



# THE ALLEGHENY NEWS

April - 1977

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Allegheny Section  
Society of American Foresters

P.O. Box 134  
Mont Alto, PA 17237

CHAIRMAN'S COLUMN

DON'T LAUGH AT THE BUTTERFLIES

The title of this column won't make any sense unless you attended the 1977 Section Winter Meeting and took part in the discussion "Regulating Forest Practices". If you didn't attend the meeting and the title doesn't make sense, I wish you would read on anyway.

Every speaker at the technical session either told us to get involved or asked for our help in the development of federal, state and local government land management laws, regulations or guidelines.

Bob Wolf, a forester with the Library of Congress told us about the major role SAF played in the enactment of the National Forest Management Act and alerted us to the spin-off effect that the act can have on state and private forestland.

Joe Krivak from EPA gave us some insight on federal legislation that mandates the development of rules and regulations by the states. A forester himself, he urged foresters to get involved in the development process of state regulations. Bill McCredie, a forester with the National Forest Products Association, pointed out the National Forest Management Act is far from being a settled issue and Sections 404 and 208 of PL 92-500 are both in a state of flux. He too pointed out the need for us to get involved. Dennis LeMaster reinforced Bill's plea and Ralph Nyland from New York and Tunis Lyon from Maryland, both told us we can't afford to be complacent, the pressure is on - now! And John Callagan, from the California Forest Protection Association, gave us a case history and the gory details of the California experience.

Then along came a housewife by the name of Jan Keim who had been invited to participate in the program to present the views of an environmental group which was instrumental in the adoption of a township ordinance regulating timber harvesting.

Jan did a fine job of presenting the views of her organization, but her most significant comment was made before she got into her formal talk. While she sat in the audience waiting her turn at the podium, someone jokingly made a comment about a recent concern with setting land aside to protect an endangered butterfly. Naturally an audience of foresters, who have savvy of biology, gave forth with a hardy chuckle.

Jan, a housewife who doesn't have 30 credits in biological science, but is pretty typical of the public we deal with, didn't appreciate the laughter. In fact, her first comment was, "Don't laugh at the butterfly". She was incensed at the attitude of foresters whom she considered were interested in her causes. Jan is concerned with the "preservation" of the butterfly and couldn't understand our laughter or apparent lack of concern. Now we foresters with 30 credits of biology all know the best way to "preserve" that butterfly is in formaldehyde, but should we have laughed at the concern with protecting, or perpetuating, the butterfly which we know is what Jan really meant, even though she said "preserve". We goofed and Jan let us know in no uncertain terms. Just because she isn't a trained biologist doesn't mean she doesn't have a legitimate concern or that we, as trained biologists, shouldn't listen.

A forest ecosystem is like a house, the interior of which can be viewed through many different windows. If we only look through a kitchen window, we see the stove, refrigerator and cupboard. If we look through the living room window we see a sofa, TV and easy chair. If we look through a bedroom window, we see a bed and chest of drawers. Only when we view the house through every window do we see the whole picture and recognize the different parts for what they are.

As professional forest resource managers, we have the training, skills, and experience to provide leadership in regulating or guiding forest practices, but we must be certain we are viewing this forest ecosystem through every window... Don't laugh at the butterflies.

-- James C. Nelson, Chairman

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ALLEGHENY SECTION SAF OFFICERS 1976-1977

CHAIRMAN	James C. Nelson 1295 Kelton Road Camp Hill, PA 17011
CHAIRMAN-ELECT	George Kemp, Jr. 633 Long Run Road McKeesport, PA 15132
SECRETARY-TREASURER	Ronald J. Sheay P. O. Box 235 Hopewell, NJ 08525
EXECUTIVE COMMITTEE	William D. Scherer Rt. #1, Box 584 Frostburg, MD 21532
	David Weissert 602 Market Street Denton, MD 21629
	Robert T. Forney P. O. Box 1738 Huntington, WV 25704
	Kenny P. Funderburke P. O. Box 685 Lewisburg, WV 24901
PAST CHAIRMAN	Dr. David White West Virginia University Division of Forestry Morgantown, WV 26505

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TREASURER'S REPORT

December 1, 1975 - November 30, 1976

Balance on December 1, 1975

Certificate of Deposit @ 6%	2,500.00	
Savings Account	1,520.79	
Checking Account	1,784.94	
Total	5,805.73	5,805.73

