# The New York Forest Owner

A Publication of The New York Forest Owners Association

July/August 2000





FOUNDED 1963

#### THE NEW YORK FOREST OWNERS ASSOCIATION

Volume 38, Number 4

#### Officers & Directors

Ronald Pedersen, President 22 Vandenburg Lane, Latham, NY 12110; (518) 785-6061

Jim Minor, Vice President 22 Bryn Mawr Road Rochester, NY 14624; (716) 247-7069

Robert Sykes, Secretary 4786 Foster Road Elbridge, NY 13060; (315) 673-3691

Don Wagner, Treasurer 5330 Graham Road, Utica, NY 13502; (315) 733-7391

Deborah Gill, Administrative Secretary Fairport, NY 14450; (716) 377-6060

Jill Cornell, Johnsonville, (518) 753-4336 Nick Polce, Remsen, (315) 831-5301 Dave Swaciak, Franklinville, (716) 676-2349 Robert Sykes, Elbridge, (315) 673-3691

Harry Dieter, Honeove Falls, (716) 533-2085 Mike Greason, Catskill, (518) 943-9230 Jack Hamilton, Wayland, (716) 728-5769 Rolf Wentorf, Johnsonville, (518) 753-0228

Hugh Canham, N. Syracuse, (315) 457-4972 Roy Esiason, Granville, (518) 642-2351 Jerry Michael, Binghamton, (607) 648-2941 Ronald Pedersen, Latham, (518) 785-6061

#### Chapter-Designated Directors

Charlie Mowatt, Allegheny Foothills; (716) 676-3617 OPEN, Cayuga; Call NYFOA for information Joan & Hans Kappel, Capital District; (518) 861-8753 John Druke, Central New York: (315) 656-2313 Gene McCardle, Lower Hudson; (914) 945-0504 Pat Ward, Northern Adirondack; (315) 268-0902 Don Fraser, Niagara Frontier; (716) 773-7011 Peter Gregory, SE Adirondack; (518) 399-1812 Larry Lepak, Southern Tier; (607) 656-8504 Peter Smallidge, Southern Finger Lakes; (607) 255-4696 Jim Minor, Western Finger Lakes; (716) 247-7069

The New York Woodland Stewards, Inc. (NYWS) is a 501(c)3 foundation of NYFOA and tax deductible donations to this organization will advance NYFOA's educational mission.

All rights reserved. Contents may not be reproduced without prior written permission from the publisher. NYFOA does not necessarily support or approve procedures, products, or opinions presented by authors or advertisers.

© 2000 New York Forest Owners Association

## In This Issue . . .

From the President Ron Pedersen	. 3
In The Mail	. 4
EPA WITHDRAWS SILVICULTURE PROVISIONS ROBERT MALMSHEIMER & MICHAEL GOERGEN	. 6
News & Notes	. 7
STAND BY YOUR STREAM REBECCA SCHNEIDER	. 8
ALONG THE FINGER LAKES TRAIL IRENE SZABO	. 10
Woodlot Calendar	. 12
NYFOA 2000 FALL CONFERENCE Registration Form	. 13
Ask The Forester Arlyn W. Perkey	. 15
BIOLOGICAL APPROACHES TO PEST MANAGEMENT DOUGLAS C. ALLEN	. 16
OIL & GAS OPPORTUNITIES FOR TREE FARMERS DAVID J. COLLIGAN	. 18
A GUIDE TO LYME DISEASE JOAN KAPPEL	. 21
Woodsmen's Field Days	. 22
THE MARKETER ACE	22

# The New York

A Publication of The New York Forest Owners Association

The New York Forest Owner is a bi-monthly publication by The New York Forest Owners Association, P.O. Box 180, Fairport, N.Y. 14450. Materials submitted for publication should be sent to: Mary Beth Malmsheimer, Editor, The New York Forest Owner, 134 Lincklaen Street, Cazenovia, New York 13035. Materials may also be e-mailed to mmalmshe@syr.edu. Articles, artwork and photos are invited and if requested, are returned after use. The deadline for submission for the September/October issue is August 1, 2000.

Please address all membership fees and change of address requests to P.O. Box 180, Fairport, N.Y. 14450. 1-800-836-3566. Cost of individual membership/subscription is \$20.

#### www.nyfoa.org

COVER: Annual Fall Barbecue, New York College of Forestry, 1923. Photo courtesy of SUNY College of Environmental Science and Forestry Archives.

# From President

e is thinking about a timber sale and wanted to be more informed than he had been for a harvest some years ago. Some where along the way the man sitting next to me had realized that both he and his woodlot had been short-changed last time. A good reminder that we go through life discovering what we don't know, and with hope that the void is recognized and overcome before the consequences are too great.

The man across the room points out that he is particularly interested in



preventing timber theft, and in assuring that perpetrators get their due. He is clearly interested in forests, and his vocation is

in law enforcement. His interest in woodlot management extends to the unscrupulous person's access to another's property, and other aspects of theft. A good reminder that our woodlots can be seen from a wide variety of interests and perspectives.

These gentlemen were among those present at Cornell's tele-conference on the Economic Aspects of Forest Stewardship, as hosted by Columbia County Cooperative Extension. All across New York, and in neighboring states, folks once again benefitted from the talent and commitment of professionals who are ready, willing and able to help private landowners. It was an excellent program and we thank all that made it possible.

The teleconference and those that attended again reminded me of what NYFOA is all about — an organiza-

tion challenged to stirring interest and curiosity, and, being always ready to help supply answers or point to where answers can be found.

Maybe a woodswalk description strikes an internal bell, or a bumper sticker or a TV program. Who can pinpoint when a quizzical feeling arises or later evolves into questions? We never know the moment when a new view may take shape in someone's mind or in our own — these things simply are not something we control. Nor, for that matter, can we control the timing of other events of nature.

For example, Mother Nature just let me know that it's time for a timber harvest, by topping, heavily pruning or uprooting about 30 trees. A very gentle reminder, I might add, relative to 1998 tornadoes that missed our farm by about a mile (but perhaps not yours), devastating ice storms, or insect infestations that can overnight change the course of years of careful planning and nurturing.

On reflection, we need periodic reminders as to our place in the scheme of things, lest we get overconfident or careless. I note that with the surprisingly small root system which can support tons of towering black cherry, it's clear that Mother Nature knows how to get the most from poorly drained and shallow soils, often only inches deep to the hardpan or solid rock. Just a little reminder.

What a privilege it is to be charged with caring for natural resources and having the opportunity to see first hand the marvels of nature. I hope you all have a marvelous summer.

–Ron Pedersen President NYFOA is a not-forprofit group of NY State landowners promoting stewardship of private forests. Stewardship puts into practice knowledge of forest ecosystems, silviculture, local economies, watersheds, wildlife, natural aesthetics and even law for the long term benefit of current and future generations. NYFOA, through its local chapters, provides this knowledge for landowners and the interested public.

Join NYFOA today and begin to receive the many benefits including: six issues of *The New York Forest Owner*, woodswalks, chapter meetings, and two statewide meetings for all members.

I/We would like to support good forestry and stewardship of New York's forest lands

( ) I/We own	acres of
woodland.	

Name:

Referred by: \_

( ) I/We do not own woodland but support the Association's objectives.

Address:	
City:	
State/Zip:	
Telephone:	
County of Residence:	
County of Woodlot:	

Annual Dues (Please Circle One):

Student	\$10
Individual	\$20
Family (co-owners)	\$25
Contributing	\$30-\$100
Sponsoring	\$101+

Please make check payable to New York Forest Owners Association, or, if you prefer, by check payable to New York Woodland Stewards, Inc. (NYWS, a tax deductible foundation), including any contribution in excess of your NYFOA membership and send to:

NYFOA

P.O. Box 180 Fairport, New York 14450 1-800-836-3566 www.nyfoa.org

# In The MAIL

#### **Annual Planting**

I would like to offer this incident that occurred this year on our approved tree farm in Lindley, NY. For the past ten years, with the assistance of my sons and daughters, we have planted from 200 to 300 trees per year in our grass fields. This year was no different since I ordered 400 trees of White Pine, Blue Spruce, and Canaan Fir. The trees were 4-year transplants and thus a larger hole was necessary to plant each tree.

My adult children could not assist in the planting this year and they tried to encourage me not to plant any trees this year since the procedure would be too much for me alone. However, I have this inner drive to plant trees each year and thus I proceeded to plant the trees this year. (I'm past 60 years old). I mentioned the tree planting to my friend (Bob) who never did any planting except in his food plot behind his home where he planted some vegetables for his own use. My friend is approximately 50 years old and forced to retire from his full-time job due to a back surgery that went haywire. The surgery was approximately 1 year ago. He related he would love to come up to my farm

and assist in the planting. I initially was against his help since he could hardly walk and suffers back and leg pain on a daily basis. Since he

insisted on helping, we packed up the vehicle and went to the fields to begin the project. It was a beautiful, warm, calm Saturday and we entered the fields at approximately 8:00 A.M. We encountered a herd of deer mixed in with a flock of turkeys that we had encourage to leave in order for us to begin our project.

During the planting, Bob could not bend and thus he crawled down each row of holes I made and placed each tree in its hole and covered up the root formation. After about 2 meals in the fields and multiple water breaks, we completed the project at approximately 6:00 P.M. Thereafter we just laid in the field and related how we were both in pain but it was such a good feeling. Bob related this was the first time in the past year that he has done anything constructive and has never planted any trees before. He stated that he would like to come up to the farm again since he enjoyed being so close to nature. We discussed this issue and I related the internal drive that occurs to me when I consider planting trees and how I cannot say no, even though I will not be around when the trees mature.

