. With 62% of the state covered by forests, there are now 18.6 million acres that are forested in the state. More than 2/3 of that land is owned by approximately 500,000 non-industrial forest owners. Unfortunately, less than 4 million of those acres are purposefully managed. Stewardship of this vital resource is necessary to ensure economic and ecologically sound forest productivity generation after generation.

If you're reading this magazine, chances are that you are a forest owner who is interested in the stewardship of his/her woodlot and understands that proper forest management is essential to the future of New York's forests. Interest coupled with knowledge can lead to the necessary steps to achieve your goals.

However, before active management can begin, it is necessary to have a clear management plan in place for your woodlot. In creating such a plan, many things must be considered. Do you want to manage your forest for timber, wildlife, recreation, firewood or an agroforestry product? Would you like to create a pond, a wetland or trails? Perhaps you wish to combine a variety of the above practices and uses, and are not sure whether they are compatible with one another or where to start. Suddenly, creating a workable management plan becomes very daunting. But don't despair. The Master Forest Owner Program can help you with these and many other questions regarding your woodlot!

Since its inception in 1991, Master Forest Owner volunteers have helped a documented 700 forest owners in NY reach their woodlot management objectives by con-



David Swaciak, CCE educator for Cattaraugus County, leads a tree identification exercise at the 1997 MFO/COVERTS training.

ducting free on-site visits and providing information about sources of assistance. This year's training, which took place at Cornell University's Arnot Forest, added another 31 volunteers to our corps, bringing the total to 145 active volunteers in 44 counties across NY state. All of these volunteers are experienced land owners, as well as graduates of a 3-day training workshop at Cornell University. They are knowledgeable about sawtimber and wildlife management, forest economics and ecology. These volunteers continually increase their knowledge through workshops and educational materials, and their contacts by working with public, private and academic organizations and businesses.

What can these volunteers do for you? By means of an absolutely free, no obligation half-day visit, Master Forest Owners can tour your land with you, discuss your management objectives and suggest sources of information and assistance programs to help you meet those objectives. Furthermore, Master Forest Owners are sources of educational information about forest management and ecology, and can help you develop a management plan for your land.

A listing of Master Forest Owner volunteers is available through your Cornell Cooperative Extension County Office, Regional NYS DEC Forestry Office, or NYFOA's information service at 1-800-836-3566. For more information about the program, contact Gary Goff, Master Forest Owner Program Director at 104 Fernow Hall, Cornell University, Ithaca, NY 14853, (607) 255-2824 phone, (607) 255-2815 fax; <grg3@cornell.edu>. ▲

Ella Elman is the Master Forest Owner Program Administrative Assistant with Cornell Cooperative Extension.

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LETTERS

MANAGEMENT & TAXATION

Two articles in the most recent Forest Owner disturb me. I know you are interested in creating debate on issues through the magazine and that is working.

Norm Richards seems to feel reductions in federal cost share funding has something to do with an analysis of returns on those funding investments. I do not believe this is true and I feel foresters need to encourage forest stand improvement practices so New York can benefit from well managed forests. My evaluation of federal and state funding reductions is one of society wanting to see less government and lower taxes. Programs that politicians hear about get funded. Urban forestry funds have been increasing because urban constituencies demand them. Rural forestry funding is declining because forest owners tend to be quiet and non-demanding. Last fall you printed an article I wrote indicating a letter from one landowner is valued as 125 votes to an elected official. Funding, in my observation, has nothing to do with return on investment. Every study of the Forestry Incentives Program I've seen has indicated those practices have been very cost effective.

One reason for government support for forest improvement practices is that land tenure is getting shorter, on average, and often the landowner who may thin a woodlot may well not be the landowner who gains from that investment. We all know few forest land sales are valued on the basis of the condition of the forest at the time of sale and that most forest owners do not have a primary goal of growing high quality timber. However, for long-term retention of forested open space and support of a viable wood products industry, it is in society's interest to promote well managed forest resources.

The other article that caught my eye was by Hugh Canham on forest taxation. I guess many people are tired of hearing me say historically cheap land and low taxes has not led to good forestry. I view a property tax exemption as an incentive to encourage better stewardship of the forest resource—a private benefit for a societal gain. I favor revision of the present forest tax law to include:

1) State reimbursement to localities to offset the tax shift caused by participation. When forests are harvested the economic

benefit quickly spreads beyond the local community.

2) Broadening of eligible landowner goals and qualifying acres in line with "forest stewardship" concepts. Our experience with the Stewardship Incentives Program is that timber production increases when landowners actively manage for their goals.

3) Removal of a mandated work schedule. During the public hearing process in 1993, the overwhelming message we heard from most sectors was that the Certificate of Approval should not include a mandated work schedule. Let the owner work at their own pace, taking advantage of whatever other incentives might be available, but retain some oversight at the time of harvest to assure a societal benefit for a significant assessment reduction.

4) Retain the "approved forest management plan" requirement as the document that educates the owner to the opportunities that exist. This is the tool that gains the landowner contact with a professional resource manager.

I am concerned when the message I read from a leading forestry school seems to say, "maybe you don't need foresters." I doubt that is what either Norm or Hugh are trying to say. Landowners benefit from communicating with foresters, gaining a written forest management plan and being able to make informed decisions about their resources.

—Mike Geason, Catskill

MY FAVORITE TREE

Long overdue...My favorite forest tree is White Pine; favorite Christmas tree, Balsam Fir; and favorite "farm tree", Sugar Maple, the tree that gives food, shade and shelter (lumber.) I know that this is a bit more than asked for (What is your favorite tree, NYFO 35:3.) Also, it might be interesting to note that I've read where *L.tulipifera* was a favored tree for log cabin building in the mid-Atlantic states back before log homes of the modern kit type became popular. So we can now say log shelters are popular not poplar. (Sorry.)

—Mark Kurtis, Salamanca

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VOLUNTEER LIABILITY PROTECTION ACT-1997

By Ron Jones

Public Law 105-19: The Volunteer Protection Act of 1997, was signed into law by President Clinton on June 18, 1997. The law, eleven years in the making, provides certain protections to volunteers, nonprofit organizations and government entities in lawsuits based on the activities of volunteers. The law encourages the States to enact legislation to grant immunity from personal civil liability, under certain circumstances, to volunteers working on behalf of nonprofit organizations and government entities.

In general, the Law provides that a volunteer of a nonprofit organization or government entity will generally be relieved of liability for harm caused if: (1) the volunteer was acting within the scope of the volunteer's responsibilities; (2) the volunteer was properly licensed, certified or authorized by the state in which the harm occurred, if such authorization is required; and (3) the harm was not caused by willful or criminal misconduct, gross negligence, reckless misconduct, or conscious flagrant indifference to the rights or safety of the individual harmed by the volunteer.