Income

Dues	3,644.50	
Winter Meeting	494.00	
Allegheny News (Adv.)	210.00	
Interest	266.97	
Total	4,615.47	+4,615.47
		10,421.20

Expenses

Winter Meeting	536.26	
Postage & Supplies	151.30	
Allegheny News	961.14	
Chapter Reimbursement	1,033.00	
Travel	984.18	
Secretarial Help	25.00	
SAF Foresters Fund	500.00	
Total	4,190.88	-4,190.88
		6,230.32

Balance on November 30, 1976

Certificate of Deposit @ 6%	2,500.00	
Savings Account	3,287.76	
Checking Account	442.56	
Total	6,230.32	6,230.32
Assets		

--Ron Sheay

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SAF GROWTH RATE HIGHEST IN 20 YEARS

SAF Membership grew by 1,173 in 1976, to total 20,754 at the end of December. This 6% growth rate is the highest since 1955, when membership increased by 7.4% to 10,611.

Much of the SAF membership increase was in the full Member category, which grew by 786. Student Membership increased by 366 and Technician Membership grew by 27. The number of Fellows, Honorary Members and Corresponding Members declined.

The increased growth rate is the result of SAF Section and Chapter recruitment activities, and the programs of the Task Force on SAF Growth.

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FORESTERS' FUND

The SAF Council has approved up to \$10,000 from the Foresters' Fund for SAF Sections to conduct forestry field trips during 1977.

Emphasizing "textbook forestry" and SAF forest policies and positions, the trips aim to create legislative and public support for the multiple-use management of forest resources on the basis of scientific principles. Guests will include Members of Congress, legislative staffs and committees, state and local political leaders, the press and other opinion leaders.

Under procedures and guidelines established by the Committee on Information and Communication, the trips will demonstrate forest management problems and failures, in addition to solutions and successes.

Each Section is authorized up to \$400 toward expenses.

The Southern California Section already has a trip under preparation.

Allegheny Section members should submit their proposals for the use of these funds, through their Chapters, to Chairman Nelson. The deadline for proposals is July 1, 1977.

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JOBS IN FORESTRY

Job opportunities for forestry graduates have been relatively poor in recent years and probably will not improve during 1977. This is the opinion of Edward Robie, Manager of SAF Employment Services. According to Robie, statistics from 49 out of the nation's 52 forestry schools indicate that 49.4% of the 1976 graduates found work in forestry (1,865 graduates out of 3,772). In 1975 the success rate was 52.4%--1,916 of 3,655 graduates found jobs. Rates in the three previous years were 60.1% in 1974, 57.8% in 1973, and 53.7% in 1972.

The federal government, including the Peace Corps, employed 38% of those finding jobs in 1976, an increase of 2 percentage points from 1975. Nearly half of these positions were temporary.

Forest industry took nearly 31% of those who found jobs, a comfortable increase over the 24% figure compiled in 1975. Of these jobs, the great majority were permanent.

State forestry agencies employed 13% of those finding jobs in 1976; city and county governments 4.5%, and educational institutions 5.4%. These percentages were somewhat less than in 1975. Eight percent of the graduates went to work for consultants, associations, or other employers.

Information from employing agencies indicates no dramatic increase or decrease in federal, state, and city/county forestry jobs in 1977. SAF does, however, expect industrial employment to continue to improve.

Details from the employment survey will be published in the Journal of Forestry, May 1977.

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# CHAPTER NEWS

## KEYSTONE CHAPTER

The Glatfelter Pulp Wood Company, Spring Grove, PA, has announced the addition of two foresters to its staff.

Charles R. Brown will be responsible for the Glatfelter Tree Farm Family Program in York and Adams counties. A graduate of the Duke University School of Forestry and Environmental Sciences, Brown will be located at Spring Grove, PA.

Charles K. Johnson, a 1976 graduate of the College of Forestry at Syracuse, will be located in Waynesboro, PA, and will be assigned to forest management and wood procurement activities in south-central Pennsylvania and northern Maryland.

Thirty two members and guests of the Keystone Chapter met at the Chalet Restaurant in Dillsburg, PA, for a smorgasbord dinner and meeting. Officers were elected during the meeting. During the vote counting, Chairman Bob Johncour presented a slide program on "Procedures for Forest Policy Activities in the SAF". Don Cole also showed a film depicting the engineering abilities of the beaver and his impact on the environment entitled, "The Dam Builders".