Hopefully, my children and grandchildren will enjoy the fruits of our labor.

NOTE: The next day Bob called me and related he had a long thorn in his knee that he received while crawling down the rows. He said he really didn't mind the pain associated with it and is looking forward to planting the trees again next year.

-Edward Piestrak New York Tree Farmer Nanticoke, PA

#### **Panel Discussion Input**

If timber theft is so wide spread and little is being done about it, perhaps a group should be formed within NYFOA to start some lobbying in favor of some protection for landowners. Perhaps a group could be planned at the fall meeting to discuss this. My more general question is: how can members suggest panel discussions for meetings? A second question would be this: Is there any way of starting a forum for discussion of relevant topics on the NYFOA web site? How could one be started?

-Jim Martin West Germany jmartin@DVZ-002.FH-Muenster.de

#### Hats off!

Hats off to the Western Finger Lakes Chapter, and to the Dansville Logging and Lumber Company, for sponsoring the tour of the Company's operations on June 3. This was an interesting, informative, and well-attended program. Could the Association arrange a similar tour of a pulp wood/ paper plant?

> -John S. Mauhs Esperance, NY

271 County Road#9 Chenango Forks,NY 13746 607 648-5512 Snowhawke@Juno.com

ROY D. HOPKE Consulting Forester

Appraisals Timber Sales Stewardship Plans 480-A Plans

Restore the American Chestnut

#### RICHARD CIPPERLY

NORTH COUNTRY FORESTRY LLC

- HARVEST PLANNING
- MANAGEMENT PLANS
- LOSS AND TRESPASS APPRAISAL
- CHRISTMAS TREE MANAGEMENT

8 Stonehurst Drive Queensbury, NY 12804 (518) 793-3545 or 1-800-862-3451

**SINCE 1964** 

#### A Note of Thanks

Little did we know back in 1967 when we became owners of our first large piece of swampy, ledgy, bushy woodland how it would change our lifestyle. After searching for years to find a place for a family camp, with timber to manage, we stumbled on to a "100" acre, out back piece of Adirondack property.

The next step was contacting our DEC Forester to guide us with a management program. Since then, more land was added, a pond built and buildings erected. With second hand equipment (from a pick, shovel and wheelbarrow to a bulldozer), roads and trails were established to make the land accessible.

We learned by experience with our forester, marking trees, having a couple of log jobs, doing silvicultural work and working alone much of the time. But there was something missing.

As the years went by we were involved with groups such as a fire company, the church, and professional societies at work. These people have speakers, meet others of like interests and learn from each other. We thought, there must be a forest or woodland owners organization somewhere to help us.

In November 1990 John Hastings, NYS DEC Forester, sent out letters announcing a meeting at the Queensbury Elementary School for woodland owners. At this meeting, John Marchant, NYFOA Executive Director, gave a talk about this organization. A steering committee was formed and Ernest Spencer was our first chairperson. This Southern Adirondack Chapter (SAC) includes Warren, Washington and Saratoga counties and now has more than 200 members.

As we look back over the last 10 years, becoming a member of NYFOA has helped us to manage our woodland with more confidence than before. The enthusiasm "to get up and go" from seeing how other woodland owners manage their forests comes from woodswalks and education meetings set up by NYFOA. This organization brings landowners, government and private foresters, timber harvesters and educators from many states together with a common goal: to better manage our forest land. There is also a "spin off" from the enjoyable, learning, social atmosphere of meetings - tool collecting, where to travel, history of our landscapes and how our forefathers lived.

Our forest management objectives still include growing quality timber for profit but added emphasis is now put on wild life habitat improvement, recreation, aesthetics and water quality. This added value under the trees such as walking the dog, photography, hunting, plant study, grandchild playing is enhanced by a well maintained trail system and seeded log landings.

We will never forget people like the McCartys, who sent notes of encouragement on their guide sheets on how to run a successful woods walk.

As we attend the SAC steering committee, and see our chapter grow,

you can't help but be impressed with the new members' ability to plan, organize and put on educational meetings, the Family Forest Fairs, and work with other chapters of NYFOA. Anyone who is considering becoming involved with NYFOA, don't wait, do it now!

Receiving the NYFOA Service Award at the annual meeting this past spring really made us aware of how much NYFOA has done for us. Thank you NYFOA.

> -Erwin and Polly Fullerton South Woodstock, VT

# In Memoriam. . . GENE McCARDLE

"Home is the hunter, home from the hill." Eugene McCardle passed away on Sunday, June 11th, following a recent illness. Gene wore many hats in his long service to wilderness conservation and good forestry. He was one of only four Honorary Members of the prestigious Campfire Club of America (founded in 1897 by James Beard and Ernest Thompson Seton, co-founders as well of Boy Scouts of America). A past Club governor and officer, he served in recent years as Chairman of the Historical and Library Committee and Deputy Chairman of the Conservation Committee, working to eradicate invasive species (especially Japanese barberry) from Campfire property in Chappaqua. A retired Air Force colonel (Civil Air Patrol), he was an excellent marksman and an honored DEC Hunter Safety Instructor for many years. A Region 3 Forest Practice Board member and Master Forest Owner, he was a leader of the Lower Hudson Chapter of NYFOA, serving last as treasurer and vice-chairman. A memorial service was held June 16th at the Campfire Club. Like a mighty tree fallen in the forest, he leaves an empty space against the sky.

-L. Hale Sims

# LandVest The Next Level of Service

A company of experienced professionals dedicated to providing consulting and marketing services to owners of forest land. Our Timberland,

Consulting & Marketing Divisions specialize in:

Adirondack Office 64 Park Street, PO Box 873, Tupper Lake, NY 12986; (518) 359-2385

#### OTHER LOCATIONS

Boston,MA • Albany, VT • Concord, NH Portland and Jackman, ME

- · Timberland Management
- Forest Land Marketing & Sales
- · Real Estate Asset Planning
- · Land Use Planning
- · Appraisal & Conservation Services

# EPA Withdraws Silviculture Provisions from New CWA Regulations

ROBERT W. MALMSHEIMER AND MICHAEL GOERGEN

n June 10, the U.S. Environmental Protection Agency (EPA) announced that it would withdraw the silviculture provisions from the new Clean Water Act (CWA) regulations it will promulgate this summer. This article chronicles the events that led to EPA's decision and discusses the future of the EPA's regulation of forestry activities under the CWA.

#### EPA's Proposal

In the November/December 1999 issue of the New York Forest Owner, we described the EPA's proposal to use the CWA's total maximum daily load (TMDL) provisions to set pollution limits on waterbodies that do not meet minimum water quality standards. Within EPA's proposed amendments to the CWA regulations was a proposal to reclassify discharges from silvicultural activities as point sources of pollution. Since the CWA requires point sources of pollution to secure a National (or state) Pollution Discharge Elimination System (NPDES) permit before discharging pollutants, this proposal could have potentially required landowners to secure a NPDES permit before conducting silvicultural activities on their lands.

#### Responses to EPA's Proposal

The EPA's proposed regulations generated thousands of public comments and congressional hearings. These hearings resulted in numerous Congressional bills to amend or delay some aspect of the EPA's proposed regulations. Four of these bills, S.2041 (and its House of Representative companion, H.R.3609), and S.3625 (and its companion, H.R. 3609) would amend the CWA to specify that silvicultural activities constitute nonpoint sources of pollution. If enacted, these bills would prevent the EPA or the states from requiring NPDES permits for silvicultural activities.

#### **USDA/EPA Joint Statement**

The U.S. Department of Agriculture (USDA) initially submitted comments that opposed the EPA's proposed regulations. However, the USDA later retracted those comments and supported the EPA's proposal. In May, the two departments issued a Joint Statement that detailed how the EPA's final regulations would address forestry activities (available at http://www.epa.gov/owow/tmdl/tmdlwhit.html).

In the agreement, the EPA agreed that the final regulations would include the following provisions:

- No NPDES permits would be required for forestry activities for five years from the publication date of the final regulations.
- 2. During that time, the EPA and USDA would develop "suggested" forestry Best Management Practices (BMPs) for states to adopt.
- Forestry activities in states that adopted the suggested BMPs would be exempt from NPDES permit requirements.
   In states that did not adopt the suggested BMPs, the EPA or the state would have discretion to require NPDES permits for forestry activities.

#### NASF/SAF Report

In June 2000, the National Association of State Foresters (NASF) and the Society of American Foresters (SAF) issued a report that reviewed the EPA's justification for regulating forestry activities (http://www.safnet.org/archive/ tmdl2000.htm). The report found that the EPA "dramatically overestimated" the number of waterbodies affected by silvicultural activities. For example, of "the 1,040 waterbodies listed by [the] EPA as impaired because of silviculture, only 84 [8%] may actually be impaired by [forestry activities]." The NASF/SAF study found that the EPA's overestimates were the results of poor data collection, illogical waterbody listings, and a funding system that encouraged state officials to under-report the quality of their waterbodies.

#### Silvicultural Provisions Withdrawn

On June 10, a few days after the NASF/SAF report was issued, the EPA announced in a letter to Senator Robert Smith, the Chairman of the U.S. Senate Committee on Environment and Public Works, that the agency would withdraw the silviculture provisions from the new CWA regulations it will promulgate this summer. In the letter, the EPA stated that although its revised approach to the regulation of forestry activities specified in the USDA/EPA Joint Statement was a "significant improvement" over EPA's original proposal, the EPA needs "to describe this approach to the wide range of interested parties, to discuss how this approach would work, and to get ideas for improvements."