Passage of this law is a significant milestone in the history of volunteer activity in our country. This is particularly true in some of the more high risk volunteer activities. Volunteers will now be able to become engaged without threat of frivolous liability action. They will now be able to volunteer because of a belief that they simply want to become locally involved, because they want to give something back to their community and because they want to help those who find themselves, regardless of the cause, in less fortunate circumstances.

Copies of the law have been sent electronically to Executive Directors.

Over the next several months a plan will be developed to help Extension Associations develop or modify a process for:

1. selecting/screening/terminating volunteers,
2. managing volunteers and
3. recognizing volunteers.

Additional information can be found in the resource, "Protecting the well-being of 4-H Youth" distributed in October 1996. For additional copies, contact Lisa Carpenter. <lisa_carpenter@cce.cornell.edu>. ▲

WHY NOT BUILD A LOG CABIN?

By Barbara Tucker

Fran Harrison, who lives in Lockport, did just that on her property which includes a beautiful woodlot, a pond - complete with a small island - and outstanding fruit trees including apricot and peach. The pond is enjoyed by ducks, geese, turtles, and fish as well as by deer and other wild animals, while butterflies and other insects enjoy the fruit trees.

A couple of years ago, Fran and a helper cut down the white pine in her woodlot and in a small clearing, built a log cabin about 24 feet square. The one-room log cabin features large windows on each side for better viewing of wildlife.

A year ago, she decided that she would move the log cabin to a spot near her pond. So she, her children and their spouses and her grandchildren gathered one weekend for a "move the cabin" event. They took down each part and marked it so it could be put back together, then in the appropriate spot did just that.

Fran, who is a member of the Niagara Frontier Chapter, invited members to come for a woodswalk to see her cabin. Although the day was cool and rainy, a hardy group came for a very interesting woodswalk and enjoyed lunch in the cabin.

Fran said that only the day before there was a family of geese, eight in all, in the pond. But overnight, the goslings disappeared - either prey of a wild animal, turtles or snakes.

It's hard to believe that Fran could build such a dream spot. She is second from the right in the accompanying photo, standing with a group of NFC members.

In June, nearly 40 people gathered for a woodswalk at Roy Emerling's property near East Aurora. There are old and young stands of trees on Roy's 240 acres, so the event was interesting to newcomers and established forest owners alike.

As an added attraction, Donald Bey of

Bey Brothers Logging in Attica, joined the group. His expertise as a buyer of stumpage and veneer added immensely to the day's walk. Also joining the NFC and its guests was **Jim Cheeseman**, newly retired state forester. The wealth of information

of these two experts kept the questions coming long after the walk was over as we were enjoying the hospitality of Roy



and his family.

Our next woodswalk in Oct. 18 when we will visit the acreage of **Bob Glidden** in northern Niagara County near Lake Ontario. Bob has just begun a management plan and will share his plans for the future. Also coming along will be **Bruce Robinson**, a consulting forester.

The NFC chapter looks forward to a Forest Fair in the spring. More information coming up.

In the meantime, members are collecting nuts this Fall - and perhaps looking over their stands of white pine with a cabin in mind. ▲

Barbara Tucker is the Newsletter Editor of NYFOA's Niagara Frontier Chapter.

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—Douglas Adams

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Commercialization and Scale Up of Willow Biomass For Renewable Energy

By Stacie Edick and Tim Volk

Imagine stands of closely spaced willow shrubs, grown like an agricultural crop, interspersed with more traditional crops across the landscape. The vision of the **Salix Consortium** over the next five years is to make this image a reality. The Consortium's goal is to commercialize successfully willow biomass crops—a renewable, locally produced and environmentally friendly fuel—in New York and the surrounding region. Participants at the recent NYFOA annual fall meeting had a chance to hear about and see first hand some of the work that is being done to this end.

Research on the biology and production system for short rotation intensive culture (SRIC) willow and poplar has been conducted at the SUNY College of Environmental Science and Forestry (SUNY ESF) since 1983. A series of trials have been established across New York from St. Lawrence to Niagara counties. In the past year trials in Vermont and Wisconsin were also planted. There are plans to include trials in Pennsylvania next year as well. There are now over 30 organizations working together under the umbrella of the Salix Consortium to further the development of woody biomass crops (see *FOREST OWNER* Nov-Dec 96). An initial market for this material is developing as two major utilities in New York—Niagara Mohawk Power Corporation (NMPC) and New York State Electric and Gas (NYSEG)—retrofit pulverized coal boilers in central and western New York to co-fire wood biomass with coal.

The goal of the Salix Consortium—the successful commercialization of woody biomass crops—is at a critical junction in New York and the surrounding region. The two ends of the spectrum, the research base for biomass production and the market for it, are poised to come together and make SRIC willow a commercially viable system. However, an essential link between these two groups must be made—the involvement of a large number of landowners and growers for large-scale production of SRIC woody crops.

The Salix Consortium recently received funding support from the US Departments of Energy and Agriculture to commercial-

ize the crop over the next five years. One of the goals of this period is to establish up to 1000 acres of SRIC willow in two areas of New York. About half of the acreage will be in each of the areas around the NMPC power plant in Dunkirk and NYSEG's Greenidge plant in Dresden.

The acreage that is planted in each area will fall into one of three categories. The first category is land owned by the utilities or other partners that is suitable for willow production. The second category is land that will be leased by the Consortium. These leases will be negotiated with each individual landowner. Lease prices will depend on soil quality, accessibility and distance from the plant. On these parcels the Consortium will do all of the work and own the first harvest. At the end of the five year commercialization period the landowner has the option of keeping the crop (willow regrows after harvest) or having it removed by the Consortium. The varieties of willow that are being used for commercial production do not spread by suckers and have a shallow root system so removal is relatively easy and very effective.

The last category is land where the Consortium will contract with experienced farmers to grow willow on their land with technical assistance provided by SUNY ESF. The Consortium will provide willow cuttings, planting and harvesting machinery, and transportation. The grower will be responsible for site preparation, herbicide application, first winter cutback to stimulate multiple stem growth, and fertilization. The first harvest will be owned by the grower who will contract with either a utility partner or the Consortium to sell the biomass. At the end of five years the grower also has the option of keeping the crop or having it removed by the Consortium.

South Central New York Resource Conservation and Development (SoCNY RC&D), with the help of SUNY ESF and other partners has developed a grower proposal that will pay the growers a flat fee which is designed to cover establishment costs. An additional Pioneer Fee is included as an incentive for the entrepreneurial farmers who become involved in the initial five year commercialization phase.

