

The **Allegheny News**



Allegheny Society of American Foresters
Spring 1997



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The Allegheny News

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The mission of the SAF is to advance the science, technology, education, and practice of professional forestry in America and to use the knowledge and skills of the profession to benefit society.

P.O. Box 699 • Dillsburg, PA 17019-0699

Editor: Jack Winieski

Layout: Catherine Winieski Carter

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Cover Photo

Gifford Pinchot (alias Gary Hines) as he appeared at the "Ice Breaker" in Grey Towers during the 75th Anniversary Celebration and Winter Meeting of the Allegheny SAF (photo by Bob LaBar).



Chairman's Corner

By Timothy A. Kaden
Allegheny SAF Chair

To say that the winter meeting of the Allegheny Society, hosted by the Pinchot Chapter, was a huge success is an understatement!

Over 200 in attendance, thoughtful, provocative subjects and speakers, combined with excellent facilities and relatively good weather made the Allegheny's 75th Anniversary celebration truly one of the best. Many thanks to **Mike Lester**, Pinchot Chapter Chair, and his committees for putting together this technical and social opportunity. If you were not able to attend, you also missed a once-in-a-lifetime opportunity to meet Gifford Pinchot, who made an appearance at our first night's reception at his home Grey Towers (someone caught his visit on film for the cover of this Allegheny News).

If you missed the winter meeting, seriously consider attending the upcoming summer meeting at Cannan Valley, WV, August 13-15, 1997. Check the speaker list in this issue – we can all use another primer in "Media Relations."

The House of Society Delegates is leading discussions across the country about a proposal for a uniform dues rate in the full membership category -- unlike the present rate structure which escalates with years of membership. If the change occurs, however, it will not change the Chapter and Division dues structure which the national collects for these units of SAF.

The procedure for the nomination for FELLOW in the Society has been changed effective in 1997. To be nominated, the candidate must have served, and is serving, the SAF in some capacity. Emphasis is on involvement in the Society at some level.

A short note on awards. This past year, 1996, we failed to recognize any of our members for Allegheny SAF awards – or national awards. Let's not let another year go by without recognizing worthy members. Questions? Get in touch with **Bob Shipman** or a member of his Awards Committee – there's one in each of our four Divisions.

The newly initiated Student Mentor program is up and running. Division and Chapter Chairs have lists of students who have asked to be included in the program. Call the Chapter or Division Chair to request assignment to a student in your area and get involved – you'll find it's a very satisfying use of your time and effort.

Congratulations to the 1997 Student Quiz Bowl winners (WVU). Your Executive Committee again awarded \$500 to this year's winners to help defray costs involved in their trip to the National Student Quiz Bowl competition in Memphis, TN, October 4-8, 1997. △

Members and Views

Robert H. Rumpf Named Conservationist of the Year

From Pennsylvania Forests (vol. 87, #4, 1996)

Robert H. Rumpf was named the *Joseph T. Rothrock Conservationist of the Year* at the 110th Annual Meeting of the Pennsylvania Forestry Association (PFA) in Cambridge Springs, PA. Named for the "Father of Forestry" in Pennsylvania, this award is presented annually by the PFA to an individual, group, or organization that has contributed significantly to public recognition of Pennsylvania's forest resource values through practical conservation programs, applications, or other visible activities.

At the presentation ceremony the audience was reminded of the statue of Dr. Rothrock in the rotunda of the State Capitol, with the inscription, "Patriot, Soldier, Pioneer, Forester, Botanist, Sportsman, Physician, Educator, Author, Public Servant, Distinguished Citizen, Loving Husband and Father, Leader in the Conservation of our Forests and Streams ..." The PFA award is intended to recognize such traits in others who have labored in the conservation of Penn's Woods.

Bob Rumpf was recognized for 35 years of service to Pennsylvania forestry; first with the PA Bureau of

Forestry, then with The Glatfelter Pulp Wood Company where he became Vice President and General Manager. Although now retired, he continues to be active in forestry matters. He is a proponent of industrial forestry and a spokesman for responsible stewardship on industrial and private woodlands.

Bob is Past President, and has been a Director, and chairman of both the Policy and Industry Committees of PFA. His insistence on financial responsibility is well known and respected by the other members of the Board of Directors. He has served the Commonwealth as Chair of the Forest Resources Committee of the PA Chamber of Business and Industry and as a member of the Governor's Timber Conference. He continues involvement with his university, Penn State, on the Forest Issues Group, the External Committee of the Goddard Chair, and the School of Forest Resources Advisory Committee. In the local community, Bob volunteers on the Township Planning Commission, his church, and with the Boy Scouts of America. △



Joe Barnard (L) presents the 1996 Rothrock Award to Bob Rumpf.

New Jersey Division of SAF Presents Award

By Chrissy Harrigan, NJ SAF



John Benton, Jr. (L) receives the Silas B. Little Award from NJSAF Chair Craig Kane.

At the annual business meeting and breakfast in November of 1996, the New Jersey Division presented **John Benton, Jr.** with the *Silas B. Little Award* for Outstanding Service to Forestry in New Jersey.

John has served on the Executive Committee for over ten years and is the recent Past Chair of the Division. A Regional Forester with the NJ Forest Service, John directs the operation of the Natural Resource Conservation Education Center and the NJ Forest Tree Seedling Nursery. He has been an active leader and facilitator in the Project Learning Tree (PLT) international environmental education program for K-12 teachers, and the NJ Envirothon competition for junior high and high school students.

John has guided NJSAF through several Green Community Grant projects, including a SAF Forester's Fund grant to provide forestry educational materials in "tree trunks" for use by PLT trained teachers. △

More New Jersey Awards on page 8.

Ed.

Allegheny SAF Elects Fellows Gordon Bamford and Arlyn Perkey



Gordon Bamford (c) proudly displays his Fellow Award while Allegheny Chair Tim Kaden and National President Harry Wiant, Jr. look on.

In the 1996 election of the Allegheny Society, **Gordon T. Bamford** and **Arlyn W. Perkey** were elected Fellows by their peers, the highest recognition within the Society and limited to less than five percent of the 18,00+ National membership. Individuals elevated to Fellow membership must have, in the eyes of their peers, demonstrated: "strong continuing commitment through direct SAF volunteer activities, exemplary action, sustained leadership, and advancement of the forestry profession at the local, regional, national, or international level in the application of forestry, education, research, or technology transfer.

Gordon Bamford, of the New Jersey Division, received a BS in Forestry at Penn State and a MF in Forestry at Yale. After serving in the Army from 1941-1951, he was a Farm Forester with the US Forest Service for a time. He then held forestry positions in the Bureau of Forestry in the State of New Jersey and supervised programs: 1947-54, Cooperative Forest Management (CFM); 1955-61, Non-industrial Private Forest (NIPF) Lands Management; 1962-73, he became Chief of the Bureau of Forestry with responsibilities for all functions of the Bureau including coordinated silvicultural research with the USDA

Forest Service, then became State Forester and Assistant Director, Division of Parks & Forestry, Dept. of Environmental Protection, at Trenton until retirement.

Gordon holds continual membership in the SAF since 1947, and has held offices and chaired numerous Allegheny committees. Other memberships include: NJ Chapter Charter member and Chair (1957); Charter member of the NJ Forestry Association; NJ Federation of Shade Tree Commissions; Chair, Northeastern Area State Foresters (NASF); Chair, NASF Fire Prevention



Arlyn Perkey receives his Fellow Award from Harry Wiant, Jr.

Commission; Northeastern Forest Research Advisory Council; NJ State Soil Conservation Commission. Since 1975, he has been an active member of the National Ski Patrol System.

Gordon has received awards for recognition of service from the NASF and also from the National Ski Patrol for first aid training and testing. He supervised the preparation of the first State forest Resource Plan for NJ and co-authored two silviculture publication of the Northeast Experiment Station.

Arlyn W. Perkey, of the West Virginia Division served in the army from 1968-70 after receiving a BS in Forest Management at Iowa State University. He became a USDA Forest Service-Certified silviculturist in 1982. He has held timber management positions — district timber management assistant and assistant to timber staff officer— on the White Mountain, Wayne-Hoosier, and Chippewa National Forests, and forest Management specialist at the Durham, New Hampshire Station. He is presently field representative and silviculturist, Northeastern Area State & Private Forestry, Morgantown, WV.

Arlyn has been a member of the SAF since 1968 and has been a member of the WV Division Executive Committee for two terms and served on the Program Committee for the 1991 SAF Winter meeting. He received the Allegheny SAF Forester of the Year Award in 1995, and the USFS Chief's Award for Technology Transfer in 1990. He has authored numerous peer

reviewed articles, and has had articles in Forestry Association Magazines and Newsletters relating to the management of non-industrial private forest lands. He is especially noted for his research and training of foresters and land owners in the crop tree management of forest stands. △

Payne Logging Awarded MFA Logger of the Year

By Karin E. Miller, MD Forests Association Administrator

Payne Logging, Inc., was named the 1996 Maryland Forests Association (MFA) Logger of the Year at the association's annual meeting held at the Sheraton Fontainebleau in Ocean City Maryland. MFA Logger of the Year chair commented that, "Payne Logging was awarded this honor based on their long history of environmental stewardship, professionalism, and community involvement."

J. Robert Payne, President of Payne Logging, accepted the engraved plaque for the entire crew, thanking his family and employees for their dedication and continuous efforts to work as one in this family oriented business for over 18 years. **J.P. Fuller** of J.P. Fuller and Sons, Glen Burnie, presented Mr. Payne with a Poulan chainsaw.

The company is committed to safe logging practices in their daily operations and employees are encouraged to participate in safety training through the Maryland Master Logger Program. During a recent visit to one of Payne's operations, **David Wigglesworth**, Maryland Master Logger Coordinator and **Pete Alexander** of the Glatfelter Pulp Wood Company witnessed Best Management Practices (BMP's) being incorporated into the harvesting operations to prevent soil erosion and maintain stream water quality. "Payne Logging demonstrates commitment to quality logging operations," was the summary statement of both visitors.

Payne Logging company is also very active in the local community, sponsoring Little League teams and supporting the local high school Booster Club. Mr. Robert Payne, vice President, has taken time to inform other loggers about new drug testing regulations as part of MFA's information seminars. He has also taken an active role in enhancing industry perception, even to the extent of taking time to explain forest management practices to onlookers at job sites. △



1996 MFA Logger of the Year is awarded to Payne Logging owner and President J. Robert Payne and his son Robert D. Payne (center) by Daniel Rider, Logger of the Year Committee Chair, while MFA Past President H. Edward Yates (L) looks on.



All winners — members of the four competing forestry schools.