#### **Future Concerns**

The EPA's decision to withdraw the silvicultural provisions from the regulations it will promulgate this summer may only be a temporary postponement. As the EPA's letter indicated:

the Agency [EPA] will repropose provisions [for the regulation of forestry activities] . . . later this summer along the lines described in the USDA/EPA Joint Statement. . . . Based on the comments received on this reproposed rule, the Agency will decide sometime next year how best to proceed.

The USDA/EPA Joint Statement approach would require that states adopt mandatory BMPs, a requirement New York (and the vast majority of states) have not adopted. Thus, the EPA's reproposal could still have a substantial impact on forest management in this state. Forest landowners interested in this issue should continue to follow both the EPA's reproposal and the status of Congressional initiatives.

Robert Malmsheimer is an Assistant Professor at SUNY-ESF and Michael Goergen is the Director of Policy at the Society of American Foresters.

#### New Market for Wood in Northern New York

Construction was to begin in June for a new \$150 million OSB mill to be built in Lisbon NY. Lisbon is located in St. Lawrence County near Ogdensburg and the Canadian border. OSB stands for oriented strand board. It is made of credit card sized flakes of wood that are arranged in layers with the strands or grain running at right angles to the next layer under it. The product is made to compete in the marketplace with Douglas fir plywood. This year, OSB production has surpassed Douglas fir plywood production for the first time. Sevensixteenths inch OSB has the same strength as fifteen-thirty seconds inch plywood. There are 66 OSB mills operating worldwide. Predictions are that the product will garner about 70% of the worldwide market for manufactured structural panels in the near future.

Chatham Forest Products will be employing about 100 workers at the mill. This alone is a big boost to the local economy; but one of the big winners will be the Northern New York Forest. We have long needed a market for low-grade wood, particularly aspen. As pulp grade, aspen has had virtually no market since the closing of the Diamond Match Company in the late 70's and Champion Paper's decision in the early 80's to not use aspen in their products.

According to John Godfrey, President of Chatham, the mill will be using 700,000 tons of aspen and red (soft) maple annually. Sixty percent of this tonnage will be aspen and forty percent will be red maple. Some white birch may also be used. All the wood will be delivered to the plant as 8 foot round wood with a 24-inch diameter maximum and 4 inch diameter minimum. It is planned that most of the wood will be procured within a 100mile radius of the mill with 75% of the wood coming from the US and 25% coming from Canada. Domtar Forest Products will serve as procurement agents arranging the contracts etc.

# NEWS & NOTES

Supplying this amount of wood will also create approximately 500 jobs in the woods. Production is slated to begin in the fall of 2001.

Contributed by Jack Ward, a forest owner residing in Potsdam, NY and a member of NYFOA-NAC.

#### NYFOA 2000 FALL CONFERENCE

This issue of your New York Forest Owner magazine contains the Registration Form for the NYFOA 2000 Fall Conference to be held at ESF's Pack Demonstration Forest located near Warrensburg, NY from Friday evening, September 22nd through Sunday, September 24th. (See articles in the May/June issue.) The S.E. Adirondack and Capital District Chapters are co-hosting this event with sponsorship by the Department of Environmental Conservation, Cornell Cooperative Extension of Warren County and the College of Environmental Science and Forestry. This is also SAC's celebration of our 10th anniversary as a NYFOA chapter.

Over 30 volunteers have been working hard to make this an outstanding event combining education, forestry and an opportunity for a family mini-vacation. If you had a good time at summer camp as a kid, or wished you could have gone to one, you'll really enjoy this weekend at Pack. SO, BE A KID AGAIN (or be the kid you wished you could have been)!

Free dormitory-style lodging (offered for up to 80 people), five (5) meals, and the registration fee, all for \$45.00 per person – this is unbeatable in this famous resort area. Bring your own bedding/towels/soap, etc. and any recreation equipment—bikes, canoes, fishing gear, etc.

Don't miss this chance for an education weekend/mini-vacation in the magnificent Adirondacks. The setting is beautiful and the technical program has great presenters who are interesting and informative. There will be lots of great door prizes and the people you'll meet are warm, enthusiastic and outdoor lovers, JUST LIKE YOU ARE! You'll meet and make friends with people from all over the State and learn how you can implement your dreams for your woodlands.

We look forward to seeing you in September.

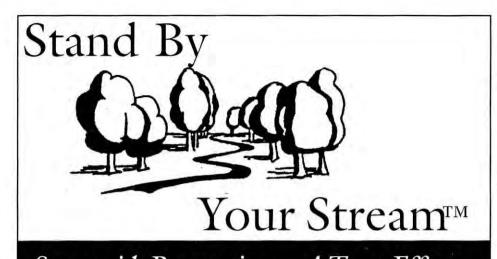
Contributed by Peter Gregory, a member of NYFOA-SAC.

#### Forestry Awareness Day

NYFOA was once again a proud cosponsor of Forestry Awareness
Day in Albany on April 11th. A
number of NYFOA members were on
hand, including Rolf Wentorf who set
up and manned the NYFOA display
table, Hugh Canham who served as
recorder for the issues forum, and Rod
Jones and Bruce and Charlotte Baxter
who handled the distribution of
seedlings from the NY Tree Farm
Committee.

A number of forestry-related groups met to consider common issues; a workshop provided tips on effective communication with legislators; attendees were updated on pending state policy issues including the right to practice forestry, timber theft, and forest tax law amendments as well as on the proposed federal water regulations that could require permits for timber harvesting. Later in the afternoon, there were individual and group meetings with legislators and staff.

Forestry Awareness Day is a major program effort of NYFOA's public policy committee, chaired by Hugh Canham. The purpose is to help raise the level of recognition among state policymakers of the importance of private forestland owners in New York, while being responsive to our members who have urged greater attention to important public policy issues.



Streamside Restoration — A Team Effort

REBECCA L. SCHNEIDER

hile walking along your stream, you notice some changes in your streamside that you never saw before (Fig. 1). The stream bank has become undercut or there are cracks and slumps in the soils next to the stream. Or perhaps you have been managing your farm for several years and are gradually realizing that a significant amount of your valuable crop soil is lost to erosion downstream each spring. What should you do?

Teamwork and careful planning are two key ingredients for the successful restoration of a streamside. Both elements are critical to avoid wasting money and considerable effort, and to reduce the chance of future problems. The following summary provides an overview of the steps needed to restore your streamside successfully.

#### Step 1: Involve your streamside neighbors.

The health of your stream and streamside can be strongly influenced by activities elsewhere along the stream corridor. Talk to neighbors who own streamsides upstream and downstream from you and get them to assess the health of their streamsides. Mapping damaged areas on a U.S.G.S. topographic map provides a convenient way to overview the extent and probable causes of stream corridor problems. If appropriate, pursuing streamside

restoration as a community effort can provide considerable clout when accessing funding and resources and getting permits.

#### Step 2: Get technical assistance.

The actual restoration project may require considerable manpower, technical expertise, equipment, materials and government permits. It makes sense to get help right from the start. Representatives from the local Soil and Water Conservation District or from the Natural Resource and Conservation Service are trained to address streamside restoration. These people will visit your site and assess the extent of the problem, the probable causes and then work with you through the remediation process.

#### Step 3: Assess the probable cause.

Just as with a human illness, correctly diagnosing the cause of the streamside problem is critical in order to choose the best cure. It is unwise to try and diagnose the cause of the streamside problem without expert assistance. However a general understanding of the theory, combined with your personal knowledge of the site's history, will help you to provide useful information to the experts so that they can make a more accurate assessment.

Remember that it is not always easy to determine the cause if a lot of time has passed, if damage occurred when the site

was flooded, or if the problems were caused by activities outside the immedi-

erosion: cumulative loss of individual soil particles from the streambank surface

failure: a large section of the streambank breaks away from the streamside and slides into the stream.

Probable causes of streamside erosion and failure can be divided into three types based on their source:

#### On-site, streamside factors:

Clearing of the riparian vegetation is the most frequent cause of streamside damage. Without plant roots to hold the soil, and stems and leaves to retard flood flow, the soil is easily eroded. Freezethaw cycles systematically loosen the exposed surface soils and encourage their erosion.

Heavy traffic in the streamside, from livestock, pedestrians or vehicles, all break up soil structure, kill plant roots, and encourage channelized runoff through the streamside. Increased loading from vehicles or structures on the streambank surface also weakens the underlying support, leading to slumping and bank failure.

Increased water runoff will cause gullies and sheet erosion. Below ground, groundwater buildup may cause pressure which loosens and weakens the soil matrix.

#### Nearby, in-stream factors:

As water moves down the stream channel, its velocity and path are influenced by obstacles along the way. Newly-fallen logs and large debris can divert the flow against a stream bank.

Signs of Poor Health

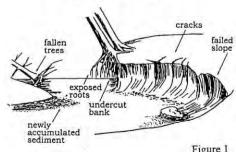


Figure 1

This rediverted flow can result in serious erosion, steepened banks, and undercutting. Straightening or changing a stream's natural curves during shoreline development will redirect water flow and may cause increased erosion downstream.

#### Long-distance, watershed factors:

The width, depth, and amount of curving (called sinuosity) of each stream channel is determined by the water flow and sediment load that the stream experiences during storm flood events. Land use changes upstream, such as clearing of forests for development or agriculture and more impermeable surfaces, can result in increased runoff and greater discharges and sediment loadings. The shape of the channel will change downstream to accommodate the more powerful flow.

## Step 4: Select an appropriate method.

Obviously, if redirected flow by fallen trees or large debris has caused bank erosion, then removal of the object will help to return the stream to its original course.

Reshaping of the bank is probably the first step needed if the slope is steeper than 33 ° (1: 1.5). Depending on the project size, the banks can be handshaped with shovels and pick-axes or sculpted using heavy equipment. Subsequent hand-smoothing with rakes will be needed to eliminate rough patches. Hay bales, sandbags and other devices should be used to keep sediment out of the stream.