Progress is already being made to achieve the goal of establishing 1000 acres over the next five years. The Salix Consortium has leased 100 acres around NMPC's Dunkirk plant from three landowners and 100 acres around NYSEG's Greenidge plant from one landowner. The Dunkirk acreage is currently being plowed and disked in preparation for planting in spring of 1998. The 100 acres in the Greenidge area will be prepared in the summer of 1998 and will be planted with a cover crop. It will be ready for planting in spring of 1999.

The Salix Consortium is currently looking for additional acreage to lease, and growers to participate in the production of willow biomass crops. The project needs experienced farmers who are enthusiastic about the project and willing to keep detailed records so that they can share new information with the Consortium and other growers. They must enjoy working with a new crop, be in the habit of seeking information from a variety of sources and be willing to share information with other farmers. Willow growers need to be concerned about environmental issues and willing to adapt farming practices to increase production, utilize integrated pest management, reduce negative environmental impacts, and consider wildlife habitat and esthetic values. Growers who own farm machinery and have herbicide application certification will be particularly helpful, but this is not required.

SoCNY RC&D will be the initial contact point for landowners and growers. For more information on how to participate in the Biomass Project, please contact Stacie Edick, Biomass Field Representative, SoCNY RC&D, 5566 County Road 32, Norwich, NY 13815. Phone 607-334-4715 or Email at soconyrcd@norwich.net subject "Biomass" or "Stacie."

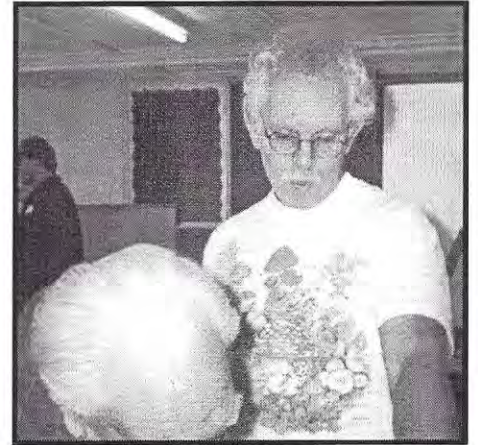
Next Issue: Willow Biomass—Equipment Development, Forming a Cooperative, Alternative Markets, Integration of TSI Residues and More! ▲

Stacie Edick is the Biomass Field Representative working out of SoCNY RC&D. Timothy Volk is Biomass Program Director at SUNY-ESF.

NYFOA'S FALL MEETING



Above: Tim Volk discussing Biomass particulars with Larry Snyder and Below: Stacie Edick preparing Willow Biomass presentation (see facing page.)



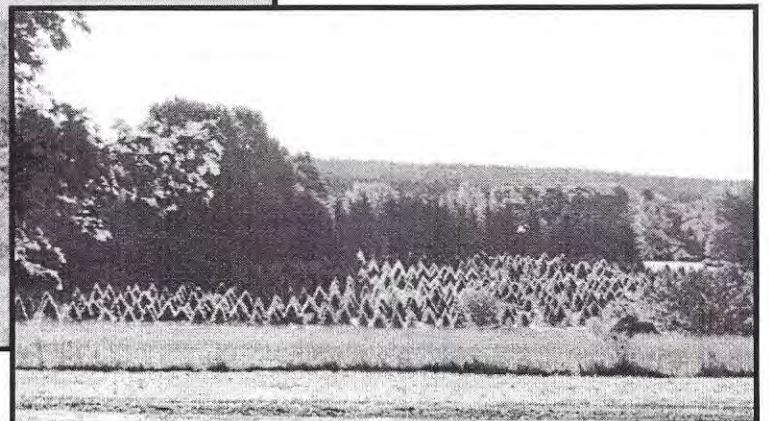
Above: Bob Beyfus (r) pointing out details of ginseng exhibit to Alec Proskine.

Below: Bob Beyfus with Ginseng Plant.



Above: Tully-Cortland fog-filled plateau as seen from Heiberg elevation.

Below: Heiberg Christmas tree plantation.



MANAGING A WOODLOT TIMBER SALE

By Don Schaufler and Duane Chapman

CHAPMAN: It started with Gary Goff, Extension Associate with Cornell. He made an informal cruise of the North 40 acres, and suggested that a professional forester be brought in. At that point, the logger had offered \$8,000 and a contract to sign. He wanted access and the staging area to be near a major county road, a mile from our home. This was not visible to us, and was frustrating because it would create later opportunities for unauthorized access to all of our 170 acres of old-growth woods.

However, because this was an emergency sale, and the amount appeared small, I had been prepared to go ahead and sign. It wasn't clear that a professional forester would add any significant amount to the selling price.

Nevertheless, thinking over Goff's suggestion, I contacted Don Schaufler, a consulting forester. In two hours he gained a general picture of the woodlot. The goals of the sale that we discussed were 1) maximum financial return, 2) opening up good young trees for future growth, 3) cleaning out the beech for firewood because of the rapidly spreading beech bark disease, 4) siting the logging roads to minimize erosion and stream sedimentation, and 5) siting the landing area and roads to minimize unauthorized access.

Another concern here with this North 40 is wildlife. Before the harvesting, it had been home to hermit thrushes, bobcat, grouse, and great horned owl. It had been frequented by foxes, coyotes, pileated woodpeckers, goshawk, and an occasional bear. How would these wildlife values be affected by a timber harvest?

SCHAUFLE, PLANNING THE HARVEST: A forester should be able to educate the landowner by walking them through the timber harvest plan and help them make appropriate decisions at each point in the process which fits the owners' objectives. The forester should present the options which make it possible to achieve the desired goals — the choices should be the owners' as they are the ones to live with the consequences of the action. A forester should understand local customs in logging operations and how they may interact positively or negatively with the landowners' desired goals.

The goal on this woodlot is to manage 40 acres for maximum timber production.

This means shifting species composition toward those traditionally higher value species: red oak, sugar maple, black cherry, and to a lesser degree (when higher value species of acceptable form are unavailable) white ash, red maple, white pine, and as a last resort hemlock, and birch (black and yellow). Some beech and aspen may be retained for biodiversity as they currently have virtually no timber value.

One guideline in this case is to remove trees that are 18 to 22 inches DBH (diameter at breast height) and in good health (sound, straight). At the same time the cut should open the crowns up of others in the valuable categories by cutting trees of lesser value — this assumes that these individuals will probably respond by growing at a greater rate and not windthrow, or grow many new little side branches.