WV Students Win 1997 Student Quiz Bowl

By Kim Steiner, Allegheny SAF Student Coordinator

The Tenth Annual "Student Quiz Bowl", held in conjunction with the 75th Anniversary meeting of the Allegheny SAF, at Matamoras, PA, was won by the West Virginia University Team of **John Stephens**, **Jonathan Spink**, and **John Mowrey**. As always, the student competition drew an enthusiastic crowd, held just prior to the annual banquet this year, February 13th.



Dr. Kim Steiner presents 75th Anniversary slate coasters to Student Bowl Winners John Stephens, Jonathan Spink and John Mowrey.

The West Virginia team won in the final round over the winning team of the Associate Degree Division, Penn State Mont Alto's **Ryan Flegal**, **David Ruyak**, and **Greg Shope**. WVU will receive an engraved trophy plaque commemorating this year's championship.

Other team entries included Maryland's Allegany College team of **Alex Fignar**, **Robert Kegg**, and **Brett Smiley**, and Penn State University's **Larry Bragg**, **Erin Smith**, and **Thankful Suders**. Congratulations to all 12 student participants who took time away from busy class schedules to attend and compete. Thanks also to **Tim Kaden**, **Harry Wiant**, and **Jack Winieski** for officiating the event. △

West Virginia Division Winter Meeting

Dave McGill, Research Scientist, Westvaco Corporation

On January 30-31, 1997 the Winter Meeting of the West Virginia Division of the Society of American Foresters in Charleston, WV featured two themes: 1) Forest Ecosystem Changes: Past, Present, and Future, and 2) Coping with the Big One: Strip Mining.

Bill Maxey (West Virginia State Forester) reviewed the results of the latest WV forest inventory. He noted that in 1949 the state's sawtimber inventory was less than 18 billion board feet and has grown to almost 76 billion board feet. West Virginia's forests are still growing 34% more volume than is lost to land use changes, insects, pathogens, droughts, ice storms, and harvest combined.



Bill Maxey

David Van Lear (Clemson University) summarized the disturbance history of the southeastern United States and the effects that disturbances, particularly fire, have on vegetation dynamics. Fire, used as a management tool, has practical applications for restoring some vegetation types like red oak and longleaf pine.



David Van Lear

Patrick Brose (Clemson University) gave an example of a practical application for fire. He shared his recent success with oak regeneration using a shelterwood/burn prescription. The prescription they have had success with to regenerate oaks is: 1) carefully shelterwood cut, 2) wait 3-6 years to permit oak seedfall and root development, and 3) dissipate fuel load, clear out around residuals, and burn during the growing season.

In one of **Dr. Andy Egan's** (WVU) harvesting-related studies, he asked landowners and foresters similar questions to see if they matched perceptions. On the "banning of clearcutting," 96% of the foresters disagreed, while only 45% of the landowners disagreed. The take-home message from this study was "landowners aren't always thinking what we're thinking." Other speakers that afternoon, many from the West Virginia Division of Forestry, spoke on fire suppression, the acquisition of a new single engine aircraft tanker, and coal seam fires.

Following the banquet dinner, **Ray Hicks** (WVU) told of his recent social and forestry experiences in Ireland. While in Ireland, Ray not only saw many old and mysterious stone relics, he also met a couple of guys who had discovered 4000-year-old logs in a peat pit—a rare piece of Ireland's forest history!

The second day of the meeting was devoted to the discussion of strip mine reclamation. According to **Darcy White** (Inspection Enforcement Supervisor, WV Department of Environmental Protection), coal companies are "interested in getting done and getting out of there." Coal companies have to put land back into what the landowner wants it to be.

"Historically," she added, "landowners haven't been all that interested in outcomes." If people are really interested in reforestation for mine reclamation, then they need to get involved at very early stages of the permitting process; what we see on a newly reclaimed surface mine is

something that was started five to ten years ago.

John Torbert (Mead Paper Corp.) spoke on "Creating Productive Forest Sites on Surface Mined Lands." While we were amazed at the simple technology that, with proper planning, permits good growth of trees on reclaimed strip mines, John said that all of the information was known 20-30 years ago. John recommended four steps to successful mine reclamation: 1) select the best overburden (brown sandstone), 2) avoid compaction, 3) use reforestation ground cover (low plants), and 4) plant trees carefully.

Jim Burger (Virginia Tech) explained that in natural systems, colluvial deposits (rock and soil that accumulates at the foot of a slope) are usually the most productive sites for trees. By extension, when properly done, strip mine reclamation has the potential to improve a forested site. Placing desirable and uncompacted over-burdens can be comparable to the good tree growth medium of colluvial deposits.



Jim Burger

The day was filled with many speakers sharing perspectives of strip mining and successful reclamation within and outside West Virginia.

The Winter Meeting of the WV Division of the SAF brought over 70 members up to date on both the status of West Virginia's forestry community and forest resources. It also opened our eyes to seemingly inexpensive and simple techniques that can improve tree productivity on reclaimed strip mines, if careful planning is implemented. △

Allegheny SAF Summer Meeting

Canaan Valley Resort & Conference Center

August 13-15, 1997

"We Know What We're Doing - Why Doesn't Anyone Else?"
OR
"Media Relations for Foresters"

Here's that topic again... maybe we really ought to listen this time. Perhaps we have listened but failed to be inspired enough to act; or have acted in a manner creating more confusion than clarification. Well, here's another chance for us to get a better background to answer the "Why" question and respond effectively when explaining our position on forestry issues - with language and information that is understandable to the public.

Robert Bidinotto will keynote the presentations with more practical advice for resource managers. He is the former Readers Digest staff writer who wrote the Alar apple scare and global warming articles, Mixed Messages: Who's Really Communicating the Wildlife Story and The Green Machine.

Alston Chase, author of Playing God in Yellowstone, will relate his experiences following the "environmentalist evolution... an example of a movement gone wrong." He left a distinguished teaching career that had taken him from Princeton and Ohio State Universities to Chair of the Department of Philosophy at Macalester College, and has been writing and speaking out on environmental issues ever since. "The lesson in "Playing God" is that there is no such thing as leaving nature alone. People are part of creation. We do not have the option of choosing not to be stewards of the land. We must master the art and science of

good stewardship. The environmentalists do not understand that the only way to preserve nature is to manage nature."

Elizabeth Pease, Director of Public Affairs, of the National Hardwood Lumber Association will be the banquet speaker and bring us up-to-date on *Current Issues on the National Scene*.

Luke Popovich, Vice President of Smith & Harroff, Inc., a public relations firm will challenge us. Mr. Popovich, a journalist who spent 11 years with the American Forest & Paper Association (AF&PA) as manager of public affairs and issue advertising, contributed to the AF&PA American Tree Farm Program winning the Silver Anvil Award from the Public Relations Society of America.

And finally, a panel of newspaper, magazine, and radio and TV representatives, including editors, reporters, columnists and freelance writers will be available to give advice and answer questions. You can't miss this one if you are at all interested in improving your abilities to discuss current forestry issues with the public and the media in a more effective way. It's a chance to associate with some of the most informed resource managers in the northeast and accumulate many CFE credits too! △

Allegheny SAF Winter Meeting

'97 Exhibitors... Thank You!

Better Forest Tree Seeds:

Representative Ed Palpant

Producers of selected and genetically improved seed trees. We procure and provide quality tree seeds internationally (quality must precede quantity). Over 45 years experience in the field.

Foresters Incorporated:

Representative Davis Wildman

Foresters promoting better forest management by providing the most advanced tools and techniques for natural resource managers. Providing forest inventory design and processing, field computer software and hardware, and GPS equipment and services.

Paravant Computer Systems, Inc.:

Representatives Ralph White & John Moussiaux

Manufacturers of rugged outdoor computers for military and commercial clients. Offering RHC-44E handheld computer with EASYDC Universal Data Collection software... the only software you will need for most forestry applications.

Sustainable Forestry Initiative:

Representative Ken Manno

The sustainable forestry initiative (SFI) of Pennsylvania provides training and educational programs for timber harvesters, foresters and forest landowners. △

Carol Burd, of the Allegheny National Forest, Marienville, PA was the winner of the \$50 cash drawing of those who had their Exhibitor Card validated by all of the above exhibitors.

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Streambank Stabilization Along Town Creek in Maryland

By Dan Hedderick, MD DNR Forest Service



Maryland DNR and NRCS employees work side by side liming and seeding a portion of streambank in the Town Creek Watershed.

One of the challenges in the Ridge and Valley Physiographic Province of Allegany County, Maryland is the lack of flat land for farming. Most of the flat areas for farming in the Town Creek Watershed are in the flood plains along streams. Establishing a 100 foot buffer along these streams in farm fields sometimes proves to be economically and possibly environmentally impractical. One farmer was quoted as saying, "If regulations were ever to require us to plant large buffers along our streams, we would be forced to sell out to a developer. Then what type of environmental problem would you have when 100+ homes are built on the farm?"

Nevertheless, practical planning and partnerships can provide benefits to both farmers and the environment. The floods during the early portion of 1996 caused many problems for area residents but opportunities were also created. Allegany Soil Conservation District (SCD), United States Department of Agriculture, Natural Resources Conservation Service (NRCS), and the Maryland Department of Natural Resources (DNR) Forest Service teamed up with a local farmer to

demonstrate ways to restore streambanks with natural materials on Murleys Branch, which is a tributary to Town Creek.

A 1400 foot section of streambank along Murleys Branch was stabilized using several techniques. Heavy equipment made the slope of the streambank a gentler grade with stone placed at the tow of the slope. Above this, fascines were placed in a shallow trench parallel to the stream. Fascines are bundles of live Streamco willow branches and red osier dogwood plant materials. The fascines were then staked in place and covered with soil. The Rest of the streambank was later seeded and covered with erosion control fabric. Afterwards, this fabric was secured with live Streamco willow stakes. These stakes were also placed at random from the water's edge to the top of the erosion control fabric. Root wads were also used in the stabilization of the streambanks.

The streambank improvements will help minimize erosion, provide riparian wildlife habitat, increase water quality and allow the farmer to continue growing crops with only a

15 foot wide buffer. After hurricane "Fran," the project only suffered small areas of undercutting, but no net loss of plant materials occurred, making it a success. Other landowners have successfully planted 50 foot wide buffers with hardwoods in other portions of the watershed through various incentive programs.

Concern over interior stream design and structures to provide fish and related aquatic life habitats have been expressed. Murleys Branch emerges from a limestone cavern and its headwaters provide the only established native trout population in the Maryland portion of the Town Creek Watershed. With proper improvements, the entire Murleys Branch could support a native trout population down to Town Creek. In future projects, the MD DNR Forest Service hope to maintain our partnerships with SCD and NRCS and include DNR Fisheries and DNR Wildlife to have the greatest diversity of knowledge on hand when making improvements in the watershed.