Chapter personnel changes:

Thomas S. DeLong, PA. Bureau of Forestry, retired in January 1977.

Roger C. Coady, PA Bureau of Forestry, promoted to Superintendent of Mont Alto nursery.

William Ackrom, PA Bureau of Forestry, transferred to Emporium, as Assistant District Forester.

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## PLATEAU CHAPTER

The Plateau Chapter met on January 27, 1977 at Clarion, PA. The business meeting included the election of officers for 1977. They are:

Chairman - Bob LaBar

Vice Chairman - Dave Williams

Sec-Treasurer - Gerald Bremer

Dr. Henry Gerhold, Forest Geneticist at the School of Forest Resources, PSU, presented a slide program entitled "Outlandish Ideas for Tree Improvement" in which he explained some of the research that is taking place at the University.

Section Chairman Jim Nelson was also in attendance. The Plateau Chapter commends him for his interest in Chapter activities as this was the second Plateau meeting which he has attended recently.

--Paul Higby

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## PINCHOT CHAPTER

The newly elected officers for 1977 are:

Chairman - Jane Frounfelker

Vice-Chairman - William M. Heitler

Sec-Treasurer - George "Nevin" Strock

With her election to the Chairmanship of the Pinchot Chapter, Jane became the first woman to fill such a position in the Allegheny Section. Congratulations are certainly in order and we wish her well in her new leadership role.

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## WEST VIRGINIA CHAPTER

Recently elected officers for the current year are:

Chairman - Kenny P. Funderburke

Vice-Chairman - Ralph P. Glover

Sec-Treasurer - Joseph W. Grahame

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the spot  
seen 'round  
the world



**NEL-SPOT**

**WORLD LEADER IN  
FORESTRY MARKING PAINTS  
AND MARKING EQUIPMENT**

**NELSON PAINT COMPANY**

Three plants: Iron Mountain, Michigan  
Montgomery, Alabama  
McMinnville, Oregon



Photo by Leigh Photograph, Trenton, N.J.

NEW JERSEY CHAPTER

Otto W. Kunkel was named the Outstanding Professional Conservationist for 1976 by the New Jersey Association of Natural Resource Districts at their annual meeting. This is the first time that a professional forester was cited for this award. Mr. Kunkel is a Service Forester with the New Jersey Bureau of Forestry and he provides on-the-ground technical forestry advice to landowners in Hunterdon County.

Otto is a member of the Society of American Foresters and is past Chairman of the New Jersey Chapter - SAF. He is an active member of the Flemington Rotary and is a member of the Shade Tree Commission in Pennington, New Jersey where he resides with his wife Pat and eleven children.

In the above photo, Otto is being awarded a plaque for his selection as the "Outstanding Conservationist for 1976". Mr. John VanNuys, Chairman of the Hunterdon County Soil Conservation District, presented the award on behalf of the New Jersey Association of Natural Resource Districts.

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MARYLAND CHAPTER

The Maryland Chapter co-sponsored a one-day workshop in visual management for forest resource managers. The program was designed to treat the visual resource as an integral part of forest management decisions, and introduced participants to a field skill by explaining what can be done and how to do it. The workshop applied especially to those practicing professional managers in Maryland and Delaware, however, it was useful to those from outside that region who deal with visual impact in land management...The workshop was held at the Chesapeake Bay Center for Environmental Studies.

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--Dave Weissert

SOUTHWEST CHAPTER

The Southwest Chapter met on March 24 at the Penn Electric Company Managers' Club, in Cramer, PA. The program for the evening was presented by Lynn Frank (PA Bureau of Forestry), who showed slides of the Bi-Centennial Log Raft trip on the West Branch of the Susquehanna River.

Officers for 1977 are:

- CHAIRMAN - Richard Bedger
- VICE-CHAIRMAN - Gary Scott
- SEC-TREASURER - Jim Hagaman

--Jim Hagaman

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 \* SAF NATIONAL MEETING \*  
 \* It's not too early to begin thinking about \*  
 \* the SAF National Meeting in October. This \*  
 \* year's meeting will be hosted by the South- \*  
 \* western Section and will be held in Albuquer- \*  
 \* que, New Mexico...More information in the \*  
 \* August newsletter... Plan now to attend. \*  
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# AROUND THE SECTION

## LEADING RIDGE vs HUBBARD BROOK

The Pennsylvania State University, School of Forest Resources; the Pennsylvania Department of Environmental Resources, Bureau of Forestry; the Pennsylvania Fish Commission; and, the Northeastern Forest Experiment Station, U.S.F.S., have undertaken a cooperative research project to evaluate the impact of commercial clearcutting on streamflow and the aquatic ecosystem of forested watersheds. This research project is aimed at evaluating the Bureau's timber management program regarding clearcutting as it affects water quality, streamflow timing and amount, sedimentation and turbidity, stream temperature, and also to answer some of the unknowns about nutrient loss and effects on the macro-invertebrate community.

