

# *THE MAINE FORESTER*



*1988*



# **THE MAINE FORESTER 1988**

Published Annually by  
The Students of the  
**COLLEGE OF FOREST RESOURCES**  
University of Maine

# DEDICATION

This years *Maine Forester* is dedicated to Dr. David B. Field, the Edwin L. Giddings Chaired Professor of Forest Policy. The Giddings Professorship was established in honor of Edwin L. Giddings a former professor of Forest Management and Director of the School of Forestry by his late wife. The Giddings Professorship was created to promote research in Forest Policy. David Field is a Professor of Forest Resources and Chairman of the Department of Forest Management in the College of Forest Resources. Representative of the fine faculty in the College of Forest Resources, Dr. Field exemplifies the ideals of our profession with the highest regard toward professionalism. His accomplishments whether in the College, in the community, or in government service, serve as inspiration to students seeking the rewards of a career in forestry. College of Forest Resources Dean Fred Knight says, "Dave is highly motivated to give the best professional education in forestry."

A Maine native, Dave's family has long had ties to the Maine woods. While a youngster, Dave made a commitment to the Appalachian Trail and has served as the Maine Appalachian Trail Club President for ten years. Recently, *Down East Magazine* honored him with the Environmental Award for 1988 for his dedication as a leader on the Appalachian Trail. He has spent a great deal of energy to secure a permanent trail corridor through Maine for all generations to enjoy.

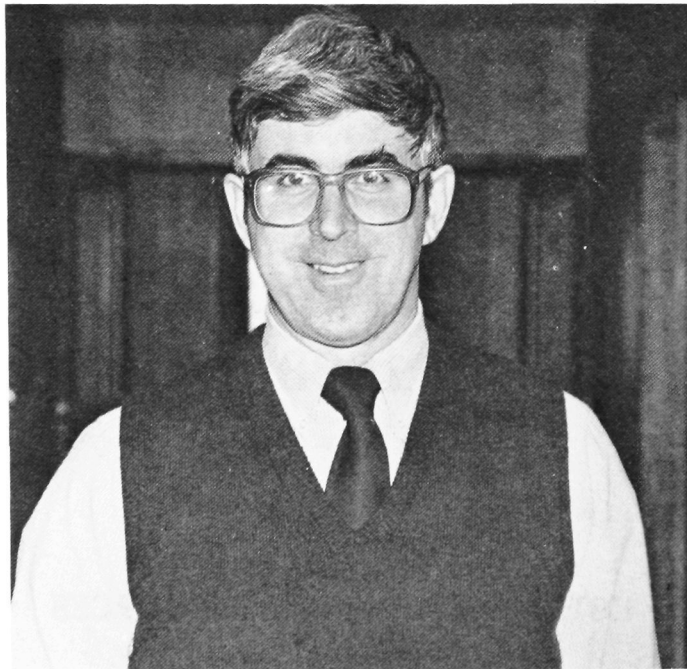
The definition of forestry reads, "the science, the art, and the practice of managing and using for human benefit the natural resources that occur on and in association with forest lands." Three words stand out in that definition which lay at the core of Dr. Field's professionalism, "for human benefit", they represent the students he teaches, his colleagues, his family, and the many other citizens who he has worked with and assisted.

A professional, Dave has been a member of the Society of American Foresters (SAF) for twenty-five years, an ex-

ecutive committee member and has served on several working groups at the national level. He chaired the Maine Division of SAF, was on the executive committee and has chaired and worked on many projects. A brief review of professional activities which Dave has dedicated himself to is as follows: Chairman, Eastern Maine Forest Forum; Editor, *Maine Forest Review*; Chairman, Technical Committee, Northeastern Regional Fuelwood Project; Member, the Forest Resources Group; an organization formed to develop an effective dialogue on major forest policy issues among leaders who represent various interests of the forestry and forest products communities in Maine; Chairman, Timber Working Group, Maine State Forestry Planning Committee; Chairman, Economics Task Group and member, Recreation Task Group, Maine Forest Resources Assessment Program; Member, Board of Directors, Holt Woodlands Research Foundation; Member, Advisory committee for the Maine Audubon Society TV series "The Forest"; Appeared on MPBN TV series "Yankee Woodlot"; and a member of Maine State Comprehensive Outdoor Recreation Plan Advisory Committee, CANUSA Program, Baxter State Park Scientific Forestry Management Area Advisory Committee, and Eastern Spruce Budworm Research Work Conference Executive Committee. Most recently, Dave has been appointed by the Governor of Maine to work on the Maine Commission of Forest Land Taxation. He also is the author of 28 publications, 11 papers, and eight consulting reports in forest economics, operations analysis, and forestry financial analysis.