One of the Town Creek Steering Committee's objectives is to encourage maintenance and improvement of natural resources. The goal is to implement an ongoing, comprehensive study of the Town Creek water quality. Luckily, the data from MD DNR Fisheries, Allegany County Health Department and the MD Biological Stream survey will provide the chemical, physical and biological information they are looking for without trying to "reinvent the wheel." Now practical, voluntary projects with community assistance are being considered by the Town Creek Steering Committee, Landowners Association and Technical Advisory Committee. These groups makeup the Town Creek Ecosystem Management Team. △

**Contact Allegheny
News Editor Jack
Winieski by e-mail:
ansaf@paonline.com
Next newsletter
deadline is
June 15, 1997**

Penn Nursery: 75 Years of Growing Forest Tree Seedlings

By Alex Day, Nursery Operations Manager, DCNR, Bureau of Forestry



The Department of Conservation and Natural Resources (DCNR), Bureau of Forestry Penn Nursery, located along Pennsylvania Route #322 in the Seven Mountains area of Centre County continues to grow millions of forest tree seedlings each year — and has for 75 years. There's a lot of talk about sustainability in forestry practices these days, here's another proof at the seedling level. Only with understanding and proper management techniques could such a practice be sustained — a tribute to the many dedicated nurserymen and staff workers, maintaining site productivity over those many years.

Begun in 1922 as a small transplant nursery, the first trees grown at Penn Nursery were planted along state highways to provide shade. By 1925, trees grown at this little-known nursery were being used for reforestation purposes on state forest lands and also sold to Pennsylvania land owners for the same purpose. The policy of providing inexpensive tree seedlings to PA land owners, for reforestation and soil stabilization purposes, continues today. State Forester, **James Grace** says that, "Penn Nursery has had a quiet, yet vital existence, helping augment Pennsylvania's vast natural forest system."

While conifer seedlings were grown exclusively in the beginning years, current nursery production is about evenly divided between evergreens and hardwoods. "We concentrate on growing quality seedlings. Our annual production and species mix is designed to meet the need of our state forest land district managers, as well as those of private woodland owners," says **Alex Day**, Nursery Operations Manager. Present annual production is targeted at 2.5 million seedlings, some having grown one year from seed and others requiring two years in the seedbed before developing into plantable stock.

DCNR's Penn Nursery can claim several outstanding firsts in its 75 year history. The first large scale production of bare-root hardwood seedlings was achieved by the Bureau at Penn Nursery. Production of over a dozen different native hardwood tree species continues today, including such well known favorites as black cherry, white ash, sugar maple, black walnut, and butternut. The Bureau's first forest tree seed orchards, developed by former geneticist **Jack Winieski** and the Penn Nursery staff beginning in 1962, are now producing the first crops of tree seed to be certified under the Pennsylvania Tree Seed Certification Law. These genetically specific seed sources are used to grow seedlings of white and Virginia pines, Norway Spruce, Japanese larch and black cherry.

An off-season sideline of producing picnic tables for state parks and state forests, which began in the 1950s, has turned into a major operation at Penn Nursery. Today, the nursery staff — in addition to growing trees — produces 2,000+ picnic tables each year and hundreds of wooden signs, plaques, and special displays for state forests and parks.

In recognition of its 75th Anniversary, Penn Nursery will hold an open house on May 10, 1997. The public is cordially invited to drop in and view the facilities. △

Glatfelter Chairman Dies

Philip H. Glatfelter III, chairman emeritus of the P. H. Glatfelter Company of York County, PA, died recently at the age of 80. Glatfelter was instrumental in the development of Codorus State Park in the 1960s.

The creation of Lake Marburg at Codorus was the first cooperative project of its kind between the State of Pennsylvania and private industry, designed to serve as a water supply of Glatfelter and the recreational needs of the community. P. H. Glatfelter Company constructed the earthen dam for \$5.5 million. The dam impounds water from Codorus Creek to form the 1,275-acre lake Marburg, the main attraction at the park. Over the years, Glatfelter continues to be involved with the park and its improvements. △

The German Forest Today and Its Agricultural History

By Florian Judmann, Diplom-Forstwirt, Institut Fuer Forstpolitik, University of Freiburg, Germany

Germany covers a land area of about 138,000 Square miles, with 30% of that area in forest cover, and 46% of forest ownership belonging to about 1,250,000 private owners.* The remaining 54% of the forest is in public ownership — 33% in State forests, 20% in town/community forests, and 1% in National forests.

Today there are about 60 native tree species, 40 of which are considered of economic interest. Many other tree species are believed to have disappeared during changes associated with the ice ages. The natural forest would have been dominated by the climax mix of European beech, *Fagus sylvatica*, and Durmast oak, *Quercus petraea*, covering over 75% of the land, with conifers only at higher elevations. Today, due to the long influences of man, the natural forest area has been reduced and heavy utilization and planting activities have changed the relative composition of forest species. At present, 70% of the German forest is in conifers: 50% Norway spruce, *Picea abies*, 15% Scotch pine, *Pinus sylvestris*, and 5% other species. The 30% in deciduous hardwoods is composed of 22% beech, *F. sylvatica*, 7% oak, *Q. petraea*, and 1% other hardwood species.

In modern Germany, the major forest contribution is in the form of a wood supply to the national and international economy, as well as, environmental protection, and the opportunities for recreational experiences. However, up until the 19th Century, the use of what has been called "minor forest products" had a high priority forest use, and in many areas wood production was excessive.

Historic Agricultural Uses of Forest

Mast for Pigs: During the Middle Ages, pigs were a major source of food, and pigs were driven into the forest to feed on the hard and soft mast provided by forest trees. Trees were classified as fertile, for the purpose of defining desirable mast species, *ligna fructifera* = useful for mast (oak, chestnut, walnut, and fruit trees) or infertile, *ligna infructifera* = not useful for mast (mostly conifers and deciduous softwoods).

Silvicultural treatments of these stands, owned by local rulers and often rented as mast pastures, involved thinning to develop large crowns for mast production. Income from renting woodlots for this purpose often exceeded that for timber sales. With the introduction of the potato and the establishment of stall-feeding during the 1700's, the use of the forest for mast production lost its meaning.

Forest Pasture for Cattle and Horses: The use of the forests for pasturing cattle and horses dates back to ancient times, and was allowed in deciduous as well as coniferous stands. Unlike the mast pasturing for pigs, the grazing of cattle and horses always caused damage in the form of ground compaction and the browsing of regeneration and was very early recognized as a problem. Pasture use was then limited to certain stands and to certain times of the year in order to enable the forest ecosystem to recover. Changes came in the 18th Century with changes in farming practices. Certain areas of agricultural farmland were planted to clover and lucerne, which could be pastured or the hay harvested for cattle and horses.

Forest Litter Utilization: The development of agricultural pasture land and the change to stall-feeding eliminated the use of the forest for pasturing animals and opened the door for a greater utilization of forest litter. During and after the 30-years war (1618-1648), farmers began to use forest litter in the stalls, later removing it and applying it to their fields as fertilizer. Stall-feeding cattle continued through the 18th Century and led to high demands for litter. Scientific knowledge was not sufficiently developed in the middle ages, and the use of forest litter continued, leading to the loss and degradation of soil and the resulting poor growth of trees.

In the wake of excessive forest litter removal and the resulting soil loss and productivity, afforestation with conifer species was favored on the sites. From an historical point of view, the transformation of growing stock might

have even been necessary in order to keep up stand volumes. However, in most parts of Germany, conifer stands are more vulnerable to insects, wind storms and snow damage than deciduous species. Therefore, the economic risk of conifer stands is higher; a fact many private and public forest businesses are struggling with today in Germany.

Agro-Forestry: Agro-forestry consists of two different components of land uses. One is the use of the forest site to grow the desired forest tree species for fuelwood and timber; the other is the use of the same site for the growth of agricultural crops for a time period until the harvest of forest products and regeneration of the stand. Agro-forestry developed between the 11th and 14th Centuries as populations increased. It developed mainly in the mountainous regions where the narrow valleys limited the agricultural space, and forests served also as farming areas. Usually the forest was harvested by clear cutting, the debris burned on site and the ash plowed into the ground as fertilizer. Then the field was farmed until the soil began to lose the capacity to grow crops at which time trees were interplanted among the agriculture crops and regeneration of the stand begun.

There was very little planning in this system and trial and error was the teacher; sites deteriorated with regard to timber growing and in the 15th and 16th Centuries, laws were established to control this combination of agriculture and forestry. In some mountain areas of Germany, agro-forestry was practiced until the Great Depression and the years after World War II. A combination of natural succession and planting on these abandoned agro-forestry sites led to the establishment of forest cover. In order to keep the typical landscape, agro-forestry became an issue of regional planning and the tourism industry in recent years. Local programs were started which reintroduced traditional agro-forestry to many sites. The practice is carried out today for aesthetic and tourism reasons rather than for purposes of food and wood production. (See bibliography on page 21) △

PA State Forest Lands in Landmark Study

Pennsylvania, along with Minnesota, has been selected as the first states in the nation to undergo an independent review of management practices on a portion of their public lands to determine if they meet certifiable standards of sustainable forestry. Obtaining certification by an independent third party would give Pennsylvania's public forestlands a rare marketing advantage in providing wood raw materials to forest industries which meets consumer demand for wood products that originate from a certified, sustainably-managed forest system.

DCNR Secretary John C. Oliver has commented that, "This is a landmark occasion for Pennsylvania. The results of this review will likely serve as a national model for future public forestlands management."

Sustainable forestry is a concept for managing renewable forest resources, which means different things to different people. Simply stated, the goal is to ensure that future generations have the same abundant forests and related values that we have today.

Keeping forest land in a productive and renewable state to provide the commodity and non-commodity values for society, now and in the future

(sustainability), has always been the goal of scientific forest management ("... the greatest good for the greatest number in the long run."). On-going conflicts arising from real and perceived societal fears for the sustainability of forest values has, however, caused elements in and out of the forestry community to question whether this goal is being met. A system of comparing agreed-upon principles and implementation guidelines to those existing on a managed forest property, by an independent third-party, has been suggested as the basis for a forest certification process to assure a level of sustainability and address these fears.

An organization comprised of environmental, social, and forest products industry interests formed the Forest Stewardship Council (FSC) in 1993 to address society's concerns. The Council established guidelines for evaluating forest management practices to be used by FSC-accredited certifiers. Currently there are only four FSC-accredited certifiers worldwide. The two U.S. certifiers are the Smartwood Program of New York and Vermont, and Scientific Certification Systems (SCS) of San Francisco,

California. SCS has certified 10 projects worldwide, including forest systems located in regions of Central, South and North America, and northern Europe. In Pennsylvania, the forest lands of Kane Hardwoods received certification from SCS in 1995.

SFC is the accredited certifier that will be conducting a comprehensive evaluation of the sustainability of forest management practices on a 1.2 million acre sample of state forest lands located in northcentral Pennsylvania. Certification would only apply to the sampled acreage; there are 2.1 million acres of state forest lands. After peer review and comments, the SFC review team is expected to submit a final report to DCNR by late spring.