All this also assumes there are enough trees of future timber quality on the 40 acres to encourage trees with diameters from 6/8 inches to 14/16 inches. It's usually not a good idea to sell trees smaller than 18/20 inches because between 12 and 20 inches they are increasing in value at a fairly rapid rate. They are not only increasing in volume but also quality which is very important for hardwoods like red oak, sugar maple, and black cherry. If they are overcrowded some smaller trees should be cut out to release the crowns of the healthiest, most valuable ones.

In the Chapman North Forty woodlot I marked almost all the good quality timber trees 18 inches in diameter and larger, mostly red oak. I also marked virtually all the beech, much of it already partially rotten. The rot in the dead parts of the trees was initiated by beech bark disease, also referred to as beech scale disease, transmitted by a small scale insect. I also marked many low quality red maples, the majority eight to twelve inches in diameter, while leaving some of the straighter, taller ones where no other sawtimber species of good form existed.

The objective at this point is to leave the forty acres with good quality timber trees: straight, tall, clear stems of valuable species spaced out with ten to twenty feet between the edges of crowns. This allows the trees of choice to grow as rapidly as possible for the next ten to twenty years when a future evaluation of volume and value will be made. When trees are grow-

ing vigorously to begin with, not terribly overcrowded, cutting some of them allows the released trees to continue increasing in size at a more rapid rate. This increase in vigor also allows the trees better to survive stresses that occur over the trees' lifetime. The stress factors include such things as periodic drought, insect defoliations, wind and ice storms, and harvesting equipment damage in the woodlot.

Because there were many good quality sawtimber trees in the woodlot which would respond to releasing their crowns with an increased growth rate, no regeneration/reproduction goal was included at this time. It should be a component of the plan prior to the next cutting.

The results of the marking tally for harvest were 108 Red Oak (20,210 board feet), 17 Hemlocks (2,403 board feet), and 51 trees of White Ash, Red Maple, White Pine, and Sugar Maple (5,319 board feet).

While selecting and marking good timber trees for the sale, I also marked 876 trees for firewood. The estimated volume was 200 cords in beech, red (soft) maple, some ash, birch, and others. By removing these trees, other higher quality trees were given more room to grow.

It is interesting to compare the differences in volume and value for the different species. The 176 sawtimber trees were worth \$15,220, or \$141 per tree. In contrast, the lowgrade trees brought \$2.30 each.

When marking trees for cutting, local custom is to use a horizontal paint stripe to indicate a sawtimber tree, while a vertical stripe marks a firewood or lowgrade tree. All marked trees also have a paint spot placed at ground level to allow compliance checking after the trees have been cut.

SCHAUFLE, NEGOTIATING THE CONTRACT: The logger had given Chapman a written list of \$/MBF (dollars per thousand board feet) stumpage prices he was willing to pay for the timber. After I marked the trees of value and the lowgrade trees, I then used the logger's prices, which were very acceptable, to derive the value of the timber and firewood marked. My estimate was \$17,220. I talked with him at length on the phone and eventually he finally agreed to pay my estimate of the value of the marked wood. This was quite a good price for the time and place.

Other items of negotiation included

placement and size of the landing, placement of main skid roads, stream crossing location, intensity of cleanup (how smooth the skid roads and landing will be), duration of the contract, method of payment, number and location of water bars, minimum size of top wood left, and many others.

This situation was fairly typical, because a logger will usually have some ideas which may not be optimal from the landowner's perspective. It is crucial to recognize that the forest owner is in the driver's seat when selling timber. The forester can understand the owner's wishes, and translate them into workable actions and positive results on the ground.

CHAPMAN, MAKING A DECISION: I was impressed by several aspects of the proposed contract and the boundary and tree marking that had been done. **First**, the 40 acres were clearly designated with surveyor's tape so that there would be no basis for the 40 acres to be stretched into 45 or so. **Second**, the forester (Schaufler) secured the logger's agreement to a new location for the access road and the staging area near our home. This eliminated the uncontrolled access problem which might otherwise have developed. **Third**, the sale price that the forester negotiated was more than twice the logger's offer.

I considered going to auction, but, since the logger had an excellent reputation for following an agreement and doing good clean-up afterwards, I stayed with him in spite of the price difference between his offer to me and his discussion with the forester. Payment to the owner for the harvest was paid with a cashier's check before work began.

We included a bond in the contract to be released after satisfactory clean-up. The logger provided an insurance certificate to cover him and his employees.

SCHAUFLE, SUPERVISING THE CUTTING: It is best if the forester is present when cutting begins. In this locale, it is usually at the same time the landings and skid roads are put in with a bulldozer. The forester's presence at this important point allows any questions to be addressed and resolved. After the roads and landings were bulldozed, periodic unannounced visits to the site occurred at least once a week while harvesting was in progress. As with any harvesting job, I checked property and sale boundaries during and after cutting to avoid any problems with neighboring landowners. This can be especially important when

marked trees are close enough for the tops to fall across the line if felled improperly.

Cleanup of the job to the satisfaction of all parties was thoroughly discussed prior to initiation of the harvesting. Loggers want to spend a minimum of time and expense smoothing ruts, piling debris, and building water bars. But as is usually the case, the logger did an adequate job of it when pressed.

CHAPMAN, CONCLUSION: My only problem with the whole job is the clean-up. The contract called for tractor-quality grading, but this was not done.- In fact, a small stream was diverted into the main logging road in a boggy section, making it impassable for normal equipment. This should have been caught: the idea that "it will dry out" doesn't work for year-round streams!

However, this is my only reservation about the job. On the whole I am very positive. My experience has made me a firm believer in working with a professional forester. The results are immediately evident: the access road is now visible to us and under our control instead of a mile away on another road. Soil erosion and stream sedimentation is minimal. Because of the careful planning and marking by the forester, it looks like we have the potential for another harvest in 15-20 years.

And most important, the revenue from the sale is twice the original offer. In fact, if landowners could double their revenue per acre, the acreage they need to harvest is reduced by half.

In a recent article in the Magazine, Peter Smallidge explains how to select a forester, and the advantages that a landowner can expect from working with a professional forester. I agree. My advice for a sale: talk to a professional forester!

SCHAUFLE, CONCLUSION: Overall, I am quite pleased with the whole timber sale. The landowner was paid a good price for his timber, a professional felling and skidding job was done, and many lowgrade trees were removed or girdled by the logger. These activities resulted in very little residual stand damage, much less than normal and in line with what a landowner should expect. The crowns of the remaining trees now have room to expand as a result of the cutting. If market conditions permit, a light thinning for firewood should be undertaken in 5 to 10 years as the canopy closes in again. A few years after that, another timber harvest should include plans for tree regeneration. In the meantime, the

owner has a beautiful, productive woodlot to observe and enjoy, knowing that he is a responsible steward of the land. ▲

Don Schaufler is a professional forester with more than 20 years experience in logging, timber purchasing, and forest management. He is the manager of Cornell's Arnot Forest, and does some consulting on his own time for landowners. Duane Chapman is a professor of environmental economics at Cornell and woodlot owner.