His career in forestry spans from the U. S. Forest Service at the White Mountain National Forest in Gorham, NH to Graduate Research Assistant and Instructor at the University of Maine and Purdue University, Lecturer and Assistant Professor in Operational Analysis at Yale, Associate Research Professor in Forest Resources in the Cooperative Forestry Research Unit at the University of Maine, to his current position as E. L. Giddings Chaired Professor.

David P. Fournier







## GREETINGS FROM THE DEANS

The theme of the 1988 MAINE FORESTER is appropriately centered on the preparation of Undergraduates for professional careers. The educational programs of the College have been continually subjected to change since the original program was established in 1903. Throughout the eighty-five years which followed, Maine graduates have been highly respected and well educated with a thorough knowledge of their professional fields. Many employers have complimented Maine graduates for their ability to be immediately effective on the job. The Dean heard these comments while a student in 1945 and often since then.

You have a proud tradition to uphold and we believe that all who graduate in the Class of 1988 are as well prepared as any who may have graduated in the previous 84 years. We will continue to graduate professionals who must meet the further challenges of a difficult to predict future. Are our professional programs designed to meet the needs of the nineties? How will the professional requirements change for managers of the mid nineties compared to

1988?

These questions and many others are difficult to appraise because no one can truly predict the future. However, there are some guides available to us that suggest that there will be change but perhaps not as drastic as some might imagine. The degrees you have earned will be appropriate to 1995 provided you keep up to date through continued study. We know that the forests of Maine will still cover about 90% of the land area and we know that world demand for forest products will have increased considerably by 1995. We also see signs of continued pressure on all resources from a growing concerned population.

Professional resource managers will need much of the technical preparation that is presently required and will have to continue to develop greater skills working with people. There will be more opportunities for resource managers but their jobs will continue to increase in complexity as the decade progresses. There seems to be no lack of opportunity or challenge for the graduates of the College.



**THE LOBBY BRIDGE:  
NUTTING HALL**

We envy each of you as you enter the resources profession in 1988. You will become the resource leaders in the nineties. Those years will be vital to the future of our country and the world. You will be a strong factor in the long-term stewardship of our natural resources. The diversity of our resources must be maintained, the productivity of our forests must increase, and the pollution by our human masses must be curbed. Your preparation here as an undergraduate will help in reaching those goals.

Since publication of the 1987 MAINE FORESTER, our College has welcomed Dr. Raymond O'Connor and Dr. Daniel Harrison to the faculty in Wildlife; Dr. Robert Seymour has been appointed to the Curtis Hutchins Professorship in Quantitative Silviculture; Dr. Robert Forster has joined the faculty in Forest Management and Dr. Russell Briggs is our newest faculty addition as a member of the Cooperative Forestry Research Unit staff. We welcome each of these new faculty to the College and expect that they will make a significant impact on the abilities of future graduates. We were sorry to accept the resignation of Dr. Patrick Brown who accepted a position in West Virginia.

During this year the College received the good news that several of our professional programs had been reaccredited by the Society of American Foresters. Katherine Weber is commended for her work on the preparation of a very thorough self review for the College. Three degree programs have been accredited through 1992; the B. S. in Forestry, B. S. in Forest Engineering and the double B.S. degree program in Forestry and Wildlife Management.

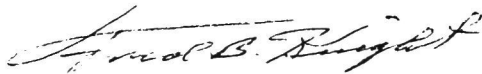
Scholarships for students are expressions of strong sup-

port for you and for the College. Several new ones were established this year. The Sawyer Environmental Facilities Co. has established two scholarships in the College covering full tuition costs for a forester and a forest engineer. These amount to about \$1,600 per year and are awarded to juniors and continue for two years.