The funds to undertake this project will be provided by several private, non-profit foundations located in the U.S. Many of these foundations have developed a track record in awarding grants to domestic and international projects which have furthered work in sustainable natural resource and forest management practices. △

Parts extracted from PA DCNR News Release 1997/3 Ed.

New Jersey SAF Division Presents Student Awards

By Chrissy Harrigan, NJ SAF

The *Elwood B. Moore Award* for Academic Scholarship and Significant Contributions to Forestry was presented to **Bronson Bullock** and **Christopher Martine**, both of whom are Rutgers forestry students. Usually this award is given to one student, however, the competition was so close this year that the award was shared by the two top students. Bronson was recognized for a completed honors project which assessed the regeneration potential of oak in the Pinelands. As Editor of the Cook College newspaper, Christopher developed a column specifically related to the discussion of current natural resource issues. Both students hold high grade point averages. △



Bronson Bullock and Chris Martine proudly display their awards, just received from NJ Division Chair Craig Kane.

75th Allegheny SAF Meeting

By Mike Lester, 75th Allegheny SAF Celebration Chair & Allegheny SAF Forest Science Chair

Two hundred and eleven foresters converged on Matamoras, Pennsylvania for the historic 75th Allegheny Society of American Foresters Annual Meeting, February 12-14, 1997. The theme, *From Pinchot to the Present and Beyond, A 75th Anniversary Celebration*, referred to the founding of the Allegheny SAF in 1922 by Gifford Pinchot and 18 other foresters. Appropriately, the Pinchot Chapter hosted the meeting.

The event kicked off on the 12th with tours of Grey Towers, Gifford Pinchot's ancestral home in nearby Milford, PA. Later that evening the Pinchot Chapter and the Pinchot Institute hosted a reception at Grey Towers organized by **Ed Brannon** and **James Kimkeo**. As foresters arrived for the evening, the stately towers of the Pinchot home were bathed in lights and a covering of new snow. In the midst of the reception, Pinchot himself (in the body of Gary Hines) walked in and greeted all with a few choice words about the profession, and then ascended the stairs "to do a little more work before retiring."

The Allegheny SAF Executive Committee were privileged to conduct their annual meeting in the second-floor

meeting room, then returned to Matamoras for the night.

John Gordon, Pinchot Professor of Forestry at Yale University gave the keynote address the following day. Among the speakers for the day and one-half was current SAF President, and former Chair of the Allegheny SAF, **Harry Wiant, Jr.** In addition, four former SAF Presidents presented papers consistent with the theme: **Jane Difley**, **John Moser**, **Art Smyth**, and **Ross Whaley**. **Bill Banzhaf**, **John Fedkiw**, **John Heissenbuttel**, **Jim Finley**, **Jim Grace**, **Wayne Hoffman**, **Susan Stout**, and **Valerie Luzadis** addressed theme topics, ranging from history, to current issues, to visions of the future. Speakers hailed from academia, government and non-governmental agencies, industry, private consultant businesses, and environmental groups.

John Bitzer emceed the banquet which featured a 75th Anniversary cake cut by the current and several specially invited past Allegheny Chairs: **Wilbur E. Wolfe, Jr.**, **James Nelson**, **Kenney P. Funderburke, Jr.**, **Ronald Sheay**, **Robert LaBar**, **Harry Wiant, Jr.**,

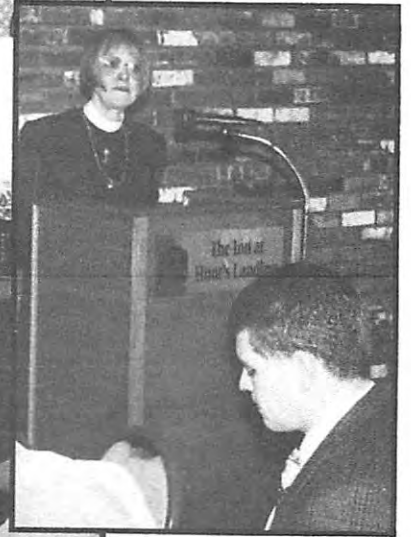
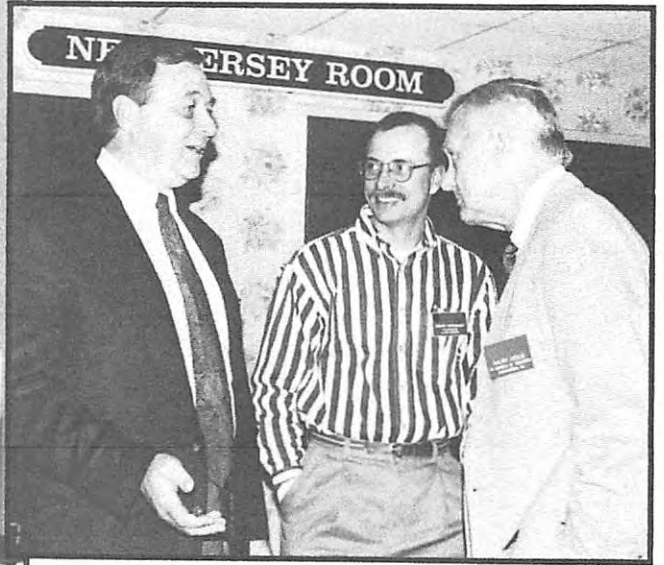
Mark Vodak, and **Tim Kaden**. After dinner, **Ross Whaley** presented his thought-provoking view of forestry in the global context.

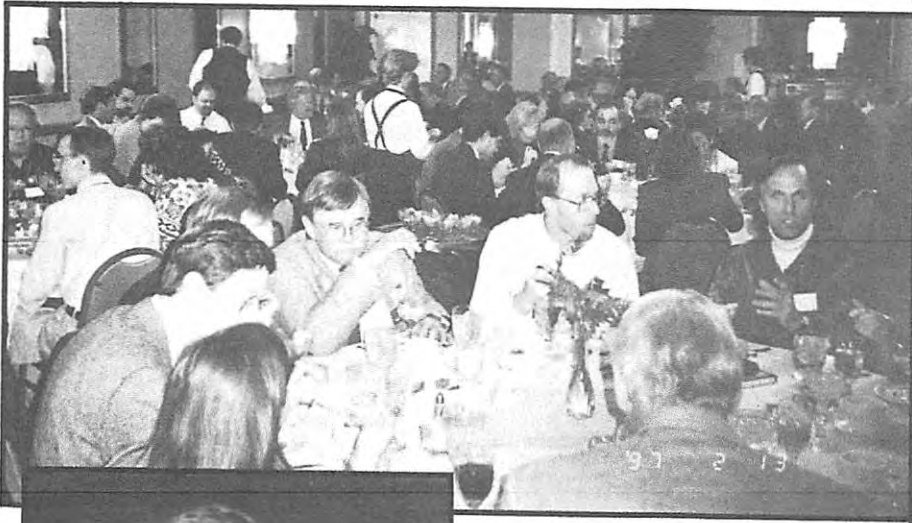
The annual Chair's prayer breakfast was well attended and the Reverend **Ginny Sheay** related a tree analogy that caught the imagination of those choosing to attend; the Pennsylvania breakfast meeting provided a forum for that Division to conduct its annual business.

A snow and ice storm on the evening of the 13th did nothing to the enthusiasm of those in attendance on the morning of the 14th. The meeting's final speaker, SAF President **Harry Wiant, Jr.**, received a standing ovation after his remarks. **Mike Lester**, Meeting General Chair, then thanked his Organizing Committee members for the excellent work in bringing the meeting to a successful conclusion: **Mark Deibler**, **Bob LaBar**, **Al Knox**, **Jack Winieski**, **Tony Santoli**, **Dana Dowling**, **James Kimokeo**, **Jim Soltis**, **Tony Cardwell**, **Terry Boos**, **John Bitzer**, **Dick Carey**, and **Tim Kaden**. Finally, Allegheny Chair, **Tim Kaden** then closed the meeting – all agreed that it was a worthy celebration of the Allegheny SAF's remarkable 75 years. △



Photo by Bob LaBar





Photos by Alex Day,
Bob LaBar and Jack Winieski



Reginald Forbes Art Show & Contest

75th Anniversary Meeting of the
Allegheny Society of American Foresters
February 12-14, 1997 • Matamoras, PA

By Charles Newlon, Chair, Communications & Reginald Forbes Art Director

Twenty four entries by fifteen talented artists from the New Jersey and Pennsylvania SAF Divisions competed in the Reginald Forbes Art Show contest. Surely there are talented artists in the West Virginia and Maryland-Delaware Divisions, don't you think? We are sure to find out next year.

Winners: Professional Category

1 st	3-Dimensional Art	Ronald Harrigan (NJ)	Model rowboat, equipped for crabbing
1 st	Sculpture	Tom Birch (PA)	Pile of Baby Wood ducks carved from one piece of tupelo
1 st	Flat Art	David L. Aumen (PA)	Acrylic painting of "White-tailed Buck Bedded in Snow"
2 nd	Flat Art	Dennis Galaway (NJ)	Color photo of Maine Coastline
3 rd	Flat Art	Dennis Galaway(NJ)	Color photo of a Sunset

Winners: Amateur Category

1 st	3-Dimensional Art	Alan R. Knox (PA)	Wood Pen & Pencil Set in American Chestnut
2 nd	3-dimensional Art	George R. Cline (PA)	"Celtic Knotwork Carved on Black Oak Disc"
3 rd	3-dimensional Art	Chrissy Harrigan (NJ)	Weaving of wool & fabric in circular wood frame
1 st	Sculpture	Bob LaBar (PA)	Irish Setter carved of black cherry
2 nd	Sculpture	Bob LaBar (PA)	Tiger carved in wood and painted
1 st	Flat Art	Richard Cary (PA)	Color photo "Reflections on the Past" framed in barn wood
2 nd	Flat Art	Shirley Waskiewicz (PA)	Pastel "Canoe Launch at Middle Saranac Lake"
3 rd	Flat Art	Suzanne Simoni (PA)	Line drawing of Victorian Home

Other Honorable Entrants

Special thanks to the other talented Art Show entrants: **Charles Barden, Dan Kucera, and Greg Huse** for their photography; **Coreen Sheridan** for her tole paintings. △

For an extension of the information presented by Dr. John Fedkiw at the Winter Meeting in Matamoras, consider ordering his book, "Managing Multiple Uses on National Forests, 1905-1995: A 90-year Learning Experience, and it Isn't Finished Yet." The book is a grassroots account of forest management on National Forests, and produces its own definition of forest resource management. To order, contact Denver James at (202) 205-0885.