Watershed No. 3 of the University's Leading Ridge Experimental Watershed Research Unit was selected as the site of this commercial clearcut. A great deal of information is available on the soils, climate, geology, timber and streamflow regime of this watershed. In addition, nutrient concentrations in streamwater and the diversity and population of the aquatic macro-invertebrate community in undisturbed forested conditions have been established.

The clearcut is located on the Rothrock State Forest, Huntingdon County, and covers 91 acres of the 257-acre watershed. The timber sale was conducted using the Bureau's normal procedures of stand analysis, marking, log road layout, bidding, timber sale contract, sale administration, and supervision. Logging operations began on August 31, 1976, and are expected to be completed on or before April 30, 1977. Estimated net volume of sawtimber was 317,000 board feet; pulpwood volume was estimated at 69,600 cubic feet.

The results of this comprehensive study will provide information to assess the impact of a commercial clearcut on stream ecosystems and will be of value to the forest manager and timber producer in developing and implementing forest management programs. In addition, the results will assist in developing the brook trout fishery management program of the Pennsylvania Fish Commission.

--J.A. Lynch

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## PENNSYLVANIA FORESTER REGISTRATION COMMITTEE

A special committee has been established to study the need for forester registration legislation in Pennsylvania. The Committee will be chaired by Ken Swartz with membership representation from each of the seven SAF chapters in the state.

The Committee was established in view of recent local ordinances affecting forestland which require the services of a forester, and in view of the newly proposed guidelines for service forester activities where timber management will be referred to consultant foresters. Environmental impact studies are another area where some degree of professional competence should be required. If you are interested in assisting the Committee or know of some case histories that could have a bearing on the Committee study, please contact Kenneth D. Swartz, R.D.#2, Fayetteville, PA 17222.

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## NEW PUBLICATION

Henry D. Gerhold, Professor of Forest Genetics, Penn State, announced the publication of Better Trees for Metropolitan Landscapes (GTR-NE-22 available for \$3.25 from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402). It is the 256-page Proceedings of a Symposium held in 1975 at the U.S. National Arboretum. Included are 29 papers on principles of selecting trees for metropolitan environments; selection strategies of tree growers, breeders, and urban planners; and ways of putting improved cultivars into use. Frank S. Santamour, Jr., Henry D. Gerhold, and Silas Little are editors of the book and were co-chairmen of the symposium. Several Allegheny Section members were among the contributors. F. Philip Newman, Edgar H. Palpant, Edgar G. Rex, Robert S. Ross, Elwood L. Shafer, Jr., and Alden M. Townsend served on the program advisory committee. Authors included Edgar G. Rex, Gordon M. Heisler, Gerhard Reethof (Mechanical Engineering), Donald D. Davis (Plant Pathology), Henry D. Gerhold, Kim C. Steiner and Alden M. Townsend.

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## HARDWOOD PLANTING STUDY BEGINS

What can be done to protect planted hardwoods from excessive deer browsing? Hopefully, some answers will be forthcoming based upon a cooperative study recently initiated by The Pennsylvania State University and USDA Northeastern Forest Experiment Station. Sandy Cochran, Area Forest Resource Agent at Ridgway reports that four different species of hardwoods; yellow poplar, white ash, red maple, and black cherry will be replanted this spring on a McKean County farm site. Six anti-deer protection techniques will be tested for their effectiveness. Control of woody and herbaceous competition will be carried out with several different herbicides applied in spots and strips. Personnel involved in the planning and establishment of this study are Bob Shipman, Ed Farrand, Crick Craver, and Jim Finley from Penn State and Dave Marquis and Rich Ernst located at the Northeastern Forest Experiment Station.

--Bob Shipman

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## PREDICTING WATER NEEDS

"Some Methods for Meeting Pennsylvania's Water Needs in the Years Ahead" was the title of a paper presented by Peter W. Fletcher and William E. Sharpe, at the 7th Pennsylvania Environmental Conference (PEC) at Camp Hill on February 23, 1977. This report was based on studies supported by funds provided by the Office of Water Research and Technology, U.S.D.I., as authorized under The Water Resources Research Act of 1964 through the Institute for Land and Water Resources at Penn State.