Revegetation of the exposed bank and streamside is the most common and "eco-friendly" method for streambank repair. This may be accomplished rapidly by planting healthy cuttings, posts or seedlings of flood-tolerant trees such as willow and red osier dogwood. Seeding with grass mixes can also quickly establish a dense root matrix that holds soil in place, although woody species are needed for long-term protection.

Physical structures are sometimes needed to protect a streambank, for example, where streambanks adjacent to roads are severely eroding. Large wire containers filled with rocks are called "mattresses" and "gabions" and may be needed in areas of forceful flow. Most physical methods are expensive, labor and resource intensive, and do not allow for later changes in the stream flow patterns.

## Step 5: Assemble all necessary resources.

After determining the appropriate method, a schematic of the proposed work is needed. The project coordinator will identify the amount and type of materials that will be needed, including plants, soil, riprap, tools and so on. Labor and moving equipment needs must also be considered. This information will form the basis for a permit application.

Streamside repair activities require permits if they entail soil excavation or fill or structural work below the high water mark. The Natural Resource Conservation Service acts as lead agency on most restoration projects and is a good first contact. In some regions, NRCS has been given blanket permits for multiple restoration projects to reduce paperwork. However, the NYS Dept. of Environmental Conservation officially regulates these activities under Article 15 of the Clean Water Act and will coordinate with the U.S. Army Corp of Engineers for a federal permit if needed. Local town ordinances may also be relevant for some dredge and fill projects. Processing of permit applications generally take 3 months or longer, so plan ahead.

Streamside restoration projects can vary in expense depending on the length of the site to be repaired and the need for materials and labor. Currently the U.S. Dept. of Agriculture has several cost-share programs which provide funding to farmers and landowners for streamside improvements.

#### Step 6: Restoration in progress.

The timing for actual restoration activities is important. Most bank shaping works best at low water, typically in mid to late summer. However, plantings will then need to be monitored to ensure sufficient water is available. Banks should not be exposed when winter storms arrive or severe erosion will result. Assemble all materials neatly at the site ahead of time and be sure to schedule for the relevant construction workers and laborers well in advance. It is important to follow common-sense safety precautions, including providing safe access to the site, accessible first-aid supplies, and appropriate protective clothing.

#### Step 7: Follow-up and Maintenance

Follow-up and maintenance are an important part of the restoration process. Plantings and seeds will need most attention immediately following the project until they get a dense root system established. After high waters recede in the spring, look over the site for gaps in the vegetation and damage to physical structures. Keeping a record of the site through photographs is helpful for assessing gradual changes. Replant and repair as needed.

Rebecca Schneider is an Assistant Professor in the Department of Natural Resources at Cornell University. Her expertise focuses on the interactions between plants and groundwater in wetlands, along lakeshores and streamsides

#### NYFOA Scholarship Fund

As of June 1, 2000, the NYFOA Endowed Scholarship Fund that is administered by the SUNY ESF College Foundation, Inc. has a fund balance of \$22,189.60

#### Nolan's Sporting Supplies

**Outdoor Equipment Specialist** 

37 - 47 Genesee Street Auburn, NY 13021

315/252-7249



# A long the Finger Lakes Trail: Cattaraugus Serendipitous Part II

IRENE SZABO

The last segment of our occasional meander along the FLT ended in northeast Cattaraugus County with my resolve to move the next miles of trail route off an ugly road through featureless swampy bush and away from a viciously steep pipeline clearing that some years offered head-high raspberry canes followed by a dangerous creek crossing at the bottom. Several letters and phone calls followed by visits netted enough yeses among the nos to put together a nice route around the shoulder of that next hill, through sugar maple woods both young and old, with occasional views back toward Densmores' hilltop trail vistas. Two Raab brothers and their wives, all of whom grew up in that neighborhood, gave permissions, and John Cobb from Buffalo agreed to let the trail cross his upland woods and drop down to the next valley on the property where his family had spent all



John Cobb of Buffalo generously donated his upland woods property to the FLT.

their get-away weekends and hunting trips for the last generation.

We felt safe routing the next mile of trail after Cobb's along railroad tracks that were being used once a week by a slow-moving gravel train, because it was a peaceful way to walk the swampy valley of Devereaux Creek without getting wet feet. The railroad offered three or four solid bridges over the twisting deep creek within that next mile, while the paralleling highway, NY 242, was busy and unattractive as a hiking route. Even though road sounds were near, the bushy swamp was a world apart, where catbirds, kingfishers, and blue-winged warblers called, and deer stepped out onto the railbed unafraid. Invisible beaver rearranged the stream's flow in places, and the rail route became even more attractive as a dry way to sample the secret and wet interior when trains stopped running altogether.

In 1998 John Cobb happened to mention that he had been protesting the rising appraisal and taxes on his 45 acres of woods and disappearing pasture, grousing that the assessor and the appraiser were the same person, thereby rendering John's arguments a trifle short-circuited. Howard Beye, trails chairman of the Finger Lakes Trail Conference, jokingly suggested that John threaten the assessor with donation of his property to the not-for-profit Finger Lakes Trail Conference (FLTC) so that NO taxes would be received. A retired IRS employee, John Cobb heard not a joke but an opportunity to do a good deed AND gain a major donation against his next income taxes, so the

dear man has indeed donated the whole property to the trail conference! We gratefully accepted, and the Board of Managers decided to use the property as a public preserve until such time as the FLTC might need to sell the property to finance a needed purchase elsewhere.

A day-hike loop trail has been added to the main cross-state trail's traverse of the property, a loop trail that samples all the various habitats of the property from road's edge and stream-side, up 300' in elevation past old fields returning to young trees, into extensive sugar maple woods covering the hilltop. The adjacent landowners, Pat and Mary Raab, actually invited us to build the new loop onto their lower hillside also, which gives us a wonderful walk along a line of huge spreading maple, ash, and hickory - a hedgerow grown old and handsome between two now abandoned pastures and orchards. Stirring golden autumn views southwest down the valley toward Ellicottville open brilliant under that treeline, and in winter ski slopes are visible.

A primitive campsite has been provided at the very top of the hill, with no amenities other than a few logs for sitting on next to a lashed log table between trees. The small clearing could accommodate two or three small backpackers' tents, but the nearest "improved" spring (dug out spot with a bottomless bucket and a few rocks) is a few tenths of a mile away along the new trail.

In order to invite and inform the local public about this walking preserve (which is bordered with "posted" signs

continued on page 11



FLT Kiosk at Cobb Property

that say "WELCOME") we have mowed a small parking area in the roadside golden rod field and built a trailhead kiosk, a bulletin board under a roof with maps and information about the property and the whole FLT. Brochures and maps of the Cobb Property loop trail are available in a box in back.

Money for the kiosk materials and for bog-bridging planks needed over seepy spots came from an American Greenways grant funded by Kodak, the first award of a national grant program that the FLTC has received. For National Trails Day in June of 1999, members of both the FLTC and Buffalo's Foothills Trail Club started the loop trail, the campsite, and the bulletin board, and both Boy and Girl Scout troops built the bog-bridging and streamgully steps needed in damp areas. Naturally this day was also a grand excuse for a giant picnic, during which all present were able to thank John Cobb and his grown daughter in person.

By September the kiosk was complete, with signs and posters installed under Plexiglas. The first local person to stop there during final map and sign installation pointed to the map and asked with astonishment, "Does this mean I can walk from right here all the way to Allegany State Park and nobody would stop me?" Absolutely!

Seldom, however, can such rapture continue forever untarnished: in late 1999 the Rochester & Southern Railroad started improving the rickety old rails, replacing many ties and adding stone ballast. Trains have begun running again, this time along what has become

the line's new main route from Pennsylvania to Buffalo, and the trail route through a mile of swamp has been lost. Even more awkward, it is theoretically illegal to walk across the tracks even within the Cobb property, where we had gratefully used the railroad's bridge over that bumptious creek even to get out to the

road frontage of our own property!

Of course the railroad will grant us a legal crossing spot, but it will require that the FLTC's slender budget and overworked volunteers build our own bridge, this one almost 50-feet long over Devereaux Creek. Clever, wasn't I, to build this reroute that avoided crossing the creek? After that immense project, none of us had planned on for this year, the next ambition will be to stitch together permissions through private land on the other side of the valley to

replace the temporary highway walk hikers face right now, for the trail entrance to Boyce Hill State Forest is still 1.3 miles east of Cobb's down NY 242. Thus we optimistically anticipate future articles on trail route adventures and new landowners to meet in Cattaraugus County.

The area described in this Cattaraugus series is shown on Map M-4 published by the Finger Lakes Trail Conference. PO Box 18048, Rochester NY 14618, 716-288-7191, email at fltc@axsnet.com, web site at www.fingerlakes. net/trailsystem

Good News Update: Garrisons' shelter rises from the ashes

The December fire that destroyed the hikers' shelter in Bill and Ellen Garrisons' hemlock grove in Steuben County proved only a temporary setback. Before the end of May homeowners insurance and a horde of volunteers had rebuilt an Evangeline Shelter larger and more grand than the log structure that had been lost. Recently retired Tom Noteware of Hammondsport dedicated many days of work organizing, planning, and worrying, and in mid-May a host of volunteers, including NYFOA members Dick Starr, Jim Kersting, and Pam McCarrick, built the log walls atop a foundation made by Garrisons' contractor sons Matt and Kent.

In addition to tending New York trails, Irene Szabo is a member of the Western Finger Lakes Chapter of NYFOA and a Director of the Finger Lakes Land Trust.