Reginald D. Forbes, a True Gentleman, Professional Forester, and Talented Artist

By Charlie Newlon, Art Show Chairman & Allegheny SAF Communications Chair

The art show and contest, a longtime feature of each Winter Meeting of the Allegheny SAF, is dedicated to the memory of Reginald D. Forbes. Mr. Forbes was known by his contemporaries as "Reggie," as a gentleman forester, and as a forester of the "old school." He was always well dressed, wore a bow tie, and even in the field he looked professional.

His professional credits were many. As a USDA Forest Service forester, he was the first Director of the Southeastern Forest Experiment Station, and later the Director of the Northeastern Forest Experiment Station. He was also the Chairman of the Allegheny SAF in 1931.

Reginald Forbes edited the first edition of the *Forestry Handbook* for the Society of American Foresters, published in 1955, and editor of *Woodland Ownership for Pleasure and Profit*. He was a stickler on writing, for the proper use of the English language, and for proper use of the microphone.

"Reggie" died in 1977, and in 1979 the Allegheny SAF dedicated an 80' tulip poplar tree to his memory in Penn's Woods Memorial Forest at the Bowman's Hill Wildflower Preserve, in Washington Crossing State Park, PA. The Forbes family donated funds to continue to encourage SAF members and their families to pursue their artistic talents through annual competitions.

I urge all members to begin now to promote the Art contest to be held at the 1998 Winter Meeting. Search for those photos that all foresters take; and those carved objects and paintings that you or a member of the family created. Encourage your family to participate. Surely all Divisions of the Allegheny SAF will be represented in New Jersey next February. △

Court Rules Rural Communities Destructive to National Forests

From Forest Landowner (Jan/Feb '97, p.30)

A three-judge panel of the U.S. Court of Appeals for the Sixth Circuit issued a decision on January 21 with serious ramifications for management of the national forests. *Sierra Club v. Thomas*, F.3d (6th Cir. 1997). In a direct attack on the professionalism of the Forest Service, the court overturned the forest plan for the Wayne National Forest in Ohio, finding that the Forest Service is biased toward rural communities in the vicinity of national forests and, "the resulting dependency of these communities on timber production causes over-harvesting and destructive harvesting methods." The court also concluded that the Forest Service uses clearcutting, an "expensive ... technique," to maximize its budget and makes planning decisions that benefit the agency's "fiscal interest" rather than the public interest.

In the course of the decision, the court found that even-aged management should only be used in "exceptional circumstances," a conclusion expressly rejected in a well-reasoned decision of the U.S. Court of Appeals for the Fifth Circuit in 1995. The Sixth Circuit then concluded that the Forest Service, by retaining even-aged management as an option under this forest plan, was arbitrary and capricious. The court seemed to believe that the Wayne National Forest should be managed primarily for hiking and fishing, rather than multiple uses, an approach which other federal circuit courts have noted is normally reserved for national parks. One of the judges, although agreeing with the result, stated in a concurring opinion that she found the "undocumented broadside against the Forest Service" to be inappropriate.

In the only portion of its decision based on precedents, the court ruled that the plaintiffs have suffered a concrete injury from adoption of the plan. However, in its analysis of this question, the court ignored the decision by two other federal circuit courts which held that adoption of a forest plan makes no site specific decisions and therefore causes no immediate injury. For more information, contact Chip Murray at (202) 463-2782. △

Maurice K. Goddard: His Life, Legacy & Lessons

The Second Pennsylvania Environmental History Symposium will reflect on and explore *Goddard – The Man and His Life* – and highlight his accomplishments, which were a key part of Pennsylvania's legacy of environmental resource conservation in the latter half of the 20th Century. The agenda includes presentations by a variety of speakers who worked with Dr. Goddard: confirmed speakers include Peter Duncan, Caren Glotfelty, James Seif, Leonard Green, William Middendorf, Larry Schweiger, and Eileen Graham.

Deadline for registration is April 10, 1997. For more information, see "Coming Events" on page 24. △

Maine Legislative Update

By Bret Vicary,

(via the James W. Sewall Company's Web Page)

The Maine Supreme Judicial Court declined to issue an advisory opinion on how the Maine Legislature may respond to the outcome of last November's forest practices vote. It now appears that the Compact for Maine's Forest referendum, which captured a 47% plurality last November, and in doing so defeated the citizen-initiated Green Referendum to ban clearcutting and severely limit other forestry practices, will be voted up or down this November.

Efforts to move the vote forward to June were recently thwarted by the legislature. Meanwhile, some eighteen bills have been sponsored in this session of the legislature which would, directly or indirectly, affect forest management practices. Measures that potentially conflict with the upcoming Compact vote will have to be deferred to a date after November. Some legislators, who feel that there is too much deception being practiced by those gathering petitions, have introduced bills to make the referendum petition gathering process more responsible.

The Compact represents an attempt by industry, private landowners, and environmental groups to reach a consensus on Maine forest practices. While the state's largest landowners remain committed to the spirit of the Compact, it remains unclear whether the consensus in support of the Compact will hold together for this November's vote. △

President Wiant Testifies on Forest Health

Speaking as President of the Society of American Foresters, **Harry Wiant, Jr.** testified before the House Resources Subcommittee on Forests and Forest Health on March 18, 1997, chaired by Idaho Republican Helen Chenoweth. **Michael Goergen** and **Fitz Elder**, of the National SAF office, accompanied Harry and wife Jeanne to Capitol Hill.

Stating that forest health is an informal and technically inexact term, he reported that SAF had concluded that an assessment of forest health requires an understanding of both the conditions of the forest and the objectives of management. In addition, he rejected the notion of a single national prescription for America's forests stating that forest health problems must be addressed on the local level – managed locally.

Testifying separately as a private citizen and forester, Wiant expressed his conviction that: 1) A well-managed forest, with management addressing landowner or societal objectives, is the healthiest possible, and 2) In an unmanaged forest, there is no opportunity to address declining health. An analogy between the management or lack of management of his own health and that of a forest stand, was well received by all but one individual representing an extremist faction who could not believe the arrogance of someone saying that "a managed forest is better than God can do." △

Forestry in the Global Context

By R. S. Whaley, President, State University of New York College of Environmental Science and Forestry*

One must feel uneasy when asked to give an after dinner speech following a whole day of speeches by people whom I consider to be my teachers (**Bill Banzhaf, Jane Difley, Art Smyth, John Gordon, John Fedkiw, John Heissenbuttle, John Moser**). Any comments I make undoubtedly will include ideas which I stole from one or another of them. On top of that I was asked to give the same presentation that I gave at the SAF annual meeting, only make it briefer. If it is the same speech but briefer I think that means I have to talk really fast. Well here goes.

We as a profession of forestry can have a significant impact on how our forest lands are managed to meet emerging demands placed on them by society. But our profession is not particularly influential in shaping those emerging societal demands. That is, there are always some trends which are beyond the borders of our influence. The forests of Pennsylvania, for example, may be shaped more by national trends than by anything peculiar to this state. Similarly the U.S. is as much being influenced by trends outside its borders as those occurring within. Which brings me to the basic premise of this presentation. Understanding the context in which we will be operating calls for looking beyond our current time periods and beyond our borders.

As I try to look out beyond my borders, *I conclude that signals abound that over the next two decades forestry will have to be practiced under social and economic conditions influencing the demand and supply for raw materials and products which are significantly different than today.*

While there are dozens of forces which will ultimately and irrevocably reshape the societies in which we live, I would like to mention the five which I think will have more impact on the forestry enterprise than any of the others.

Population

It is necessary for me to dwell on population growth to this audience which is more aware than most of the potential impacts of demographic change

on forest products demand and pressures on forest lands of all kinds.

Though globally, population growth rates have declined over the past couple of decades, the actual number of people added to the world every year is about 90 million people – the equivalent of another Canada every four months, another United States every 2-1/2 years, another India every nine years, or another China every 12 years. As we look forward over the next 25 years, over one-third of the population growth will be in five countries: China, India, Brazil, Mexico, and Indonesia. The obvious point is that the pressures on resources will increase substantially and it will be distributed quite unevenly. Even the United States will add another New York, California, Florida and throw in Maine and Massachusetts during the same time period.

Another point which is likely to influence forest products demand is the increased urbanization of the world's population. In 1990 there were 13 cities worldwide with populations which exceeded 10 million people. Within the next 15 years it is estimated that there will be 26, and by the year 2025, 60% of the world's population is likely to dwell in urban areas.

Even more significant from the standpoint of forest products demand is that total world economy is growing faster than population growth. While population doubled between 1950 and 1990, the global economy increased fivefold. World Bank estimates indicate that within the next 30 years average per capita income worldwide could reach the level of the richest one-fifth of the world in 1990.

Economists and demographers will certainly differ in their estimates of economic and population growth. But on average world markets will grow, economies will grow, and the conflicts over economic growth and maintaining the highest quality living environment will increase. So if you sell resources you can feel good about the future, if your interests are in preserving certain landscapes you better hurry, and if you

are searching for the right balance between the two your work is cut out for you.

International Trade

Though some countries or sectors within countries will be strong advocates for expanded international trade and others will be more protectionists, there is an irreversible trend toward expanding trade. Governments prone toward protectionist policies will ultimately be thwarted by the increasingly powerful transnational corporations who will benefit from free trade. If one ranked the top 100 economies in the world, half of them would be countries the other half would be corporations. Mitsubishi is bigger than Indonesia, Ford is bigger than Turkey, and Wal-Mart is bigger than Poland. The 200 largest corporations in the world control about 28% of the globe's economy. Even the concept of balance of trade becomes confounded when more than a third of global trade is intracorporate. That is, firm A in one country sells to firm B, a subsidiary, in another country. This potential increase in movement of resources and products in a global market seems to add emphasis to the need to consider how to accomplish expanding economic growth in a sustainable manner while at the same time making sustainable development more difficult to achieve because different countries will have different attitudes regarding the importance of sustainability.

A major result of increasing international trade and the redistribution of investment over more countries will be the emergence of a global middle class. The emergence of this middle class will both result from growing international trade and also be the cause for its further expansion. Unfortunately there will be some parts of the world which may not participate in this overall economic gain.

Changes in Manufacturing Processes

Not only will markets be larger, but they will be for a variety of products unprecedented in times past when efficient production, at least in the

developed countries, was based on large factories with endless assembly lines producing a homogeneous product. Mass production worked when the products coming off the end of the assembly line were essentially all the same. There were costs savings making it possible in the developed nations for many people to have a car, a house, an abundance of clothing, as long as the car, house and clothes were quite similar to those of their neighbors. The advent of the application of computers to both design and manufacturing processes has improved the efficiency of smaller manufacturing firms and has allowed larger firms to increase the variety of products produced. Heidi and Alvin Toffler describe this as the demassifying of society. The impacts of this on decentralizing manufacturing, reducing capital intensity, allowing manufacturing for specialized products in remote locations, is an interesting investigation in and of itself, and worthy of a more thorough discussion than I will give it here.