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#### ALLEGHENY SECTION - 1977 WINTER MEETING

The fifty-fifth annual winter meeting was held February 2-4, 1977, at the Quality Inn, Carlisle, Pennsylvania. The meeting was well attended with 182 section members signing in at the registration desk.

The fellows and girls who were present for the Wednesday night ice-breaker were entertained by some excellent video-tape footage of the bi-centennial Log Raft trip down the west branch of the Susquehanna.

"Regulating Forest Practices" was the theme of the meeting. There has been a lot of activity recently by federal, state, and local governments to regulate or control silvicultural practices and timber harvesting. The program, put together by Rick Carlson, explored forest practice regulations at all three levels of government. Perspectives were offered by professional foresters, the forest industry, and environmental groups.

At the federal level, discussion included the recently enacted National Forest Management Act, the federal Water Pollution Control Act, and EPA's proposed Model Forest Practices Act. At the state level both statutory regulations such as California's and Oregon's, and self-imposed guidelines, such as Maryland's and New York's were explored. At the local level, recent developments in zoning regulations that control timber harvesting were discussed.

The banquet, held on Thursday night, proved to be one of the best in years. Besides a good meal, the group of 151 were treated to a very enlightening "political speech" by the master of ceremonies, Jim Speice of the Hammermill Paper Company. Other entertainment was provided by the "Dutch Band" and artist-lecturer William Rohrbeck. Lynn Frank, Pennsylvania Bureau of Forestry, was presented the Section's Forester of the Year Award and George Moorehead, retired State Forester of New Jersey, was given the Section's Outstanding Service to Forestry Award.

Everyone enjoyed the art display which was available throughout the meeting.

The sale of Forester neckties, "Little Yeller Buttons", and the picture raffle netted approximately one hundred and fifty dollars for the Foresters' Fund. The meeting was hosted by the Keystone Chapter.

-- Jim Pflieger

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## EDITOR'S COLUMN

When I offered my congratulations to Jim Nelson on his election to the chairmanship at the Dover meeting, in February, 1976, he held onto my hand with a vice-like grip while he asked if I would serve as the newsletter editor. He only released his grip after I replied "Okay". The realization of what I had accepted didn't strike home until several weeks later, as the deadline for the first issue approached and I was still looking for articles to fill 12 pages of blank space.

Needless to say, the April 1976 issue was printed and mailed-- in May-- but since that time succeeding issues have appeared on time, thanks to the efforts of a number of people. The previous editor, Bill Grafton, provided a list of guidelines, with priorities, and many helpful hints. Requests to the ten Chapter Chairmen, Section officers, universities, and the national office produced, and continue to produce, a fresh supply of news items for each issue.

After getting four issues out, the whole process is now a fixed routine, analogous, however, to driving a grand prix race without first gear; getting started is a little slow. The speed of the routine, from start to finish, is more or less directly related to the promptness and quantity of articles for publication. While the articles submitted to date have been fine, contributions from more people would certainly "spruce-up" the Newsletter. Timely items, of a newsworthy nature are welcome from anyone...Enough said about this.

For the past five months, the Sections have been exchanging newsletters. The result has been interesting. Other Sections are expressing many of the same concerns that ours is. The New York Forester, for example, printed an article in their February '77 issue regarding the proliferation of local ordinances regulating forestry practices; the topic of our most recent Winter Meeting!

Occasionally, we'll comment on, or reprint, articles from other newsletters. The bit of light reading in this issue concerning the plurality of species, from the Kentucky-Tennessee Newsletter, is the first. Others may appear in later issues.

--Alex Day

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### ENGLISH IS A BUNCH OF CONFUSING WORDS

(when describing fish and animals and birds)

If you think this Newsletter is just a rag with no educational value, you are probably right. So, just kick off your boots and lean back and enjoy the following for whatever it's worth. If you learn something in the process, that's your lookout! I wish I'd written it but I didn't. You can blame it all on Ted McCawley of the Remington Arms Company.

The English language (Ted says) is a confusing tongue at best. When it comes to the words used to describe the various birds, fish and animals of the world, however, the confusion turns to dismay. Even the same species are sometimes called by different names under various conditions.