#### First Pioneer Farm Credit, ACA

Think of Farm Credit when ...



Buying a home • Buying a farm

- Buying the neighboring woodlot
- Estate planning IRS alternate valuations
- Writing payrolls Family transfers
- reviewing assessments Leasing equipment
- preparing your taxes• selling timber

Forestry consulting & Appraisals
Rick Percoco, NY State Certified Appraiser #46-15788
DEC Cooperating Consulting Forester.

Your first choice for financial solutions. 394 Route 29, Greenwich, NY 12834 1-(800) 234-0269 / rick.percoco@firstpioneer.com

# Woodlot Calendar

July 31-August 4, 2000 (Monday - Friday)

"Game of Logging Levels 1-4," Instructed by Dan Hartranft, Hosted by Clune Lumber Corp., Otsego County. For information contact Catskill Forest Association, (845) 586-3054.

August 3, 2000 (Saturday)

Western Finger Lakes Annual Picnic. The Swanson Family has again graciously offered the use of their personal picnic grove on the Osage Farm which is on Swanson Road and off from Begole Road in the town of Mt. Morris. All chapter members are encouraged to come and bring a friend. Please bring a dish to pass and your own table service. The Chapter will provide soft drinks, ice, coffee and tea. Sweet corn and fires will be ready at 4:30 for roasting. This year there will be a guided tour of the Mount Morris Dam. For more information contact Dave and Helen Swanson at (716) 658-4601, Jeff Swanson at (716) 658-2167 or Joe LaBell at (716) 335-6677.

August 18-20, 2000 (Friday - Sunday)

NYS Woodsmen's Field Days. Aside from the usual slate of activities there will also be two days of workshops covering topics from logging to sawmilling. See page 22 for more information.

September 18-20, 2000 (Monday - Wednesday)

FRAGMENTATION 2000 -- A Conference on Sustaining Private Forests in the 21st Century will be held on September 18-20, 2000 in Annapolis, MD at the Radisson Hotel. For more information contact Mike Jacobson, Assistant Professor/Extension Forester, Pennsylvania State University, School of Forest Resources, 7 Ferguson Building, University Park, PA. 16802 Phone: (814) 863-0401.

September 22-24, 2000 (Friday - Sunday)

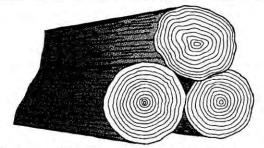
NYFOA 2000 Fall Conference planned. Charles Lathrop Pack Demonstration Forest, Warrensburg, NY. See page 13 &14 for registration form.

October 10-13, 2000 (Tuesday - Friday)

SUNY College of Environmental Science and Forestry is pleased to announce the Third Biennial Conference: Short Rotation Woody Crops Operations Group on October 10-13, 2000 in Syracuse, New York.

Join us for technical presentations and a field tour in New York's scenic Finger Lakes wine country. Hear the latest progress reports from researchers and practitioners. Examine woody energy crops, planting and harvesting equipment, wood-tofuel processing equipment, and a wood/coal co-firing power plant. Please contact SUNY-ESF if interested in providing equipment displays or demonstrations.

For more information: Phone: (315) 470-6891 Fax: (315) 470-6890 Email: ce@esf.edu Webpage: www.esf.edu/willow





# More Valuable Logs · · · More Valuable Lumber

- Stop End Splits on Logs
- - Prevent End Checking Losses

Use the Best Known Products in the World

#### **ANCHORSEAL®** End Sealer for Logs & Lumber

LogSavers<sup>®</sup>

eliminate up to 90% or more of end checking - give customers a more valuable product

- "s -irons" made from recycled plastic - saw thru with no damage to saws or veneer knives - no more iron stains in valuable veneer logs

For samples or more information, contact:



FAX: 716-833-0120

716-833-9366

U·C COATINGS CORPORATION P.O. Box 1066 • Buffalo, NY 14215 • U.S.A.

website: www.uccoatings.com email: nyfoa@uccoatings.com US/CN Toll Free: 1-888-END-COAT

Manufactured right here in New York State - Shipped World-wide

# NYFOA 2000 FALL CONFERENCE

# September 22 - 24

## Pack Demonstration Forest

Warrensburg, NY

Name(s):		Phone:	
Street/City/Zip:			
	NUMBER	COST/PERSON	TOTAL
Registration		\$20 (\$25 after 8/1/00)	\$
Lodging Reservation			
@ Pack Forest (No Charge)	MF	\$0	\$No Charge
Meal Package (5 Meals)		\$25	\$
OR			
Individual Meals:			
Friday Night		\$5	\$
Saturday Breakfast		\$5	\$
Saturday Lunch		\$7	\$
Saturday Supper (Steak Roast)		\$12	\$
Sunday Breakfast		\$5	\$
	<b>ДЕТАСН &amp; С</b> О	TOTAL	\$

#### NYFOA 2000 FALL CONFERENCE SCHEDULE OF EVENTS

#### FRIDAY SEPTEMBER 22<sup>ND</sup>:

3-6 pm Sign-In/Register

6 pm Pizza Supper

7 pm Old Adirondack Logging Films

Dick Nason

#### **SATURDAY SEPTEMBER 23RD:**

Pre-Breakfast Bird Walk

Breakfast

Technical Sessions:

Whitetail Deer Management

Dick Sage

Agroforestry: Ginseng Management & Other

Products

Bob Beyfuss

Update on Forest Insect Problems

Doug Allen

Lunch

Lessons from the TMDL Debate

Don Floyd

Afternoon:

Overview of Pack Forest and Research Programs

Dick Schwab

White Pine Management

Roy Burton

Dinner

6:00 pm

Steak Roast & Entertainment

#### **SUNDAY SEPTEMBER 24<sup>TH</sup>:**

7-8 am

Breakfast

o am Breakiast

9 am-Noon Woods Walk at the Fullerton's

1993 NYS Outstanding Tree Farmers

# NYFOA 2000 FALL CONFERENCE

September 22 - 24, 2000

**Pack Demonstration Forest** 

Warrensburg, NY

#### REGISTRATION FORM

Lodging at Pack Forest is in male or female designated dorms with showers in separate buildings. Bring bedding/sleeping bag and towels. For other lodging information, contact **Warren County Tourism** at 1-800-365-1050.

Mail Registration Form and payment to:

Roy Esiason PO Box 92

Granville, NY 12832

For more information: (518) 798-0248

Checks payable to: "NYFOA 2000 Fall Conference"

Please rank your interest level in other possible events/tours:

\_\_\_\_\_ Maple Sugar House \_\_\_\_\_ Portable Sawmill Demonstration \_\_\_\_\_ Paper Mill Tour
\_\_\_\_ Stars/Night Walk \_\_\_\_\_ Saratoga Tree Nursery \_\_\_\_\_ Christmas Tree Farm Tour
\_\_\_\_ DETACH & COMPLETE

#### NYFOA 2000 FALL CONFERENCE Speakers/Presenters

Doug Allen Professor of Entomology, SUNY ESF, Syracuse, NY.

Topic: Common insect problems with updates of new problems.

Bob Beyfuss Agriculture & Natural Resources Program Leader, Cornell Cooperative Extension of Greene County, Cairo, NY.

Topic: Growing ginseng, mushrooms and other agroforest products in your woodlot.

Roy Burton State Lands Forester, Dept. of Forest Parks Recreation, Springfield, VT

Topic: Management of White Pine

Donald Floyd Professor of Natural Resource Policy, SUNY ESF, Syracuse, NY.

Topic: Lessons from the TMDL Debate

Dick Nason Forester, Retired from Finch, Pruyn & Co., Glens Falls, NY

Topic: Early (1920s & 30s) logging films of the Adirondacks

Dick Sage Research Program, Huntington Wildlife Forest, SUNY ESF, Newcomb, NY.

Topic: Managing wildlife on your property; problems & answers.

Richard Schwab Director of Forest Properties, SUNY ESF, Syracuse, NY.

Topic: Overview of Pack Forest; Research & Recreation.

NYFOA 2000 Fall Conference • Pack Demonstration Forest • September 22<sup>nd</sup>-24<sup>th</sup> • For more information call (518) 798-0248



The following questions were submitted by NYFOA member Jim Martin of Muenster, Germany.

#### Question

If you have two red oaks growing next to each other, should you cut the poorest quality one to release the best one? What if the lower quality tree is worth something now, or in the near future, should you wait and sell it?

#### Answer

Crop tree management can be applied in either pre-commercial treatments (cut trees can't be sold), or in commercial thinnings when cut trees are harvested and sold. If the landowner has enough commercially valuable cut trees to make it feasible to make a viable sale, then, generally that is the best option. The landowner not only receives the benefit of current revenue, but he or she accomplishes the needed cultural work without investing out-ofpocket money. This is only true if a responsible timber purchaser can be contracted to remove the cut trees without causing excessive damage to residual crop trees. A forester should be engaged to prepare and administer the sale to successfully accomplish a commercial thinning using crop tree management.

The question of: "Should I wait for cut trees to reach commercial size to do a needed release?" is difficult to answer without looking at specific trees and markets in a given location. There are many questions that must be answered to make a good decision. For

example: Are the cut trees unmerchantable because they are too small to market, or are they just poor quality trees that will still be low-value trees when they get larger? How valuable will the cut trees be when they become merchantable? Is their value likely to offset the loss of increased growth on the higher-value crop tree? How long must the landowner wait for them to be merchantable? How much are they interfering with the growth of the crop trees? Will the anticipated market for the cut trees still be there when the landowner is ready to sell? Again, a forester can help answer these questions. If you have many red oak crop trees, you probably need professional assistance making these decisions. Released red oak trees are often an attractive investment.