For today I want to emphasize that the forest products industry has lagged behind others in product diversity. For example, almost all residential construction uses the same wood materials – boards nominally 2" thick, 4" wide and 8' long and sheets of plywood or particle board 4' wide and 8' long. Other countries have their standard products, which though efficient to produce, may not keep pace with manufacturing changes demanded by society.

Changing Energy Demand

During the 1970's when oil was approaching \$50 per barrel on the international market, considerable attention was paid to improving energy conservation. Western Europe and Japan were particular leaders in improving energy efficiency in manufacturing and transportation. The rigor with which industrial nations approached energy conservation declined as oil prices approached \$17 per barrel. The industrial nations of North America and Europe appear to be more sanguine about energy costs.

But what is on the horizon? The steady increase in oil consumption by the emerging economies of Asia accounts

for 70 percent of the new global demand for petroleum. At its current growth rate of 5 percent per year "the Asian Pacific region will outstrip North America in energy consumption by 1999. Meanwhile consumption in the U.S., Europe and Japan has crept back to its highest level since 1979" (*Fortune*, March 20, 1995). While energy consumption in the developed world may decline over the next 30 years, it will likely more than triple in the rest of the world. Energy costs (which triggered the two worst recessions since 1945) are prone to increase sharply when demand pinches supply.

Changing Attitudes about the Forest

At the risk of stretching some social observations a bit, I would like to speculate in regard to the cause in changing public attitudes about the forest which will influence laws and policies, and ultimately the way we do business in the future. People are recognizing that the behaviors which we so valued because they were the key to the American Dream (and the Canadian or European Dream) are not giving us the satisfaction that was hoped for. Yes we have multiple cars, a home (some even two), a richer variety of food at a smaller portion of our salary than others in the world, and therefore more of our income can go into luxuries. But with it, we have seen a deterioration of the family, increase in violent crime (particularly amongst youth), and an increase in personal debt because our appetite for things seems to be insatiable. The list adding to our discontent goes on. So there appears to be searching for nonmaterial things which will bring us a joy which the material was unable to deliver. Concerns for the environment, which may have a very sound base in science, have been reinforced by a public who is searching for values which transcend those tied to economic growth, and have as their foundation things which appeal to the soul, are pleasing to our aesthetic sense, and satisfy our need to feel altruistic (particularly when we don't see any personal sacrifice). This trend has a particular time dimension on it. This concern for the forest for aesthetic, spiritual, and nostalgic

reasons will continue over the next decade or two and then I am confused as to what happens next. When advances in computer visualization result in virtual reality being the reality, what will society's attitude be about nature? — an increased concern and attention because it is the last vestige of our tie with the real world, or a total disconnect with nature because the nature that we see on the screen, hear through the speakers, feel through the gloves, and perhaps even smell, is more satisfying than that supplied by God (and besides there are no bugs or rainy days unless we program them)?

To summarize, two decades hence we all will live in a world in which:

- the population is 45% larger and considerably more urbanized;
- we will see the emergence of a global middle class with some unfortunate pockets of poverty;
- manufactured products will be more diverse, produced in smaller plants, and traded internationally more aggressively than today;
- energy supply will be a nagging problem;
- people will continue to feel stronger and stronger about their forests as a tie with nature and with the past; and
- conflicts between economic growth and a quality environment will not have gone away. They will have increased.

Given these trends, what does it all mean for us as foresters?

1. While demographic and other social data only lead to the conclusion that conflicts between economic growth and environmental quality will increase, measures of available land and its potential productivity suggest that with wisdom the potential to minimize land use conflicts is real.
2. There is a resiliency in nature which will enable it to survive even if we don't. That is, there is no need to protect mother nature for her sake — only for ours.
3. Foresters can play a **critical but limited leadership role** in shaping future policies for forest lands if we understand what it means to be a forester.

(Continued on page 18)

(Continued from page 17)

A couple of years ago I was asked to speak to the New York Section of SAF on *Can Foresters Take the Lead?* "The lead in what?" I asked. "The lead in some new conception of forestry," was the response. Well if I am correct that there are influences out there in the world which are, and will continue to have major impacts on forests, forest products, and forest management, then I guess I should have a view on the role of foresters in leading us through this change.

I would break the question into two parts. First, should we take the lead? Then if the answer to that is yes, then can we take the lead? That is, do we have the *stuff*?

First, should we take the lead? If we are talking about shaping citizens' values with regard to their forests, establishing a national vision, if you will, on the overarching purpose for our forests, or determining national forest policy, I think the answer is probably NO. Our own values as to the purpose of our forests are probably more influenced by whether we are 25 years old or 55, who we work for, whether we are an easterner or westerner, whether we are more influenced by an urban or a rural upbringing; and less by the fact that we have a forestry degree. Will it be foresters who determine whether sustainability is the overarching element of a national attitude or vision? NO, it will be

society at large. And I would suggest that the decision has already been made by the forces of change mentioned in proposition II. And we ignore them at the peril of becoming irrelevant.

But we **should** take the lead in determining how best to manage the land to meet the national vision given to us. We can take this lead if:

- we accept the challenge of using our training, our experience, our concern for the land to respond to changing national and societal values rather than resisting the change;
- we exert a leadership which is not exclusive. I remember a discussion in which it was argued by some of its members that the Society of American Foresters should take the lead in determining how sustainable forest health and long term forest productivity should be achieved in the United States. I agreed heartily. Then someone asked whether we should involve other professions. How can that be answered any other way but of course!;
- we look beyond the boundaries of a single ownership. How do we have landscape level planning without the specter of big government imposing restrictions, which are perceived as anti-economic growth, anti-employment, on private lands;
- we are honest about what we know and what we don't know. For example, with regard to ecosystem management we haven't even invented a language, never mind adequate measures.

Sustained Yield:

Board Foot — a measure;

Nondeclining even flow — a concept;

Financial maturity — an analytical tool;


Harvest schedule — a prescription applied on the ground;

- we argue from the basis of our science rather than some conviction that we, because we are foresters, have particular rights to manage forests in our way.
- we refocus our research and education.

Can we take the lead? Of course. If the past decades are an indicator, we will. For the short run I'm a little nervous that at times we may be arguing over the wrong things. ⚡

* This presentation was delivered at the 75th Anniversary meeting banquet of the Allegheny SAF, in Matamoras, PA, February 13, 1997. A similar presentation was delivered in a general session at the SAF Annual Convention in Albuquerque, MN in November 1996. Ed.

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After you've seen it, any suggestions
for inclusions that may help to explain
SAF and our mission are welcome.

A Little History (Continued)

The following is a verbatim transcript of the third meeting of the "newly formed" National Society of American Foresters. The minutes of the first two meetings were printed in the Fall-Winter issue of *Allegheny News* (Volume 5, Nos. 3&4).

Although this was recorded as the third meeting of the Society, it was actually a continuation of the morning meeting of 12/13/1900 which, by motion, "... was made (and carried) to adjourn until noon, to meet in the office of Mr. F. H. Newell."

Washington, D.C., Noon, December 13, 1900

Minutes of the Second Meeting of the Society of American Foresters.

Moved that the Society proceed to the election of officers.

Moved that a list of officers prepared by the Committee on Constitution be read. The following list was then read:

President, Gifford Pinchot. Vice President, Henry S. Graves. Secretary, George B. Sudworth. Treasurer, Ralph S. Hosmer.

Executive Committee: Overton W. Price, (Chairman), Gifford Pinchot, Henry S. Graves, George B. Sudworth, Ralph S. Hosmer, Wm L. Hall, B.M. Griffith.

Committee on Admissions: George B. Sudworth (Chairman), Gifford Pinchot, Overton W. Price.

Committee on Meetins: Ralph S. Hosmer (Chairman), Thomas H. Sherrard, Wm. L. Hall.

Committee on Publications: Edward T. Allan (Chairman), Overton W. Price, B. M. Griffith.

Moved (Hall) that the officers (exclusive of Committees) named in the list be selected as the officers of the Society for the ensuing year.

Moved that the names proposed in the list for the Executive Committee be elected.

Moved that the names proposed in the list for the Committee on Admissions be elected.

Moved that the names proposed in the list for the Committee on Meetins be elected.

Moved that the names proposed in the list for the Committee on Publications be elected.

Moved that the name of Mr. B. M. Griffith be substituted on the Committees for that of Mr. Filbert Roth. (this action was taken because Mr. Roth was not yet a member of the Society).

Moved that we proceed to the election of members of the Society.

The following (charter) members were present: Gifford Pinchot, Henry S. Graves, Edward T. Allen, Wm. L. Hall, Ralph S. Hosmer, Overton W. Price, Thomas H. Sherrard.

Active Members Elected.

Mr. E. M. Griffith was present and was at once elected to membership, the nomination being made by Mr. Pinchot, and seconded by Messrs. Hosmer and Sherrard.

Prof. James W. Toumey was elected to membership, being nominated by Prof. Graves and seconded by Messrs. Hall and Price.

Dr. C.A. Schenck was elected to membership, being nominated by Prof. Graves and seconded by Messrs. Griffith and Price.

Dr. B. E. Fernow was elected to membership upon the nomination of Mr. Hall and seconded by Messrs. Hosmer and Graves.

Prof. Filber Roth was elected to membership upon the nomination of Mr. Allen and seconds of Messrs. Griffith and Price.

Mr. F. .K. Olmsted was elected to membership upon the nomination of Mr. Price and seconds of Messrs. Sherrard and Graves.

Mr. George B. Sudworth was elected to membership upon the nomination of Mr. Graves and on the seconds of Messrs. Price and Hall.

Mr. H. B. Ayers was elected to membership on the nomination of Mr. Price and seconds of Messrs. Hall and Pinchot.

Moved that the Society proceed to the election of associate members. The following persons were then selected to membership:

Associate Members Elected.

Secretary James Wilson, nominated by Mr. Pinchot, seconded by Messrs. Price and Griffith.

The record of this meeting ended abruptly as shown. There is no record that this last item was the end of the meeting, or if one more page was lost (via phone conversation with Sheryl Oakes, Forest History Society).

Ed.

Hot Shot Crews - An Almost Household Word!

By Riva Duncan, Forester, Bradford District, Allegheny National Forest



Prescribed burn on the Apalachicola National Forest, Florida.

After the tragedy at the South Canyon fire in 1994, the term "Hotshot Crew" joined the ranks of "Smoke Jumpers" as a much more understandable household term — mainly due to the media coverage of the event.

Most of us in the forestry profession are familiar with wildland firefighting; many of us have experienced firefighting firsthand; still others have been lucky enough (in my opinion) to have full-time jobs in a firefighting organization. But how many of us know the difference between a Hotshot crew and a regular firefighting crew? And how many know that there has been a Hotshot crew in operation east of the Mississippi since 1989? A primer might be in order.