1997

Maple Production

By Lewis J. Staats, Cornell Cooperative Extension, Cornell Maple Program

According to the New York Agricultural Statistics Service report released in mid-June, New York's maple syrup production for 1997 is estimated at 269,000 gallons. This is down 22 percent from the 343,000 gallon crop of 1996, which was a very favorable season for the state's maple producers.

Although there was a 16 percent increase in the number of taps made from the previous year, unfavorable weather conditions experienced throughout the state during this spring reduced the potential for sap flow. The number of days characterized with below freezing nights followed by warm days required for the maple tree to flow sap were limited.

Another explanation for variation in maple sap production between years can also be presented from sap flow data from Cornell's Uihlein Sugar Maple Research Field Station at Lake Placid in northern New York. Records at the maple research facility indicated measurable sap flow occurred on 29 days during the 1996 season while sap flowed on only 20 days during the 1997 production season.

Producers reported, however, that syrup quality during the 1997 season was very good. Producers in many regions reported that sap sugar concentration was above average which also contributes to greater processing efficiency. *This brief via Email Cornell Extension Newsletters. David Poland, Editor, 607-255-9422, e-mail: dap6@cornell.edu.*

A BIT OF IRISH FORESTRY

By Henry S. Kernan

*Cad a dheánfaimid feasta gan adhmaid?
Tá deireadh na gcoillte ár lar.*
What shall we do without timber?
The end of our forest is nigh.

That 17th century foreboding was grounded in what was underway in the Ireland of the time. The English had arrived in force, with a political order certain to destroy a way of life that presupposed sparse, mobile populations of cattle herders and much of the land in natural growth. The forest was bound to recede before demands for oak ship-timbers and staves, and for wood that fueled the metal- and glass-making.

As tilling fields replaced herding livestock, the country people built fixed dwellings of stone and earth, and heated them with peat. The Irish landscape was changing, irreversibly and forever.

By 1900 the native Irish forest was gone. Only a few run-down oak woodlands remained, and some isolated patches of upland birch. Tree cover was one per cent of the area, the lowest in Europe, even lower than Iceland's.

Forests of oak, ash, elm and birch were there with the first neolithic arrivals some ten centuries ago. Lesser components were hazel, rowan, yew and haw. The one native pine, *Pinus sylvestris*, did not survive the iron-wielding Celts, but the forests did. Then, wealth and prestige were with livestock, as were the diets of meat, cheese and milk. While the herders moved about, their tribal chiefs kept their numbers in check with quarrels and killings over the ownership of grazing rights and cattle. At their leisure the chiefs delighted in chess, in racing horses and in hearing long boastful epic songs about the doings of their mighty ancestors. Their epic, the *Tain Bo Cualnge* (the Cattle Raid of Cooly), describes the fighting over a monstrous bull capable of servicing 500 cows.

Their way of life did not outlast the English conquest, nor did their forest. Trees are still part of the landscape, with their part in the folklore of leprechauns, pots of gold and the sciog (hawthorn) bush. But of a broad-leaved forest, high, dense and pervasive, Irish history has left just the dimmest memory.

Consequently Irish forestry is like that of no other country. There are no old-growth forests to preserve; no assart and tubery to suppress (peasant rights inherited from feudal times. Assart—the right to clear & cultivate; tubery—the right to harvest peat); no woodland to convert to tillage. Irish forestry is, first and foremost, afforestation of land submarginal for agriculture, with exotic conifers planted in rectangular blocks. At age 40, they are cut clear and replanted. The 60,000 acres of new



Author (r) and his Irish cousin Edward Masterson, on ancestral lands of the Nedd, Doogary, County Cavan, Eire.

forest each year give Ireland the highest rate, proportionately, of any country in the world. Ireland is now eight per cent forested and an exporter of wood products to western Europe and elsewhere.

The program began after World War II, cautiously, as a relief measure for rural poverty and underemployment. Some of the best agricultural land in Europe is in Ireland, and some of the worst from which families struggle to extract a livelihood.

Ireland has several million acres of highly acid and poorly drained boglands, hardly an attractive target for trees. But Irish foresters were in for some surprises. Our Sitka spruce and lodgepole pine grow there at extraordinary rates, three times those of spruce in Sweden and five times those of natural hardwood stands in New York. Moreover, they do so almost without problems of pests, fire, wind, drought or cold.

The results have been so good, both financially and socially, that the state owned forestry company, Coillte Teoranta, operates on a commercial basis, and profitably.

"It is a crime to plant trees on land that can grow food."

The company is now Ireland's largest land-owner, with 423,000 hectares of forest land out of the 570,000 hectare total. Coillte Teoranta is also the dominant supplier of industrial timber, 2.1 million cubic meters in 1955. This public ownership on land contrasts with Europe's private ownership which totals well over half.

Nevertheless, the state's preponderance is becoming less. Two decades ago, private planting was virtually nonexistent. Now it is three-quarters of the annual total and rising. Grants and premium schemes are driving the change. They cover the entire cost of planting and care; even the temporary opportunity costs of using cropland and pasture for trees.

Cultural barriers to afforestation are more of a problem than financial ones, especially in Ireland where folk memories are long and Oliver Cromwell is an ogre after three and a half centuries. For example, over barmbrach and tea with my now distant Irish cousins, the rejoinder to my interest in forestry was, "It is a crime to plant trees on land that can grow food." Evidently memories of the famines of the 1840's are still strong.

Ireland is not about to run out of food, having been an exporter thereof for centuries, even during the famine years! Now Coillte Teoranta and farmers are acquiring and contracting for land of broadleaf quality, not just the unwanted leftovers.