Question

If a tree has grown slow and has narrow growth rings and is then released so it has wider growth rings, it is no longer considered for veneer because the veneer breaks at the point where the rings change in size. Is this true? If so, doesn't this further complicate deciding which trees to release?

#### Answer

Most veneer buyers prefer consistent growth ring width. Ideally, dramatic changes in growth are not desirable. However, there are fluctuations that occur because of weather variations even in unreleased trees. In my opinion, most released crop trees in the northeastern United States will not be

excluded from veneer markets because they grew too fast. A growth rate of 5 inches per decade (a pretty good rate) is 1/4 inch growth rings. If the tree has the other characteristics that make it a desirable veneer tree, that growth rate will probably be very acceptable. Obtaining high-value veneer logs is very competitive and difficult in most market areas. The greatest threat to crop tree qualification for veneer and future veneer supply is not growing trees too fast, but premature harvesting and high-grading (take the best and leave the rest). This common practice throughout the Northeast under the mask of the term "select cut" has resulted in a constrained supply of high-value hardwoods.

Arlyn W. Perkey is a Silviculturist with the USDA Forest Service, Northeastern Area, State & Private Forestry in Morgantown, WV



# Biological Approaches to Pest Management

Douglas C. Allen

In previous articles, I have referred to various "biological tools" that are used to reduce damage by forest pests and to help minimize the use of synthetic organic insecticides. A recent article in the Albany, NY Times Union about current attempts to limit populations of hemlock woolly adelgid through the release of predaceous lady beetles in CT, NJ and NY suggested a few comments on this subject might be timely.

First, some definitions: Control occurs when populations of a forest pest are kept below levels that prevent a forest owner from maximizing his or her management objectives. This interpretation is important in the context of contemporary approaches to pest management. Economically or ecologically significant damage thresholds vary with one's management objectives; what may be a significant problem for you may not be of concern to a forest owner down the road whose management objectives differ. Classi-

cal biological control is the manipulation of one living organism against another, such as the use of lady beetles to control the woolly adelgid or applications of the bacterium "B.t." to reduce populations of gypsy moth. A more comprehensive term that covers a myriad of biorational approaches to pest control is biological insect pest suppression, which refers to the use or encouragement of living organisms or their products to reduce pest populations. This broader term highlights significant advances made during the past two decades in our ability to manipulate insect behavior and to exploit our understanding of insect-plant interactions. Examples are behavioral chemicals such as sex attractants, plant-produced compounds that deter feeding or inhibit egg laying, genetic manipulation, and growth-regulating substances that impede normal insect development. In my view, any biological tactic that is effective, has minimum



Figure 2 A typical lady beetle. Both larval and adults stages are predaceous.

impact on the environment and is relatively pest-specific is an improvement over total reliance on a more broad spectrum tool such as synthetic organic insecticides.

Secondly, some caveats: For obvious reasons, suppressing pest populations by biological means is appealing to both practitioners and forest owners. Development of a biological tool is costly, however, and requires a thorough understanding of pest biology. Additionally, once an

continued on next page



Figure 1 Douglas-fir tussock moth caterpillar killed by a virus.



Figure 3 The white-footed mouse.

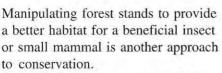
exotic pest such as gypsy moth or the hemlock adelgid attain very high densities, it becomes problematic whether the pest can be controlled solely by biological means. In other words, we have not reached the point, and likely will not in the near future, where we are able to do away with the occasional need for synthetic organic insecticides to protect forest resources.

Forest entomologists have successfully manipulated many different types of organisms to reduce pest populations to tolerable levels. The spectrum ranges form microorganisms to mammals. Pest control attempts with microbes such as Bacillus thuringiensis ("B.t"), certain fungi and a few viruses have been especially successful. Viruses, for example, are very host specific and have been registered for use against a few major defoliators, like gypsy moth and the Douglas-fir tussock moth (Fig. 1). **Insect predators** such as lady beetles (Fig. 2) are associated with outstanding pest control efforts in agriculture, and recent attempts with the hemlock woolly adelgid attest to their potential for use against certain tree pests. In some instances, populations of small mammals have been manipulated to the detriment of forest pests. One of the most significant predators in low density gypsy moth populations, for example, is the white-footed mouse (Fig. 3). Similarly, shrews and voles

are often major sources of mortality in outbreaks of conifer-feeding sawflies. By improving the habitat for these insectivorous (insect eating) mammals, we may be able to encourage their reproduction and establishment in pestinfested stands. A vast majority of the attempts at biological control to date have involved parasitic flies and wasps (Fig. 4). These agents are relatively easy to capture, readily cultured under laboratory conditions and generally establish well following release. In addition, their efficiency as mortality agents is greatly enhanced by a high rate of reproduction, strong dispersal tendencies and keen host-finding capabilities.

There are two general approaches to biological control using parasites and predators. Augmentation is an action taken to increase populations and/or diversity of natural enemies, either by inoculating the pest's habitat with a small number of potentially useful agents or inundating the location with a large cohort of beneficial insects obtained from mass rearing in the laboratory. The former approach is less costly and assumes the population of the beneficial agent will establish, reproduce and slowly increase in abundance in future generations to a density capable of maintaining pest numbers at tolerable levels. Inundation, on the other hand, often produces immediate results and may or may not result in long-term pest suppression.

> Conservation consists of actions taken to protect and maintain populations of natural enemies. For example, careful timing of insecticide applications to have maximum impact on the pest and minimal effect on important natural enemies.



These techniques may be difficult to separate in practice, but basically augmentation deals directly with the beneficial organism and conservation attempts to manipulate ecological elements which, in turn, will favor the beneficial agent. The capture, rearing and release of limited numbers of ladybeetles against hemlock woolly adelgid is a classic example of an inoculative approach to augmentation.

This is the 51st 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. It is also possible to download this collection from the DEC Web page at: http://www.dec.state.ny.us/ dlf/privland/forprot/health/nyfo/ index.html.



Figure 4 A parasitic wasp.

## Bruce E. Robinson, Inc.

#### FORESTRY CONSULTANTS

- FOREST PRODUCT MARKING & MARKETING
  - TREE FARM MANAGEMENT
  - URBAN FORESTRY & COMMUNITY MANAGEMENT
    - TIMBER APPRAISALS
    - ACCESS ROAD DESIGN & SUPERVISION
    - TREE PLANTING
    - TREE SHELTER DISTRIBUTOR SUGAR BUSH MANAGEMENT
- BOUNDARY MAINTENANCE
- CHRISTMAS TREE MANAGEMENT FOREST MANAGEMENT PLANNING
- FOREST RECREATION PLANNING
- WOODLOT IMPROVEMENTS IN IMMATURE STANDS
- WILDLIFE MANAGEMENT
- FOREST TAXATION PLANNING

Ph. (716) 665-5477 Fax. (716) 664-5866

e-mail brobin@netsync.net 1894 CAMP ST. EXT. JAMESTOWN, NY 14701

# OIL & GAS OPPORTUNITIES

# For Tree Farmers

#### DAVID J. COLLIGAN

s a practicing lawyer, I have been getting calls from tree farmers who have advised that a person knocked on their door and offered to lease their acreage for oil and gas production. Usually, the landowners are presented with a pre-printed form with a few blanks filled in and asked to sign the form. Fortunately, my clients asked me before they signed the lease!

The leasing of timber property for oil and gas production can be a lucrative and worthwhile use of the property which is not directly inconsistent with timber management and other woodland activities. However, there are some basic rules that must be kept in mind from the very first contact with the representative of the oil and gas company.

The first rule to remember is that the person who is seeking the oil and gas leasing rights knows way more about your property's title and previous leasing history than you do. In addition, that person has a very good understanding of the geology and gas formation strata under your property. Probably before he or she arrived at your house, he or she

thoroughly researched your title records at the County Clerk's Office and ascertained what interest you currently have that is available for leasing. Most likely, they are following a geological formation that exists in your area and are attempting to lease up as much of the property surrounding that geological formation as they possibly can.

Knowing you are dealing with someone with superior knowledge should immediately clue you into the fact that you need someone who can negotiate with that person. Further, if you take one look at the pre-printed lease, you cannot possibly begin to understand the ramifications of signing that lease without professional advice.

The second rule to remember is that those pre-printed leases <u>are</u> negotiable!

The third rule to remember is that once you sign a lease and it is filed at the County Hall, that lease becomes a cloud on your title and you have essentially leased one of your property rights to a stranger just like you would if you leased your home, your farm, or an apartment, to a tenant. The rights contained in that

lease run to the lessee and give those people a superior right to you, the owner, provided they comply with the terms of the lease, which may continue for decades or longer.

New York State has solved the problem of old mineral and oil and gas leases which have fuzzy expiration dates being continuing clouds on title by providing for a procedure whereby old leases can be removed by the owner after they stop receiving rentals and/or the lease otherwise expires. This procedure is found in General Obligations Law ss. 15-304.

Most oil and gas leases have so many clauses that are favorable to the oil and gas company that I cannot possibly review all the negotiating points in an article of this nature. I do want to highlight some of the critically important points to guide you in your discussions.