The interagency Hotshot crew (IHC) east of the Mississippi, based in Asheville, North Carolina, is one of 62 active IHC's in the United States. It is also one of three hotshot training crews — more about that later. Hotshot crews are also referred to as type I crews and differ from Type II, non-hotshot crews, in several ways.

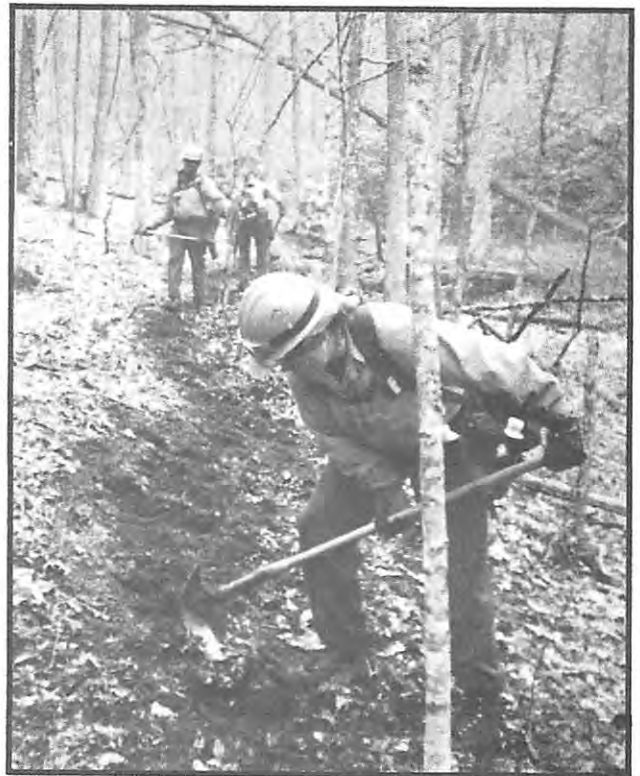
Hotshot crews consist of the same 20 people put together for an entire fire season. The primary purpose of hotshots is to fight fires. They don't have other jobs during the fire season. They live together, usually in a barracks type facility, which is near a major airport. Hotshots must be able to respond to a dispatch within five minutes when "on the clock" and within two hours when "off-duty." Their tools and ground transportation must be completely self-sufficient.

Hotshot crews have higher physical fitness requirements than Type II fire fighters, consisting of pull-ups, push-ups, sit-ups, AND a mile and a half run. They are given the more demanding assignments because of their higher level of fitness requirement, added training and experience. They are the initial

attack force and are often the ONLY personnel on a fire until it is out and mopped up; it is not unusual for them to do 36 hour shifts, and then move on to the next fire after a period of rest.

On most hotshot crews only two members are permanent, the Superintendent and the Foreman (Assistant Superintendent), the rest of the crew are seasonals, some of who may return year after year. There is a one shot training experience. The training crews' Superintendent and the Foreman are the nucleus for new training crews. The superintendent of a Type I crew is like the crew boss on a Type II (non-hotshot) crew — but don't ever refer to a superintendent as a crew boss!

As mentioned, Asheville IHC is one of three hotshot training crews, the others being located in Redmond, Oregon and Redding, California. Asheville IHC is funded by the Southern Region of the



Riva Duncan building line on Chatahoochee National Forest, Georgia.

US Forest Service. Slots are reserved for people from agencies other than the Forest Service, including state agencies. The crew was initiated to assist in prescribed burning and fire suppression primarily in the south, but is

also a resource to be utilized anywhere (even in the East!).

I was an Asheville hotshot for the 1996 season. Our crew consisted of one Park Service employee, two Fish and Wildlife Service employees, and one Puerto Rico DNR employee in addition to the U.S. National Forests Service folks. We had a wildlife biologist, two archaeologists, a recreation specialist, as well as foresters in and out of fire positions in their organizations. Two of us came from the Allegheny in Pennsylvania, two each from the National forests in North Carolina, Kentucky and Idaho; one crew member each came from National Forests in Arkansas, Louisiana, Tennessee, South Carolina, Virginia, and Wyoming. The Superintendent and Assistant are both permanent positions working out of the headquarters of the National Forests of North Carolina.

The Asheville IHC's season begins in early January and lasts until the end of May. This coincides with the southern fire season. During my 1996 detail, our crew broke the Asheville IHC record for number of fires (23), hours of overtime, and number of days away from the base. We assisted in prescribed burning on nearly 17,000 acres in Florida, Alabama, North Carolina, and Georgia; we fought wildfires in North Carolina, Alabama, Georgia, Texas, New Mexico, and Arizona. When not fighting fires or assisting in prescribed burning, there was classroom training, maintaining equipment and tool readiness, search and rescue, and "project work" — the catch all!

Being part of the Asheville IHC was the most rewarding thing I've done in my forestry career. Not only did I receive valuable fire experience and training, but I made many new life-long friendships.

But the life of a hotshot is certainly not for everyone.

A crew member must be away from loved ones for up to five months, work under a very structured system and be a team player. The demands of living and working with the same 20 people for an extended period of time gets to everyone at one time or another. Our youngest crew member was 21 and the oldest two were 40. I was one of three women on the 1996 Asheville IHC crew. Anyone with the physical requirements, loves fires and can commit to the training and the time away from home, can become a hotshot. The 1997 season has already begun, but there is plenty of time to get in shape and convince your supervisor to let you try for 1998! △

For more information call Riva Duncan at (814) 362-4613.



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(Continued from page 9)

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21st Century Forestry: Let's Get On With It

By Dr. John C. Gordon, Pinchot Professor, Yale School of Forestry and Environmental Studies*

Forestry in the new century will have some of the characteristics of forestry in the late 20th century, and probably some that are radically different. My guesses are less intended as forecasts than as directions in which I think our profession should move in response to external forces and in trying to shape our own destiny. They are thus in the vein of "one cannot predict the future, but one can create it". I see four major directions, that I call:

1) consolidation of the social science revolution; 2) realization of ecosystem management; 3) productivity of value to the front burner; and 4) a special role for our region.

CONSOLIDATION OF THE SOCIAL SCIENCE REVOLUTION

Twenty-five years ago, there were no social scientists other than economists in faculties of forestry, and not many economists. Now the social sciences are central. In the next century they will be dominant in an incremental sense. In a recent paper reviewing five studies of human dimensions in natural resources initiatives, Berry and Gordon concluded that six changes were needed with respect to the use of social science skills to enhance performance: 1) Better methods need to be applied to the regular assessment of public values and needs; 2) New partnerships and collaborative processes need to be studied, documented and adapted to new places and potential partners; 3) Organizations need better coordination and communication, and this can be achieved only with new mechanisms and changes in organizational culture; 4) Accountability needs to more obviously depend on clear and measurable outcomes for people; 5) The need for leadership and leadership training needs recognition and effort; and 6) A broader range of publics needs to be constructively engaged.

REALIZATION OF ECOSYSTEM MANAGEMENT

Ecosystem management is code for a new way of doing things, a way that incorporates: **Leadership**, of a new

kind; **Conservation**, where many things are conserved in one space; **Restoration**, of spirit and process, not of the past; and **Management**, of an adaptive kind, "managing to learn."

Leadership.

Leadership in environmental matters is an urgent and underdone task. We created most of our myths and rules when we were an empty country. We are now a relatively full one. There are twice as many people here now as when I was born in 1939. It is also a full world. We are headed for 10 billion (up from 5 billion) people in 50 years. To put that in perspective, most of the trees that will supply them with paper, houses and fuelwood, as well as recreation, water, wildlife and solitude, are now growing. It is urgent that we see that there are enough of them 50 years hence. Ecosystem-style leadership is, then, faced with tasks born of scarcity; dividing the pie is no longer enough. We need to be led to share the same pie. Some of us think this will require relatively new kinds of leadership, because the problems to be solved are different: they are long-term, complex, usually have a poor science base, and are almost always contentious. More people will have to lead, leadership will be more participatory, and vision and large picture views will be ever more important, because the picture is continually getting larger. Ways to rapidly increase useful information will be key in the solution of larger, longer-term problems.

Conservation.

Pinchot's turn of the century vision of conservation of forests is very close to what we will get for the environment generally, if we are lucky. That is, if we can learn disciplined, loving *use* of the environment, we will do as well as we can. This particularly applies to those areas we call "preserved". They are often places that are most loved and therefore the most used, for example our National Parks. This summer I visited Brooks Camp in Katmai National Park in Alaska. In this remote

place we have created a unique, totally anthropocentric ecosystem comprised of bears, salmon, tourists from all over the world, and nervous Park Service employees with radios. This place seemed to me to illustrate the need for application of the most basic principles of the ecosystem management that will underlie the new conservation: manage where you are (not from some general model); manage with people firmly in mind (we now inhabit or influence all earthly ecosystems); manage with specific information (not rules of thumb or slogans); manage across boundaries (not in ignorance of neighbors or their influence); and manage without externalities (know all knowable parts of the system, not just those of immediate interest). Next Century Forestry will apply ecosystem principles and methods and move beyond the methods of centralized regulation and land allocation, toward integrated and truly intelligent, far-sighted use.

Restoration.

Next Century Forestry will confront and contribute more thought on the notion of "restoration." I think the restoration we need to concentrate on is a restoration of spirit and democratic process. The Seventh American Forest Congress, held last winter, brought together an unprecedented number and diversity of participants to talk about the future of all of America's forests, and was, in at least a small way, a restoration of direct democracy. Two things were clear afterward. First, levels of agreement on many things were very high; and second, "small woodland owners," who own almost two-thirds of America's forests, emerged as a force, making the "industry-environmentalist" dipole at least a triangle. This emergence, both of a group and of agreement, was a consequence of inclusiveness and "letting everyone speak." What we can't do, and shouldn't waste much time trying to do, is to put things back the way they were. Time's arrow is never more clearly seen than in ecosystems. I am currently living part of the year in a reforested New

Hampshire; few trees would have been in the view from my house 100 years ago, and now I see almost unbroken forest. But it is a quite different forest than that found by the first European settlers for many reasons. Not less good, but different. My hope is that Next Century Forestry can help us understand that change is the rule, not the exception, and that preparation and guidance for change is the best approach to restoration.

Management.

Ecosystem management must become managing to learn, as well as to produce other "outputs." Adaptive management," in the buzz phrase, is the only rational way to approach ecosystems, which may, in fact, be "more complex than we can think." This is perhaps the largest, most technically embedded challenge for Next Century Forestry. Research and management must both change radically, and come together to achieve the new knowledge we urgently need. We will also need to learn practically to manage across boundaries, and move beyond the "catch the rascals vs. uphold private property rights" brawl now in vogue. One of the most intriguing and ultimately valuable facets of next Century Forestry may be the eventual admission of actual managers to academia on an even footing with those embedded in the research-and-publish culture.