Two new endowed scholarships have been established, the Fred and Helen Holt scholarship is the result of a gift by them and the Charles Sleight memorial scholarship has been endowed by family, friends and colleagues of Mr. Sleight. In addition, Albert & Leone Nutting and Lawrence & Louise Robbins have made generous additions to the Nutting and Robbins scholarship endowments.

If we are assured that future generations of citizens will enjoy a superior quality of life we must be responsible for the stewardship of our forest resources. This means that we will continue to produce the best possible graduate professional resource managers. We expect opportunities for graduates will continue to increase during the nineties. The placement of graduates from the 1987 class was very good and we expect that trend to continue in 1988. The opportunities will be there if you are willing to meet the requirements.

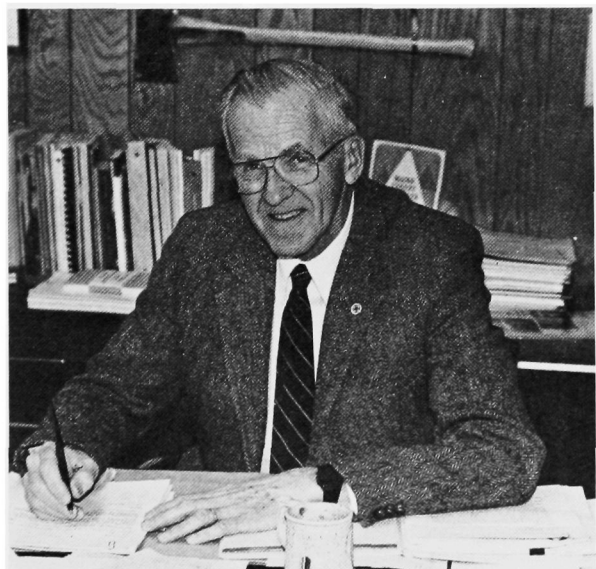
We congratulate all of you for your diligence and demonstrated skills. We have been fortunate to have met each of you in the Class of 1988. We feel that we know several of you quite well and wish that could apply to everyone in the class. We wish for each of you success in your career but more important is our hope that you may have peace and happiness for the remainder of your lives.



Dean



Associate Dean



DR. FRED B. KNIGHT

# *FEATURE ARTICLES*



# **PROFESSIONAL DEVELOPMENT: A New Program in the College Of Forest Resources**

The College of Forest Resources, through the generosity of Mr. Bradford Wellman, was able to establish in September 1986 a professional development program designed to meet the educational needs of practicing foresters and other natural resources professionals. Using traditional and innovative approaches, the program will serve professionals seeking to further or broaden their education background through continuing study.

Continuing education encourages forestry and natural resources professionals to further their knowledge and skills through formal programs of advanced study. At the same time, such study provides for peer recognition through the issuance of certificates and various levels of credits. The program is under the direction of Dr. Christopher W. Murdoch, Coordinator for Professional Development, a professional position reporting to the Dean of the College of Forest Resources.

In addition, the Professional Development Office will help train students enrolled in the College's new Master of Forestry program by offering credit courses in practical and applied forestry. The Office for Professional Development also intends to investigate professional development programs in natural resources for elementary and secondary school teachers interested in furthering their education or receiving recertification credits.

During its first year of operation, the Professional Development Office presented programs which were attended by 682 professionals. Program highlights included: the establishment of an Annual Conference & Workshop for Licensed Foresters in Maine and an Annual Summer Institute in Forestry & Environmental Sciences for Educators; the creation of a series of week-long intensive courses beginning with Forestland Appraisal; and two programs dealing with hardwood silviculture. In addition, a Resource Center for teachers within the College was organized and will be implemented in 1988, and a student intern program was established and implemented to provide needed assistance to the program.

The Professional Development Office was and will remain active in student activities within the College as part of its mission to encourage professionalism and highlight public service.