For example, a group of geese on the water is called a plump. When airborne, however, these same birds become a skein. Put them on the ground and they are called a gaggle.

Ducks are just as much of a problem. It's proper to call a number of them a flock -- sometimes. On the water they are called a paddling except for teal which come in a coil, spring, knob or bunch.

In flight you see a team of ducks except for widgeons, and it's proper to call a group of them a bunch, flight or company.

Sometimes the collective nouns are very descriptive -- a clamor of rooks, a murder of crows, a mutation of thrushes or a murmuration of starlings.

Mammals have their descriptive terms, too. Several camels are known as a rag. A group of mules is a barren, while a number of sheep are called a hurtle or flock.

The business goes on and on. In the fish world, perch come in packs, smelt in quantities and herring in shoals

Some years ago a story appeared in the Richmond (Va.) Times-Dispatch which sums up this mumbo-jumbo pretty well. Here it is:

"A flock of ships is called a fleet; a fleet of sheep is called a flock; a flock of girls is called a bevy; a bevy of wolves is called a pack; a pack of thieves is called a gang; a gang of angels is called a host;

"A host of porpoise is called a shoal; a shoal of fish is called a school; a school of buffalo is called a herd; a herd of seals is called a pod; a pod of whales

is called a game; a game of lions is called a pride;

"A pride of children is called a troupe; a troupe of partridges is called a covey; a covey of beauties is called a galaxy; a galaxy of ruffians is called a horde; a horde of rubbish is called a heap; a heap of oxen is called a drove;

"A drove of blackguards is called a mob; a mob of worshippers is called a congregation; a congregation of theatergoers is called an audience; an audience of peacocks is called a muster; a muster of doves is called a flight;

"A flight of larks is called an exultation and if they are starlings it's a murmuration; a murmuration of bees is called a swarm; a swarm of foxes is called a skulk; a skulk of pigs is called a sty; a sty of dogs is called a kennel; a kennel of cats is often called a nuisance."\*

\* And a nuisance is a snowmobile or trail bike without a muffler, at least that's what the editor of Pennsylvania Game News thinks is a nuisance.

Note: The above column appeared in the February issue of the Kentucky-Tennessee Section newsletter.

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## NATURAL AREAS - NATURAL DIVERSITY: ARE THEY THE SAME?

by John Nutter

Oh, a sleeping drunkard up in Central Park,  
And a lion-tamer in the jungle dark,  
And a Chinese dentist and a British queen,  
All fit together in the same machine.  
Nice! Nice! Very nice!  
So many different people in the same device.

I came across that poem in the concluding chapter of a textbook on conservation. It introduced a section entitled, "Hidden Relationships and Unforeseen Ramifications." It seemed the appropriate introduction to the topic I'd like to discuss with you today, the preservation of natural diversity.

Let me begin by quoting from more prosaic sources. Your (section) newsletter recently carried an opinion by Jim Nelson urging you to take advantage of the opportunity to preserve examples of forest ecosystems and to protect rare and endangered species.

But an article in the January Journal of Forestry on the endangered species law complained, "Plainly the endangered species act is complicated. Its unraveling promises headaches for all involved, and its precise effects are as yet unclear."

On the other hand, just two months prior to the publication of that statement, the magazine of The Nature Conservancy ended an article on endangered plants on an optimistic note. "There has been far too much unproductive wringing of hands over endangered species. Among the many environmental tasks facing us, the preservation of endangered plant species is one of the most accomplishable. Let's just do it!" Is it really that easy? Just what is at stake? In July of 1975, the Office of Endangered Species, following the mandate given it by Congress in the Endangered Species Act of 1973, published a list of about 2,100 species of vascular plants thought to be extinct, endangered or threatened in 49 states. Hawaii, because of its fragile island flora, was treated separately. For the mainland states, the listed species represent about 10% of the higher plants. This fact alone seems cause for the headaches in the Journal of Forestry article. Have we mismanaged our affairs that badly? Not really, for, as with many statistical arguments, on closer examination the picture changes.

Official pronouncements on these species no longer refer to them as "rare," but rare they are, and in most cases, rare they have always been. Does that mean we should not be concerned about their preservation? Absolutely not! But it does mean that they do not occupy today, and probably never did occupy, much space. For the most part, they are either localized endemics or more widespread species which occupy scattered parcels of specialized habitat. There do not seem to be any currently threatened plant species whose situation is analogous to the wolf or the peregrine falcon, that is, widespread dominants which have been brought to the edge of extinction in modern times. Some species are now threatened by exploitation, mostly cacti and orchids for commercial value, but the great majority of the endangered and threatened plants are being lost because of habitat destruction.