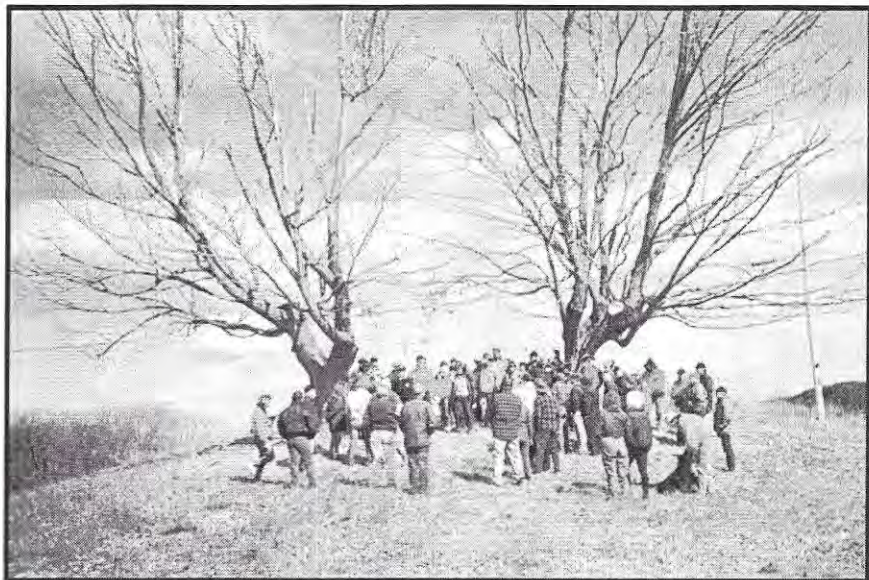
The change is welcome. Many people dislike the intrusion of monotonous rectangular blocks of exotic conifers upon the beloved auld sod. Another typically Irish concern is over the chemical pollutants which coniferous foliage rakes from the atmosphere and deposits in the soil. If they reach inland and coastal waters in quantities toxic to fish, the outcry would be loud and well taken.

In response Irish forestry concerns now include far more than exotic conifers; fish and wildlife, landscape, recreation, the preservation of archeological sites, rural welfare and the wood amenities that all of us know and share. ▲

Henry Kernan is a consulting forester in World Forestry, a Master Forest Owner Volunteer and a regular contributor to the NY FOREST OWNER.

NOTE CARD IMAGES

The following are reduced black & white images of the 4" x 6" color images to be imprinted on a set of eight note cards offered by NYFOA for \$6 each (Available in early December from Debbie Gill, 800/836-3566 or from your local chapter.)



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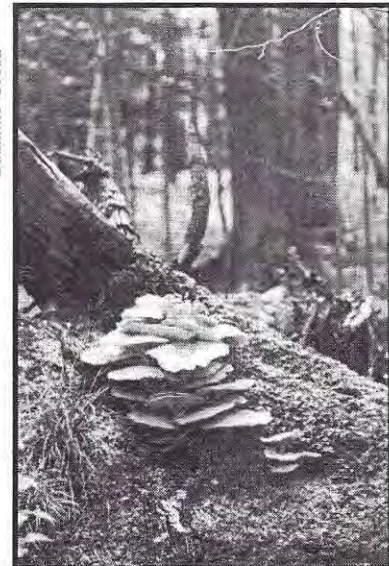


Rita Hammond



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GYPSY MOTH—DOWN AND OUT?

By Douglas C. Allen

Many forest owners have commented on the rarity of gypsy moth damage in 1996 and 1997 compared to previous years. Indeed, the U.S. Forest Service reported defoliation in 1996 was only approximately 200,000 acres spread over 12 northeastern states. This amounted to 15% of the 1.4 million acres recorded for 1995 and the smallest area affected since 1968! What delivered this knockout punch? Will the gypsy moth take a “ten count” or get back on its feet? Scientists have been able to shed some light on the first question, but are uncertain about future events.

The Insect

Gypsy moth probably has garnered more notice, frustration, research dollars, and environmental concerns than any other forest or urban tree pest in the United States. Because of its broad host range, large size, adaptability to a variety of habitats, and frequent excessive abundance, outbreaks of this defoliator detract from a wide range of economic and amenity values. The insect's presence and the damage it causes can significantly disrupt people's lives in many ways.

It was introduced from France around 1868, but it did not gain public notice until 1889. After this it became a household topic in an increasingly large geographic area. Today it is permanently established in 16 states from New England west to the Lake States and as far south as Virginia, and in three Canadian provinces.

Even when populations are low, the conspicuous zig zag flight of the very active, brown male moths is a common sight in late July and early August in New York. Similarly, the newly laid, buff egg masses (Fig. 1) are easy to spot in late summer, even when populations are low and masses are widely scattered on tree bark and other substrates.

The Famous Fungus

Scientists attribute the current decline in gypsy moth to a fungus, *Entomophaga maimaiga* (ento-mow-faaga my-my-ga). The first part of its Latin name means “insect eater” and the second part is the common name given to gypsy moth in Japan. This fungus was released in the United States at several sites near Boston in 1910

northeastern states in 1989. One reason why the disease may have escaped detection from 1911 to 1989 is the fact that cadavers killed by the fungus closely resemble those succumbing to a common viral disease known as NPV.

Gypsy moth NPV (a NucleoPolyhedrosis Virus; i.e., the virus replicates in the nucleus of a cell and is shaped like a polyhedron) is associated with this defoliator throughout the world. The pathogen causes a condition referred to as “wilt disease” in the U. S., “caterpillar cholera” in parts of Europe and “treetop disease” in Germany. Virus probably was imported with the original introduction, but its biology was not understood until 1947. Because it was associated frequently with the collapse of gypsy moth populations, and because of this appeared to offer potential as a biological control, research with it was greatly intensified during the 1960s and 1970s.

Determining Cause of Death

To the novice, it is difficult to establish whether the cadaver of a gypsy moth caterpillar was killed by *E. maimaiga* or NPV. The U.S. Forest Service in conjunction with **Dr. Ann Hajek**, an insect pathologist at Cornell University, published two informational leaflets in the mid-1990s (USDA Forest Service, NA-PR-02-92 and NA-PR-01-94) which provide verbal descriptions and excellent color photos that help distinguish gypsy moth caterpillars killed by these two disease-causing organisms. Recognizing if disease is present and being able to identify the causal agent may be important when a land owner who is

threatened with defoliation must decide whether to initiate control activities or let nature take its course. A key element in making this decision is understanding that the fungus apparently is capable of causing disease and is transmitted readily in sparse as well as outbreak populations of gypsy moth. Epizootics of virus, on the other hand, are limited to outbreak condi