The first point is the "delay rental," which is usually described as a certain number of dollars per acre per year, i.e., \$5.00 per acre each year is designed to pay the landowner for the granting of what amounts to an option to drill for oil and gas on your property. This delay rental is just a "teaser" and is highly negotiable, and often times, in the first couple minutes of discussing it with the oil and gas company representative, you find that they are actually willing to pay significantly more on a delay rental basis than what was initially offered. This delay rental should not be viewed as your financial reward for entering into the lease because it only is paid for a short period of time, usually the length of the lease option. The real value of the lease is the royalty payments that you will receive if an oil or gas well is drilled and is successful in locating a large reservoir of oil or

The oil and gas royalty payment has generally been placed at approximately one-eighth, or 12.5%, of the wellhead price of the oil and gas pumped out of the

# HALE FORESTRY COMPANY

610 East Main Street, Westfield, PA 16950



Professional Forestry Consulting Forest Resource Management Services



APPRAISALS INVENTORIES

#### Michael L. Hale

Toll Free (877)-HALEFOR or (814) 367-5915 e-mail halefor@penn.com Fax (814) 367-5919

Society of American Foresters • Pennsylvania Forestry Association NY Cooperating Consulting Forester • Member NY Forest Owners Association well. This royalty payment is made to the landowner based on a "pooling" of surrounding acreage, which is set by New York State law, as a minimum of 40 acres and a maximum of 640 acres. Sometimes the DEC sets a minimum pooling size based on well depth.

The pooling of acreage around a wellhead is designed to protect adjoining landowners from having the gas beneath their property withdrawn by their immediate neighbor without proper compensation. However, it also allows the oil and gas companies to lock-up large areas of property for their exploration, and not have any competitors come onto the property to "put another straw into their drink." Therefore, you should negotiate the pooling acreage size very carefully to reduce it to the lowest amount necessary based upon the depth of the well, the size of the property being leased, and other factors relevant to the pooling issue.

Another common clause in oil and gas leases is the right to place oil and gas transmission lines across your property. You are not obligated to grant transmission lines to transport other people's gas and oil across your property, unless in fact, you have a producing well on your property, and therefore, you need to have some way to get your production off the property. Many of the leases contain the transmission rights whether or not the lease is in effect. The result of this is that many people currently have transmission easements across their property and have never received a dime of royalty for the gas or oil produced that is running through those lines. After the lease is signed, there is very little ability to change the terms of the lease that was entered into. A properly negotiated lease containing transmission line easements not directly related to well production will provide for separate compensation.

Another negotiable part of the lease is the placement of the access roads, wellheads, and transmission line locations. Each lease should contain a "mutual agreement" clause whereby the landowner and the lessee agree on the placement of all permanent access roads, transmission lines, and wellhead locations.

Another critical issue that must be separately negotiated is whether or not storage will be permitted under the lease and for what price. Many "production" leases have been turned into "storage" leases much to the disgust of the landowner. Typically, storage leases contain a \$1.00 per acre price, but give the gas company the right to come back for an indefinite time period to retrieve this stored gas. In some areas, this means that the storage gas lease has been extended for fifty or more years after the land produced gas and oil.

The primary reason for entering into the lease, the amount of royalty paid, turns out not to be very negotiable. There are very few instances where oil and gas companies will pay more than the oneeighth landowner royalty because the time period necessary to recover the costs of drilling and developing the well, as well as the pipelines connecting the well to the other area pipelines, would be lengthened to a degree that they would not be able to attract investors to fund the drilling. Therefore, unless you have a very large tract of land, or you are located in a very "hot" production area, it is highly unlikely that you will be able to negotiate much better than the typical one-eighth, or 12.5%, royalty payment on gas or oil produced.

Tax assessors sometimes increase taxes on the land or impose other penalties. The lease can provide that if such increases occur, the oil and gas companies must pay for the increased taxes and/or penalties. Normally, the oil and gas company is directly assessed for the value of the well once it is completed, but pays no taxes on the lease until such time as the well is drilled.

Landowner use of the oil and gas from the well is usually permitted up to a specified quantity of the gas for the landowner's own use. It might be expensive, however, for the landowner to use this gas because he or she might have to invest in a pipeline, separator, odorizer, regulator, and other heavy equipment. The lease could require the drilling company to pay all the costs in making the gas usable by the landowner. At a minimum, the landowner should be aware of any costs to be incurred, including the costs of equipment and maintenance.

Don't be fooled into accepting the offer of a free well towards the end of the

# PONDS UNLIMITED INVITES YOU....

to think of all of the benefits you could enjoy from having a pond or a lake on your own property. This idea could become a reality if the right conditions prevail. From our experience it normally requires favorable watershed conditions, good site conditions, owner-commitment to stewardship for enhancement of forest land values, appropriate engineering planning and design, and good construction practices.

PONDS UNLIMITED CAN EVALUATE the site of your choice. We can provide all of the engineering services needed to plan, design and oversee the construction of a dam to create a handsome pond or lake on suitable property. You can get additional information by calling 315/422-POND or sending a letter of inquiry to:

#### PONDS UNLIMITED

719 E. Genesee St. Syracuse, NY 13210 315/422-7663 FAX/476-3635

usual productive life of the well. This Trojan Horse often has substantial hidden costs associated with it. Under New York law, all wells eventually must be "plugged." This very expensive procedure would add a significant burden to the landowner's property value and may actually wipe out any gains received during the productive phase of the lease. In fact, it may be cheaper in the long run to require the company to plug the well even though it cuts off your personal supply and you have to abandon the remaining gas or oil in the well.

Be careful of leases that provide that the drilling company can utilize any water found on the property. If you have a pond or stream that you do not want disturbed, you must advise your negotiator.

continued on page 20

#### Oil & Gas Lease (Continued from page 19)

Be aware that oil and gas drilling leases will have very little effect on your property until such time as an oil and gas well is drilled. At that time, a substantial interference with your use and enjoyment of the property will occur. The access road will be put in, and well site bulldozed. Every drilling operation has the appearance of people playing in the mud, usually knee-deep. Therefore, if you utilize your property for things like recreation, hunting, or farming, you may wish to control the timing of the drilling so as not to be in direct conflict with your use of the property. This may affect the willingness of the oil and gas company to enter into a lease with you, and certainly will result in some loud complaining by them. Given the amount of disruption caused by an oil and gas drilling operation, you must be aware that agreeing to allow a company to drill at any time of the year will result in an aesthetically unpleasant experience, which should be cured by the cleanup at the end of the drilling project, much like a timber harvest cleanup.

In conclusion, I want to emphasize that pre-printed leases can be amended, negotiated, and beneficial to the landowner. Carefully drafted leases can be financially rewarding to the landowner, but the points contained in this article must be carefully reviewed and the lease has to be negotiated. Don't sign a standard lease without professional advice.

David J. Colligan is a NYFOA member and partner in the firm of Watson, Bennett, Colligan, Hohnson & Schechter, L.L.P. He can be reached at (716) 852-3540.

# FORECON INC.

FOrestry - Recreation - Ecology - CONservation



Forestry Consulting Services

Timber Sales 2 Timber Management Timber & Timberland Appraisals Natural Resource Management

100 E. Second Street, Jamestown, NY 14701 (716) 664-5602 11 N. Main St., Suite 202, Cortland, NY 13045 (607) 753-3113

Visit Our Website: www.foreconinc.com

# **LANDOWNERS**

Maples, Cherry & Red Oak are in strong demand, if you are interested in selling some of your standing Timber consider...

- · Each tree to be sold is marked according to YOUR specifications.
- We send notices to reputable log producers & exporters
- Sealed bid opening determines the highest bidder
- Payment is made in advance to any harvest operation
- All harvest operations are supervised by our foresters
- We retain a security deposit until owner is completely satisfied.
- Guaranteed to net YOU the highest price for your timber.

Write or Call For A Free Pamphlet

**Robert Synowiez - Professional Forestry Consultants** 

timberland

117 W. Beecher Hill Rd., Owego, NY 13827

607/687-0460

# A Guide to Lyme Disease

#### JOAN KAPPEL

- ♦ Lyme disease has been identified in almost every county in New York State. In 1998, Dutchess County had more cases than any county in the US.
- ♦ Lyme disease in the northeast and in the upper midwest is transmitted by deer ticks (Ioxides scapularus) infected with a bacteria (Borrelia burgdorferi) that causes Lyme disease. This tick can also carry the organism responsible for Erchlichiosis. The deer tick lives throughout the northeast on grass, shrubbery, and brush, generally within 3 feet of the ground. The ticks are picked up on clothing which brushes against vegetation. After landing upon a person or animal, they crawl until they find a feeding site. Not all ticks are infected. Ticks become infected after feeding upon infected white-footed mice, white-tailed deer, other mammals, and birds.
- This asterisk (\*) is larger than the nymph stage of the deer tick, which is the stage that causes most cases of Lyme disease. The nymphal stage is most active in May and June, and it can be difficult to see or feel because of its size (pin head or poppy-seed). In the late summer, it molts into the adult stage (about the size of a sesame seed) which is more visible (however, the adult does not cause most cases of Lyme disease).
- Lyme disease can be treated easily and inexpensively with antibiotics if it is diagnosed early.
- ♦ Untreated Lyme disease can result in Lyme arthritis and neurological and cardiac abnormalities. Treatment later in the disease can be costly, and is not always effective.
- ♦ June, July, and August are the months with the highest onset of disease; February is the lowest. Children ages 5-9 years, and adults 45-54 years, have the highest reported incidences
- Two-thirds of people diagnosed with Lyme disease do not recall a tick bite.
- ♦ Almost 70% of Lyme disease victims show a characteristic "bull's-eye" rash at the bite area, usually about 7-10 days after infection. (*This means that at least 30% of victims do not show the identifying rash!*)
- Flu-like symptoms (fever, chills, headache, stiff neck, muscle aches and pains, fatigue) are common at this stage. The NYS Department of Health recommends that anyone who has been in an area at risk for tick bites who notices flu-like symptoms should consult a physician immediately.
- ♦ If an infected tick is removed within 24-36 hours of attachment, transmission of the Lyme diseasecausing organism is unlikely.
- ♦ To remove a tick, use fine-tipped tweezers, grasp the tick as close as possible to the skin, and gently pull it straight out. Do not squeeze the tick while removing it, or apply heat, oil, or anything else to the attached tick as this may cause it to inject the bacterium into the bite site. Then disinfect the bite site with antiseptic.
- ♦ Wear light-colored clothing (so that ticks can be more easily seen) with long sleeves and long pants. Tuck pants into socks, and shirt into pants. Wear a hat. Stay in the middle of paths when possible.
- ♦ DEET repellents offer some protection. They can be unsafe if misused. Use DEET sparingly and carefully, and follow the directions. Do not allow children to apply DEET to themselves.
- Permethrin can be applied to clothing but this must be done outdoors and the clothing allowed to dry for several hours before wearing.
- ♦ Examine yourself, your children, your pets, and clothing, after being outdoors. Very common feeding sites are at the back of the knee, near the hairline, or behind the ears. Check clothing for ticks frequently while outdoors.
- ♦ A vaccine, LYMErix, has been approved by the FDA. It has not been tested for very long, and it is not recommended for certain ages, nor even for all adults. Guidelines for the use of this vaccine do not suggest its use by most people, but that people such as loggers, foresters, and others who are in outdoor areas with brushy vegetation extensively might "consider" use of the vaccine.
- Precautions to avoid tick bites must still be taken by those who are vaccinated because a series of 3 shots over a year's time is required before immunity is reached, and about 22% of people vaccinated do not become immune to Lyme disease. The vaccine does not protect against other tick-borne diseases.