PRODUCTIVITY OF VALUE TO THE FRONT BURNER

Human Population.

One looks in vain for a demographer who doesn't predict a global population of 8-10 billion people by the mid-point of the next century (it is now 5 billion). The implications of this possibility for forests and forestry are clear. The world stock of forested land is decreasing, and although there may be some major conversion from agriculture to forests in developed countries, forests will at best be stable in area in the developing world where most of the population increase will take place. Thus, more product, and more value, will need to be extracted from a fixed land base. Indeed, the land from which the next 5 billion people will be fed is not yet described, but knowledgeable people are calling for more land to be brought under

cultivation, which can only increase pressure on forests. Either we will have more forest products or more things to substitute for them. Substitution may be relatively straightforward with at least some wood products (for example, if we realize the paperless office), but will be very difficult with some other forest products (for example, biological diversity and quality water). Foresters will become adept at handling all dimensions of the people/resources equation; more will have to be done with relatively less. Uses will be blended rather than zoned, and no one will get all of what they want.

Productive Potential of Forests.

However, despite scarcity and necessarily more painful tradeoffs, there remains an enormous opportunity for improving the ability of forests to create and transfer value. We have well-documented opportunities to greatly increase wood yields per unit land area. Most of these gains have occurred with a scientific focus on individual organisms, populations comprised of individual organisms, and (sometimes) on stands, as silviculturally defined. Less attention has been paid to whole-system function, although a number of pioneering efforts have been underway for as much as a quarter century. Next Century Forest Science will pay more attention to preservation of both the physiological and evolutionary function of "used" landscapes. In the long view, preservation of the evolutionary anvil upon which response to change is shaped (the ecosystem) is the primary forest ecosystem function, enabling the sustained flow of uses and benefits from forests.

A SPECIAL ROLE FOR THE NORTHEAST

This part of the country is a particularly apt laboratory for the construction and application of Next Century Forestry. There are several reasons for this: Dominance of the forest; Dominance of the private sector, profit and non-profit; and Ancient Political Systems: the new regulation.

SUMMARY VISION

- Foresters will lead because of their

ability to solve large, long-term, complex problems.

- Diffuse but strong leadership will characterize forest organizations.
- Social science-derived tools will be more important than natural science-derived tools, but the latter will remain necessary and the difference between MFs and MBAs
- Forests will be managed as ecosystems highly productive of many values without diminishing their role in wood production — which will be much more important than it is generally seen to be now.
- The Northeastern U.S. will be the principal laboratory and leader in these directions.

IN CLOSING

Challenges are abundant, but so are resources. There is no reason that a changed and broadened forestry, with its emphasis on disciplinary integration, long-term view, focus on people as a part of nature, and a huge array of specialists and specialized skills, shouldn't be the rising profession of the next century. We may need to find a new name, out of deference to our many old and new natural resource management professions. But my own preference is to change the meaning of forestry. △

** Dr. Gordon presented this paper at the 75th Winter Meeting of the Allegheny Society of American Foresters, on February 13, 1997, at Matamoras, P.A. Ed.*

Allegheny SAF Recognizes Six Golden Members

At the Allegheny 75th Celebration, six members were awarded their Golden Member certificates. They are:

Gordon T. Bamford	New Jersey
Thomas S. DeLong	Pennsylvania
Thomas G. Clark	West Virginia
William S. Corlett	Pennsylvania
Herbert Seidel	New Jersey
Harold S. Streater	Pennsylvania

Congratulations, and thanks for your 50 years of contributions to SAF and society. △

Coming Events

April

17 Second PA Environmental History Symposium, "Maurice K. Goddard, His Life, Legacy, and Lessons." Wildwood Conference Center at Harrisburg Area Community College (HACC), PA, 9 a.m. - 4 p.m. Video link information, Caren Glotfelty (814) 863-2506; Registration by April 10, Margaret Shaw (717) 948-6000.

21-23 Eastern Hardwood Resources, Technologies, and Markets. Camp Hill, PA. CFE/ACF credit: 15.5 hours, Category 1. Forest Products Society (608) 231-1361; FAX (608) 231-2152.

27-29 Governor's Conference on Greenways & Trails, "Educational Forum for grassroots organizations & local governments to address issues, cooperation & partnerships." Radisson Penn Harris Convention Center, Camp Hill, PA. PA Recreation & Park Society FAX (814) 234-5276.

June

15 **Deadline for articles and photos for Summer 1997 issue of *The Allegheny News*.**

24-26 First North American Forest Ecology Workshop, NC State University, Raleigh, NC. SAF Forest Ecology Working Group (C-1), James Cook (715) 346-2269; FAX (715) 346-3624; e-mail jcook@uwsp.edu

July

1 **Deadline for abstract of poster presentation for 1997 National SAF Convention.** Wayne Clatterbuck (423) 974-7346; FAX (423-974-4714; e-mail wclatterbuck@utk.edu

August

13-15 **Allegheny SAF Summer Meeting, "Media Relations for Foresters,"** Canaan Valley Resort & Conference Center, Davis, WV. Luke Popovich, Alston Chase, Elizabeth Pease, Robert Bidinotto and other public relations and media representatives with advice. Check your mail for registration information soon.

September

15 **Deadline for articles and photos for Fall 1997 issue of *The Allegheny News*.**

October

4-8 **National SAF Convention, Memphis, TN** "Driving Forces: Forging Solutions"

Allegheny Society of American Foresters Committee Chairs

Auditing*

Ronald J. Sheay
1628 Prospect Street
Trenton, NJ 08638
(h) 609-771-8301

Awards*

Robert Shipman
209 Twigs Lane
State College, PA 16801
(h) 814-466-6511

Communications*

Charles J. Newlon
2 Irving Lane
Wallingford, PA 19086
(o) 302-739-5195
(h) 610-872-6019

Continuing Forestry Education Coordinator*

William Kidd, Jr.
104 Jackson Avenue
Morgantown, WV 26505
(h) 304-296-8198

Forest Health and Productivity (ad hoc)

Kurt W. Gottschalk
USDA Forest Service Lab
180 Canfield Street
Morgantown, WV 26505
(o) 304-285-1598
(h) 412-627-4161

Forest History (ad hoc)

Ronald J. Sheay
1628 Prospect Street
Trenton, NJ 08638
(h) 609-771-8301

Foresters Fund (ad hoc)

Mike Brown
PO Box 273
Clayton, DE 19938
(o) 302-739-4811
(h) 302-653-4218

*Standing Committees

Forest Science Coordinator*

Mike Lester
RR 1, Box 268
Springville, PA 18844-9552
(o) 717-833-3194
(h) 717-965-2752

Membership*

Mark R. Webb
11021 US Route 6
Union City, PA 16438
814-663-5393

Nominations*

Mark Vodak
PO Box 231, Cook College
Rutgers University
New Brunswick, NJ 08903
(o) 908-932-8993
(h) 609-758-9449

Policy & Legislative (PLAN)*

Timothy A. Kaden
724 Green Winged Trail
Camden, DE 19934
(o) 302-739-4811
(h) 302-697-7066

Program*

Stephen Jones
110 Ferguson Building
Penn State University
University Park, PA 16802
(o) 814-863-0401
(h) 814-867-6884

Student Coordinating (ad hoc)

Kim C. Steiner
Forest Resources Lab
Penn State University
University Park, PA 16802
(o) 814-865-9351
(h) 814-234-8754

Tellers*

Kenneth W. Jolly
1398 Primrose Road
Annapolis, MD 21403
(o) 301-464-3065
(h) 410-626-2845

A FREE instruction booklet for the SAF Certified Forester Program is available from the National Office at (301) 897-8720, ext. 122

Allegheny Society of American Foresters

Officers

Chairman
Timothy A. Kaden
724 Green Winged Trail
Camden, DE 19934
(o) 302-739-3423
(h) 302-697-7066
FAX 302-739-3817

Chairman-Elect
Mark R. Webb
11021 US Route 6
Union City, PA 16438
814-663-5393

Secretary/Treasurer
Susan E. Lacy
1713 Kings Highway
Coatesville, PA 19320
(o) 610-975-4134
(h) 610-383-7144

Past Chairman
Mark C. Vodak
Dept. Natural Resources
PO Box 231 Cook College
Rutgers University
New Brunswick, NJ 08903
(o) 908-932-8993
(h) 609-758-9449

Executive Committee

Kenneth W. Jolly
1398 Primrose Road
Annapolis, MD 21403
(o) 301-464-3065
(h) 410-626-2845

Kim C. Steiner
PO Box 70
Lemont, PA 16851
(o) 814-865-9351
(h) 814-234-8754

Roy A. Siefert
RD 1, Box 56
Austin, PA 16720
(o) 814-274-8474
(h) 814-647-8525

Kurt W. Gottschalk
USDA Forest Service
Forestry Science Lab
180 Canfield Street
Morgantown, WV 26505
(o) 304-285-1598
(h) 412-627-4161

Council Representative

E. Dwight Fielder
1050 N. Stuart Street, #201
Arlington, VA 22201
(o) 202-452-7758
(h) 703-908-9488

Executive Director

Jack Winieski
P.O. Box 699
Dillsburg, PA 17019-0699
717-432-3646; FAX 717-432-3646

Division Chairs

Maryland/Delaware
Anthony DiPaolo
623 Snow Hill Road
Stockton, MD 21864
(o) 410-632-1955
(h) 410-632-0843

New Jersey
Craig Kane
310 Earnest Garton Road
Brigeton, NJ 08302
609-453-8696

Pennsylvania
Kenneth C. Kane
103 Tionesta Avenue
Kane, PA 16735-1236
(o) 814-837-9391
(h) 814-837-8357

West Virginia
Daniel Parker
P.O. Box 289
Danville, WV 25053
(o) 304-369-0361
(h) 304-369-6030

Chapter Chairs

Keystone
Merl Waltz
2923 Roosevelt Drive
Chambersburg, PA 17201
(o) 717-485-3148
(h) 717-263-2681

Northern Hardwood
Dennis F. Ringling
210 Quarry Road
Muncy, PA 17756
(o) 717-547-1661
(h) 717-546-2194

Pinchot
Mike Lester
RR 1, Box 268
Springville, PA 18844-9552
(o) 717-833-3194
(h) 717-965-2752

Plateau
Christopher Nowak
Forestry Sciences Laboratory
P.O. Box 928
Warren, PA 16365
(o) 814-563-1040
(h) 814-726-1574

Rothrock
James C. Finley
130 Harvard Road
Port Matilda, PA 16870
(o) 814-863-0401
(h) 814-234-9028

Valley Forge
Chrls J. Barden
423 Dogwood Lane
Coatesville, PA 19320
(o) 610-975-4133
(h) 610-383-0730

Western Gateway
Pat T. Hill
R.D. #1, Box 357
Champion, PA 15622
(o) 412-455-3401
(h) 412-455-7232