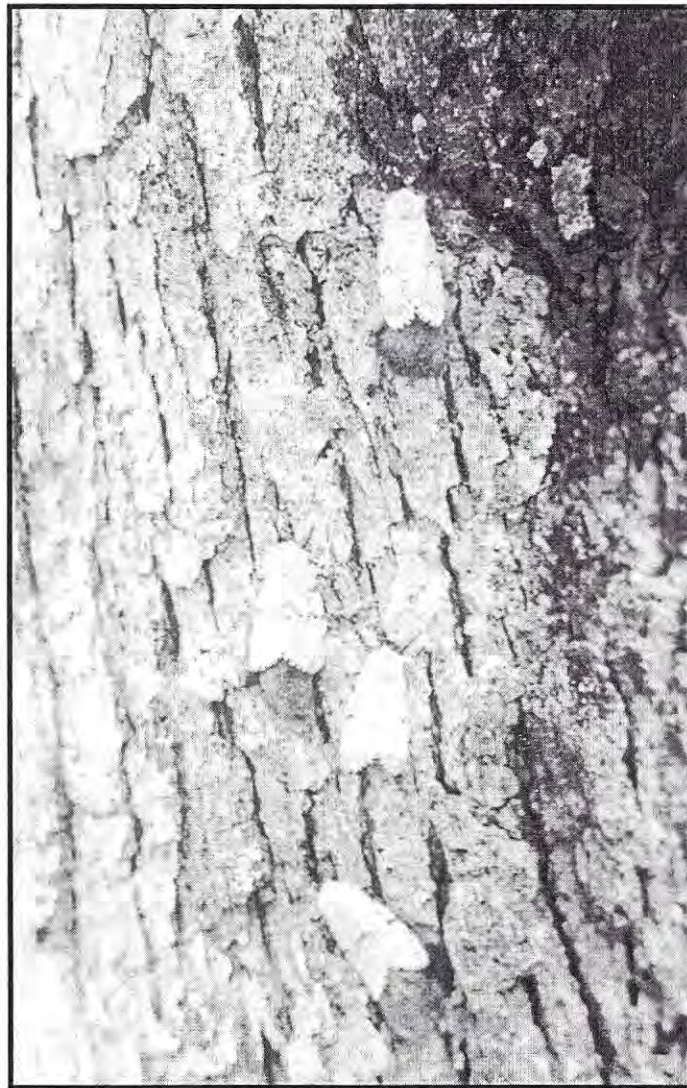
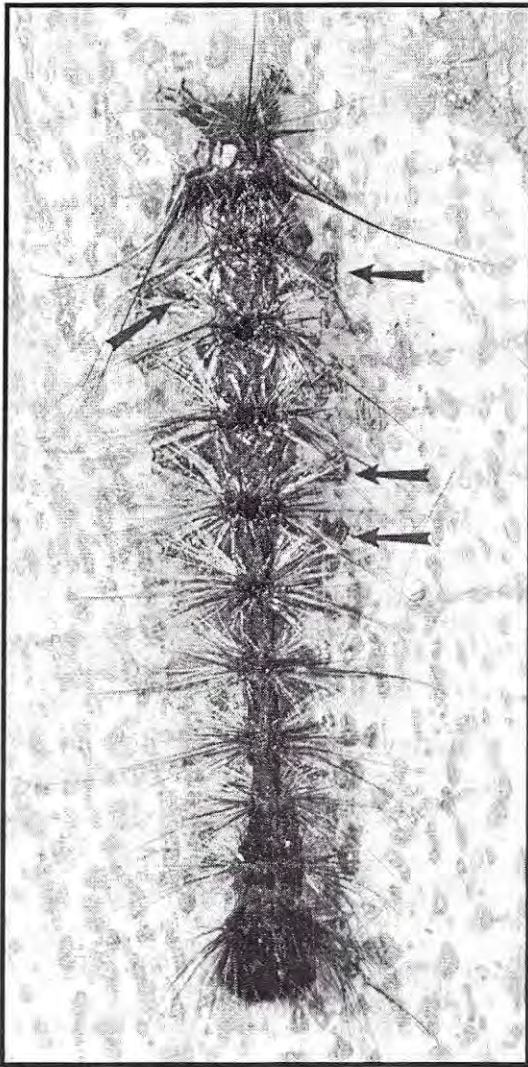
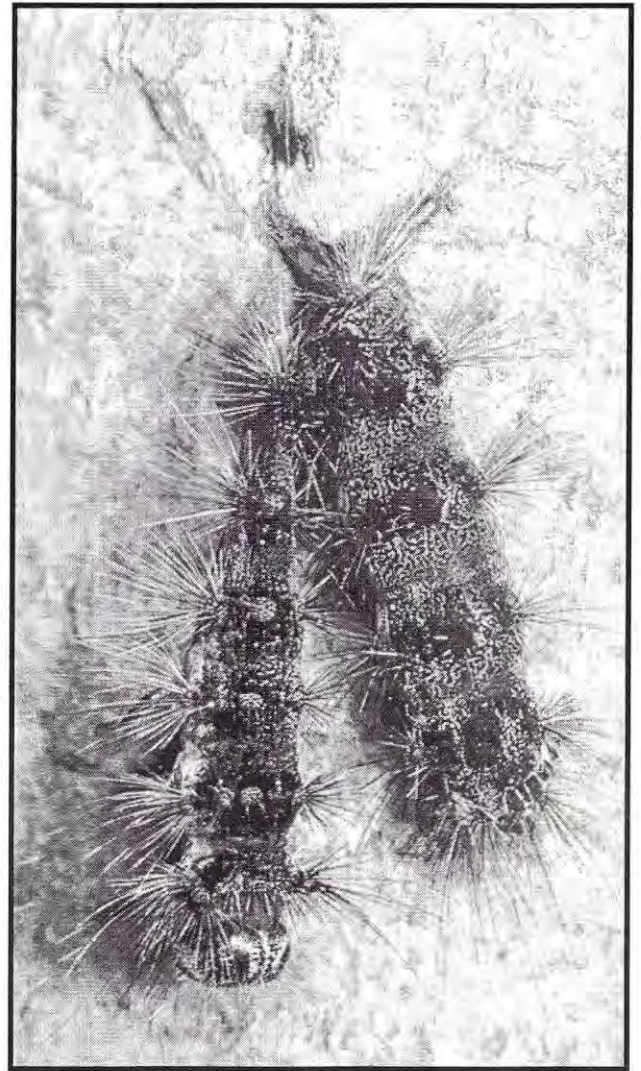


Fig. 1. Female gypsy moths and their egg masses.

and 1911 and again at two additional sites in 1985 (one of which was Allegany State Park). These attempts at biological control apparently failed, because on none of these occasions was transmission detected in resident populations of the defoliator. The first epizootics (epee-zoo-augh-ticks, a term referring to the outbreak of a disease in an insect population) were noted in seven



Left.
Fig. 2. Gypsy moth caterpillar killed by *E. maimaiga*. Arrows indicate projecting legs.



Right.
Fig. 3. Gypsy moth caterpillar killed by NPV.

tions. The most effective control agent is one that decimates the population before damage occurs; that is, prior to outbreak conditions. When the fungus is detected in a population, it is very unlikely that additional control measures will be needed.