#### For additional information:

- ❖ American Lyme Disease Foundation, Inc., 914/277-6970, www.aldf.com
- Arthritis Foundation, 800/283-7800 or call your local chapter
- Centers for Disease Control and Prevention, www.cdc.gov. This website is especially good and has the official guidelines for use of vaccine, and excellent illustrations of the deer tick in its various stages. Go to "Health Topics."
- Cornell Cooperative Extension in your county
- County health department
- New York State Department of Health website, www.health.state.ny.us
- Consumer Reports, June 2000, pp 14-17, "Buzz Off Insect Repellent Test"

Joan Kappel is a member of NYFOA and chair of the NYFOA Editorial Committee.

# Lake George Forestry

Complete Forestry Services including:

- Detailed Management Plans
- Timber Trespass
- Timber Sales
- Appraisals
- Deed Research
- · Timber Inventory
- · Watershed Management
- Boundary Line Location
- · Tax Savings Plans

No property is too small or too large to benefit from experienced professional assistance when you are faced with important decisions regarding its use.

Contact Lake George Forestry today to arrange a free initial consultation.

Christian Gearwear, President LAKE GEORGE FORESTRY, INC.

50 Hendrick Street Lake George, New York 12845

> Tel: 518-668-2623 Fax: 518-668-2486

### WOODSMEN'S FIELD DAYS

he 53rd Annual Woodsmen's Field Days will be held on August 18-20 this year in Boonville, New York. This three-day event is filled with exciting activities for the whole family to enjoy. Every year thousands of people gather in prices. Boonville to enjoy the largest forestry promotional event in the Northeast designed to promote the forest industry and educate the public.

Mini-seminars are held throughout the weekend on topics such as "Marketing Your Timber Products" and "Working Safely in the Woods." These seminars are scheduled throughout information contact the Woodsmen's Field Days, the day and all are welcome to attend at no extra charge. There are also many exhibits that provide

an opportunity to see the latest in forest industry tools, technology and equipment at work. You will have an opportunity to purchase everything from boots and chainsaws to tractors at reduced

Other events being held throughout the entire festival include the Woodsmen's Parade and Lumberjack and Lumberjill contests. So bring the whole family for an entertaining weekend. Advance tickets are available or they may be purchased at the gate. For more Inc., PO Box 123, Boonville, NY 13309 or call (315) 942-4593.

30+ Years Experience

#### SUSAN J. KEISTER, L.L.C. **Forestry Consulting Services**

•480A & SIP Management Plans

- Forestry Inventory and Appraisals
- ·Timber Sales
- Cost Basis and Real Estate Tax **Management Advice**

(716) 728-3044

7025 Harpers Ferry Road, Wayland, NY 14572

## ROBERT DEMEREE

Professional Forestry Consultant

Timber Sales• Management Planning Tax Law • Tree Planting

> 3987 Northway Drive Cortland, NY 13045-9317

> > Telephone: (607) 753-0497

### **FOUNTAIN FORESTRY**

**Quality Management** of Land & Timber

> (518) 359-3089 (518) 668-3237

- · Timber Sale Administration
- Timber Sale Marking
- · Forest Management Plans
- · 480a Management Plans
- · Wildlife Habitat Management
- Timber Appraisals
- Expert Testimony
- · SAF Certified Foresters

FOUNTAIN FORESTRY, INC. 21 Cliff Ave., P.O. Box 1002 Tupper Lake, NY 12986

Please visit our Web site for complete information: www.fountainforestry.com

E-Mail: ffidjd@northnet.org



Custom and Stock Signs for the Forest Industry

on Aluminum and Plastic

Screen Printing Specialists

VOSS SIGNS, LLC Dept. TF, Box 553

Manlius, NY 13104-0553 Ph. I-800-473-0698

or (315) 682-6418

Call for Catalog and Free Samples

Custom Screen Printing for over 35 years

## **MAGAZINE** DEADLINE

Materials submitted for the September/October issue should be sent to Mary Beth Malmsheimer, Editor, The New York Forest Owner, 134 Lincklaen Street, Cazenovia, NY 13035, (315) 655-4110 or via e-mail at mmalmshe @syr.edu

Articles, artwork and photos are invited and if requested, are returned after use.



Deadline for material is August 1, 2000.

**SAF** Certified

MICHAEL C. GREASON FORESTRY SERVICES

(518) 943-9230 greason@francomm.com

5476 Cauterskill Road Catskill, NY 12414

# **MARKETPLACE**

NYFOA member Norman E. Murray has recorded a musical cassette, I'm a Tree and We're the Forest Families of this Country, which has been used for enjoyment and teaching in elementary schools around the country. It is a non-profit undertaking, with any profits going to Project Learning Tree. For more information or to request an order form, write U\*C Music Division, PO Box 1066, Buffalo, NY 14215. Cost is \$3.00 per tape (reduced rates available for multiple tape orders).

#### **NYFOA** Merchandise

Display your support of NYFOA—Purchase one of these items!

Member Signs Yellow Vinyl

\$4 Long Sleeve T-Shirts Ash or White

\$15

Pewter Pins

\$5

Collared Short Sleeve Shirts \$18

Patches

\$3 Ash or White M or XL

M or XL

All prices include Shipping and Handling Send your orders to: NYFOA, P.O. Box 180, Fairport, NY 14450

# ADVERTISING

Display Ads (per insert) \$7 per column inch

Full Page:

\$210 (30 column inch)

Half Page:

\$105 (15 column inch)

Quarter Page:

\$52.50 (7.5 column inch)

Eighth Page:

\$26.25 (3.75 column inch)

Marketplace:

\$10 minimum for 25 words Each additional word: 10 cents

For More Information Contact: Mary Beth Malmsheimer, Editor (315) 655-4110 mmalmshe@syr.edu

# Introducing



# **TREE PRO**'s

Miracle Tube

A seamless Tree Shelter

- Flared top.
- No assembly required.
- > 100% recycled materials.
- Manufactured in the USA.
- Reusable ties are available.

Call us when you need weed mats, mycorrhizal and controlled release fertilizer.

TREE PRO's original design is still available.

Free sample 800-875-8071

3180 W. 250 N. West Lafayette, IN 47905 treepro.com

# STIHL STIHL STIHL

Chainsaws, Brushcutters, String Trimmers Hedge Trimmers, Pole Pruners, Edgers, Blowers and Cut Off Machines

**OVER 200 UNITS IN STOCK** AT STIHL'S BEST PRICES ... GUARANTEED!

#### SAME DAY SERVICE AVAILABLE!

ALSO:

Distributor of Timber Wolf Bandsaw Blades

**AVOCA** 

**VILLAGE SALES** Toll Free (877) 566-3996

Fax (607) 566-2358

www.stihlman.com

Exit 1 off I 390, Avoca, NY OPEN: Mon.-Fri. 8am-6pm / Sat/ 8am-5pm



Non-Profit Org U.S. Postage PAID Utica, N.Y. 13504 Permit No. 566

\*\*\*\*\*\*\*\*\*\*\*AUTO\*\*5-DIGIT 14450 NEW YORK FOREST OWNERS ASSOC., DEBBIE GILL PO BOX 180 FAIRPORT NY 14450-0180

See Pages 13&14 for Fall 2000 NYFOA Conference Registration!





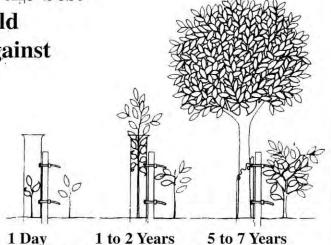
#### THE TOTAL PROTECTION SYSTEM

Because planting the trees is not the **CHALLENGE**; keeping them alive **IS!** 

TUBEX Treeshelters - Proven to be the best in over 25 countries around the world on over 100 million trees. Protect against animal browse and wind damage while creating a greenhouse environment for faster growth.

**Exclusive Distributors For:** 

VisPore® Tree Mats Right Start<sup>™</sup> Fertilizer Packets DuraPel<sup>™</sup> Deer Repellent



1 to 2 Years **Tubex Shelters vs No Shelters** 

For More Information and Pricing call 1-800-248-8239 2371 Waters Drive, Mendota Heights, MN 55120 www.treessentials.com