Let's narrow our focus to the statistics for endangered plants. The Interior Department published 60 days ago a list of just those plants, looking only at those in the continental United States. The list includes about 750 species. I have read that about two-thirds of those species are on federal lands. Since we are concerned here today with a five state region in the East where the federal government is not the large landholder it is in the West, I will discount the statistic that two-thirds of the endangered plants are on federal land, and will assume that in the Allegheny region, one half are on public land or on private land which is managed to preserve diversity, such as Nature Conservancy preserves. Assuming for the discussion that those species on public lands will be adequately protected through wise management, that leaves us one-half the endangered species in this region to be protected through further action. How many species does that entail? By my count, that is six.

Six species are hardly worth any more talk. With the knowledge and ability in this room, the job seems so easy to handle that we could do it before this gathering is over. However, before I lull us all into complacency, let's look at the list of threatened plants. As most of you probably know, threatened plants are those which could become endangered, and as a result they are afforded the same attention as the endangered species. In the continental U.S., they outnumber the endangered species, and in this region they number 46. To use the formula of one-half which still need protection, we are faced with a total of about 30 endangered and threatened species in this region on which preservation action should begin.

As soon as we start talking about actually preserving endangered and threatened species, we are, of course, talking about preserving habitat, or to use another term, natural areas.

Your profession has been involved in natural areas activities for years. The Forest Service Research Branch has been a leader in the federal movement to establish Research Natural Areas on federal lands. By my latest count, you have eleven such areas in your region. Your Society itself has, according to a 1972 report, identified some 281 natural areas across the country which represent most of the forest types in your forest ... classification system.

Now, I've broadened the focus of this discussion from endangered and threatened plants to include the forest ecosystem. We are getting closer to looking at the whole range of natural diversity. Let's look at some figures again. The Western Pennsylvania Conservancy's preliminary list of natural areas identified 54 SAF types in Pennsylvania. In addition, the Department of the Interior has tentatively listed 15 endangered and threatened plant species in the state. According to the Western Pennsylvania Conservancy inventory, eleven SAF cover types are not at all represented in natural areas in the state, and seven have incomplete protection. If we again apply the one-half formula to the endangered and threatened plants and the forest types, we are left with 17 forest types and plant species that are unprotected in one state. Now, I don't want to get carried away with the figures, for what is beginning to emerge is the problem, or I would prefer to say the opportunity; not the task of preserving the limited space represented by only 17 species and communities, but rather the more practical task of locating the points of the landscape where such diversity can best be preserved.

Finding endangered and threatened species and plant community localities is a major objective of The Nature Conservancy's State Natural Heritage Programs. These programs are, very simply, processes for inventorying the natural diversity of a state or region. The Heritage Program assists an appropriate unit of state government in creating a process for gathering, managing, analyzing and utilizing information on ecological diversity. There are currently nine Heritage Programs in operation around the country, one in your region - in West Virginia. That program is managed by Frank Pelurie, the organizer of this event. Ron Fortney from the West Virginia Division of Parks assists the program for the state.

The first step of a Heritage Program is simply to identify those features of the natural landscape which make diversity. Those features become the targets of our inventory. Ideally, we would take our list from Noah and try to find two of everything. Short of that, we divide our shopping list into four classes; plant communities, special species (which include but is not limited to endangered and threatened animal and plant species) and aquatic features. A fourth class includes those features which do not fit into the first three, such as geologic features. We refer to the units of this classification system as the elements of diversity.

Our next step is to gather and store, in a systematic way, all information we can find on the actual occurrences of these elements. We start our inventory by gathering information from secondary sources, literature surveys, herbaria, museum collections, and the testimony of experts. Our primary source of information is the landscape itself. We tap that source only after we have exhausted the others.

The information is stored in a number of ways. Most basically, it is stored on U.S.G.S. maps. A mark is simply put on the map to locate an element. A number references the mark to a manual file. All information we have on the occurrence of an element, for example an endangered orchid, is then stored in the manual files. In addition, a limited amount of data is stored in a state computer. The most important information on the occurrence of our orchid can as a result be retrieved, manipulated and updated with ease... Our most mature Heritage Program in the state of Tennessee has recorded on maps and in the manual and computer files over 2,000 occurrences of the elements on our classification list for that state. The number grows daily as our researchers comb herbaria, museums, theses and other sources of information. Our West Virginia program has over 600 records.