Caterpillars killed by *E. maimaiga* are elongate and attached to a substrate (e.g., bark) vertically with head down. The body withers and dries, and legs on the back two-thirds of the cadaver project at 90 deg. to the body (Fig. 2).

When NPV is responsible for death, the caterpillar droops or "wilts" and takes the shape of an inverted V (Fig. 3). The body is brittle and body contents are liquified. Eventually the body shrivels and body liquids accumulate underneath on the substrate to which the caterpillar is attached.

Have We Seen The End of Gypsy Moth Outbreaks?

Not likely! Scientists concede that *E. maimaiga* has been responsible for the general decline in gypsy moth numbers and

damage in recent years, but they do not know if this level of effectiveness will continue. Populations of microorganisms, like those of insects, are highly variable and unpredictable.

The dramatic appearance of the fungus during the 1990s may be associated with unusually moist conditions that prevailed during May and early June. Fungi are more sensitive to moisture conditions than most other microorganisms that cause insect diseases. According to Dr. Hajek, however, regional weather patterns can not be used to predict the likelihood of disease. Her comparison of weather records and timing of previous population declines suggests that some spread and transmission occurs even when regional conditions are relatively dry. This probably reflects the fact that even during relatively dry years or years with normal rainfall, there are always microhabitats with enough moisture to favor the fungus.

Several hypotheses have been proposed to explain the current effectiveness of this dis-

ease. The two favored by Dr. Hajek at this time are (1) there has been an increase in the aggressiveness of a strain that was introduced years ago or, (2) in recent years a new strain was accidentally introduced.

Whatever the reason, we should not become too complacent about gypsy moth. It remains important to monitor and survey for this pest. In my view it is very unlikely that we have stumbled on that infamous "silver bullet". Fungi are very sensitive to vagaries of the weather and, do not forget, insects are very adaptable. This, in general, is the main reason these animals have been so successful during the course of their evolution.

I thank Dr. Ann Hajek for providing the photographs used in Figs. 2 and 3. ▲

This is the 35th in the series of articles contributed by Dr. Allen, Professor of Entomology at SUNY-ESF. Reprints of this and the complete series are available from NYFOA, phone 1-800-836-3566.

HOLY HERBS, FLOWERS AND FATE

By Jane Sorensen Lord, PhD, OTR, ND

This fall, my herb crop was meager thanks to deer. They certainly have eclectic taste!

I made some kitchen tinctures with garden herbs. You put basil or thyme or marjoram into 100 proof alcohol, shake it frequently for a few weeks, and use it by drops in cooking. The alcohol evaporates with heat and the food tastes like you used fresh herbs.

The tinctures even look good if you put them in attractive bottles because the alcohol turns bright green!

My passionflower bloomed this year!. I put one out every spring that I started from a leaf cutting from the one growing outside the previous summer. It does fine inside over winter. The plant is a vigorous vine which needs a small trellis indoors. The leaves make a relaxing, tranquilizing tea. Doesn't taste too bad, either.

I planted it near a fence post outside and it grew tendrils a few feet long. In early September it made buds that grew and grew. I told Gordon to watch for flowers and to cut and float them if I wasn't there. But late afternoon, in mid-September he came into my office.

"The passionflower is blooming! It's incredible!

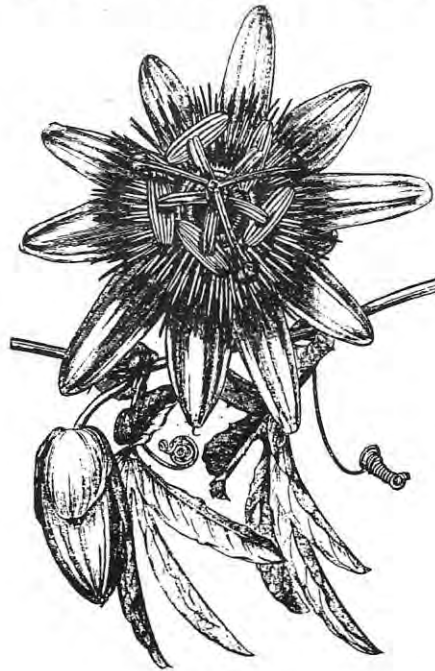
I have seen pictures of passionflower before, but in real life it is even more spectacular. The light green bud opens to about three inches in diameter and frames a blue corona. Five stamens with sepals are supported 3/4 of inch above the center of the corona, and about 1/4 of an inch above them is a three pronged pistil (sort of like an airplane propeller).

The mythic symbolism of the passion flower is as good as the legend of Chiron, Achilles and the yarrow that I told you about before.

Passionflower symbolizes Christianity and the Crucifixion of Jesus. Pretty heady stuff! And as you analyze the plant and flower you understand.

The lobulate leaves look like hands—and the reaching, curling, clinging tendrils are the thongs they used to bind Christ and the cords used to whip him. The five stamens represent the wounds inflicted on Christ and the corona, his crown of thorns.

The tripartite pistil stands for the Father, Son, and Holy Spirit. And when you look,



Passionflower

it's its all there in one flower, in 3-dimension and color!

Supposedly, passionflower was discovered in Latin America by Jesuit priests. They identified its symbols, and believed that finding the flower was a symbol from God: that their work and the European colonization was ordained.

I cut the first two flowers and am pressing them in my dictionary. I hope the third one blooms and turns to fruit before frost. The maypop, as the fruit is called, is supposed to taste great. We don't get them imported into our market because they are too perishable.

It intrigues my fancy that blooming at the same time as passionflower is costmary AKA Bible plant.

Costmary is a type of mint with an invigorating, pleasant smell. It never bloomed before this summer, either.

The flowers are tiny greenish white clusters, that almost look like they aren't blooming, but have an odor you can smell walking by.

The plant was a favorite in Victorian days when sermons at church lasted hours. People would pick and dry a few leaves in their bibles. When they were about to fall asleep from the tedium of the preacher's drone, they would crush and smell a bit of the dried leaf and perk up. Personally, I think crushed rosemary makes you more alert, but I guess the stronger odor might make someone in church who was antsy, more so!

I extract the costmary flowers in oil, usually jojoba or avocado. Added to facial creams and oils, it gives a little pep to the mornings.

So, in spite of deer and dry weather damage, my gardening efforts gave me great satisfaction at the close of the season.

Do you think, maybe, that having passionflower and Bible plant both bloom for me for the first time in the same year portends good luck? ▲

Dr. Jane, a regular contributor, is a Master Forest Owner and Certified Tree Farmer. She has a private consulting practice in Occupational Therapy and Naturopathic Medicine and teaches on the Faculty of Health at Indianapolis University.

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