The purpose of this very systematic stored data system is to give to the state an overview of its diversity. How many of each species, community, or aquatic feature exists? Where are they actually located?

The advantages of such a system are many. In the first place, we have created an ongoing inventory which has the resources, those of a state, behind it to keep it in continual operation. We are not conducting a point of time inventory. The information is not out of date as soon as the inventory results are published. By keeping the process going and by using an automatic data stored system to file and update data, our information base is constantly fresh.

In the second place, by drawing from secondary sources we are putting in one data bank all the known information on the existence of ecological diversity within a state. This gives us a picture which would otherwise be impossible to get. It also directs us toward searching the primary information source, the landscape, for those features on which we know we need information... As the data base grows we become more and more confident that the element types with a few reported occurrences are those which most deserve protection.

Still another advantage of this system is that we are storing information on a medium familiar to most land use decision makers, the U.S.G.S. maps. We are using a common language. Power route planners, highway planners, developers, park planners and foresters have access to information not before collected, stored and so easily displayed and retrieved- in one place. Not only can we show a highway planner where an endangered plants species actually occurs, but we know from the data base just how many other occurrences of that species exist in the state. Rather than irrationally hinder development, we can rationally guide it based on sound knowledge

At this point in any discussion of a Heritage Program, it usually dawns on someone that if this system really works, we are putting into the hands of many people the information on the localities of endangered and threatened species; information that might best be locked away in a bank vault, or better yet, in the mind of a single individual. I suppose we will always face that argument. I can only respond that ignorance has probably wiped out more of our diversity than any other single factor. We simply didn't know what we were doing. For every peregrine nest or coveted orchid that might get "ripped off" because of the perfidious use of information in a Heritage system, a greater number of the elements of diversity can be saved simply by the knowledge of their existence.

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Back to natural areas. The natural areas that most deserve preservation are those which most preserve diversity. The title of my talk is "Natural Areas - Natural Diversity: Are They the Same?" The answer is sometimes. The best example I know to prove this is The Nature Conservancy's own efforts in its early days in the Northeast. We set out to protect natural areas. Such areas were defined by some vague criteria which included pristineness and prettiness. The result was that we saved almost every spot that hadn't been logged in the past century. These places turned out to be those hardest to log; gullies with hemlocks. We saved more hemlock gullies than we know what to do with, and probably passed up a number of chances to save diversity because we didn't know what or where diversity was.

Because we now search for and record the localities of the elements of diversity, plant, animal and community, we are able to concentrate our attention on areas which contain the most diversity. Furthermore, when we compare area to area, we compare known component parts, or elements, to other known parts. Apples are compared to apples, not fruitbaskets to fruitbaskets. Limited resources, time and money can be objectively spent on the highest priority.

The natural areas that deserve protection are those areas that fully protect the range of natural diversity. For all I know, that may be on the grounds of this Holiday Inn, because that's where the last, best, biggest or smallest of something exists.

A number of states represented here already have a spectrum of protective devices in hand. Our host state traces its concern with natural areas back to 1929. New Jersey's natural area legislation was passed in 1961. The Nature Conservancy has studied the natural area activities in every state in the nation and will soon publish the results of that study in cooperation with the Department of the Interior. We are ready to help any state pursue its natural area activities from our vantage of a national perspective.

Finally, if we truly want to protect diversity we must have a national, even an international, perspective. We are working today on the former through a project which is collecting and storing information on scientific reserves across the country. This national data banking project, like our Heritage Programs, uses a combination of map and manual and computer files to store and analyze information. It is already letting us know what diversity is protected today on a national level. As this system is integrated with our individual state systems, we will have a better and better idea of the status of ecological diversity in our nation.

I am getting too far afield. I started my talk today with the thesis that protecting the endangered and threatened plant species in the Allegheny region is a very manageable task. I stand by that statement. Let's do it.

\* \* \* \* \*

These remarks were presented to the Allegheny Section, Society of American Foresters during the 1976 Summer Meeting held at State College, PA., 19 August 1976, by John Nutter of The Nature Conservancy, 1800 North Kent Street, Arlington, Virginia 22209...Mr. Nutter's remarks were edited by the Allegheny News.

SUMMER SECTION MEETING  
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 THEME - Forest Land Use and Energy  
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