I would like to introduce the Professional Development Office staff for 1987-1988:

Christopher W. Murdoch, Ph. D., Coordinator

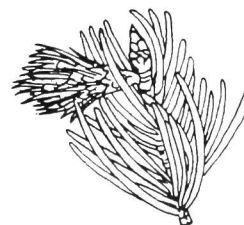
Linda Hawkins, Secretary

Tim White, Student Intern

Kurt Swengel, Student Intern

Harry Zinn, Student Intern

David Spicer, Student Aid





# ON BECOMING A PROFESSIONAL FORESTER

Charles A. Gresham  
Associate Professor of Forestry  
The Belle W. Baruch Forest Science Institute  
of Clemson University  
Georgetown, South Carolina

As you already know or have been told, there is much to be learned to be a capable forester. Your curriculum probably started with courses in the basic sciences of chemistry, physics, biology, and calculus along with other general education courses like english, history, and psychology. Later you took more forestry courses and some basic courses in other sciences like geology or zoology. Once you graduate and have a few years experience, you will wish you took more courses in an area that you cannot foresee at the moment. For example, after three years of research at the Baruch Institute, I realized that a few more soils courses would have been well worth the effort.

The technical forestry and non-forestry courses produce an educated graduate, but I feel that a professional forester must have acquired traits that are not stressed in technical courses. These traits can be developed during your undergraduate study and curriculum. The purpose of this article is to present some ideas of how you can acquire characteristics of a professional during your undergraduate, and perhaps, graduate study. These ideas are an expansion of thoughts presented in a "My Chance" commentary in the January 1986 *Journal of Forestry*.

## WHAT IS A PROFESSIONAL?

Everybody knows who professionals are, they are doctors, dentists, lawyers and business executives. You can easily picture them in their clinical coats or three-piece suits dealing with people and their problems. However, putting the mental images into words is much more difficult.

The dictionary definition of "professional" contains several key words like "technical or ethical standards" and "learned study" among the usual circular definitions. A good description of a professional was given to me by Mr. Fred W. Haeussler, a past President of the Society of American Foresters. Mr. Haeussler advised me that U. S. Supreme Court Justice Brandeis developed three tests to determine if an occupation was a profession. These tests are:

1. Was the necessary preliminary training intellectual in character, involving knowledge and to some extent learning, as distinguished from mere skill?
2. Is it an occupation which is pursued largely for others and not merely for oneself?
3. Is it an occupation in which the amount of financial return is not the accepted measure of success?

By combining the mental image of a professional with the tests above, we can conclude that being a professional is an attitude and ingrained manner developed from learned study and practicing a people-serving occupation. More specifically, there are several definite, visible characteristics that distinguish a person as a professional, and these characteristics can be developed in college.

## CHARACTERISTICS OF A PROFESSIONAL

An editorial in the December, 1973, *Journal of Forestry* titled "professionalism: Another Look" contained six characteristics of a professional and to this list a seventh was suggested to me by a forestry professor on the Clemson campus. These characteristics are:

1. Professional (4-year) education,
2. Job experience,
3. Adhering to a Code of Ethics,
4. Workmanship,
5. Dedication,
6. Integrity,
7. Participation in professional groups.

As you read the list you could pretty easily visualize how each applies to your image of a forester on the job. The first three characteristics generally describe the requirements for the job and the last four relate to personal and work habits.

I contend that these characteristics also apply to you in college and that if a conscientious effort is made to adopt them, this will make you a more professional forester at graduation.



# APPLYING PROFESSIONAL CHARACTERISTICS

## Professional Education

Since you are in a four-year forestry curriculum, the possession of a BS in forestry should not be a major question. But, did you take advantage of all of the educational opportunities available on campus? Did you use the elective hours to improve your management abilities by taking technical writing, accounting, and sociology courses? Other aspects of this characteristic include attending the many seminars and short courses that relate to forestry. These generally cost little more than the time involved.

I feel that the most important aspect of this characteristic, beyond obtaining a degree, is developing the habit of reading forestry-related technical journals. This is part of continuing education and will be critical to your remaining educated after graduation. Many of the journals are difficult to read unless you are doing research in a particular area or if you have made an effort to understand the terminology. However, such journals as the *Southern Journal of Applied Forestry*, *Northern Journal of Applied Forestry* and *Western Journal of Applied Forestry* or *Forest Farmer* are written in a much less technical style and can be more easily understood.

## Job Experience

Forestry-related job experience can be gained during the school year and during the summer. While on campus one could take advantage of departmental work-study programs, which gives you a taste of research in general and one professors research in particular. Field trips of botany and zoology courses offer opportunities to see different vegetation types that you might not otherwise be able to see. Finally, the student chapters of forestry and conservation organizations sponsor field trips and other activities that provide valuable experience.

Working summer jobs with forest industry or the Forest Service is an excellent way to greatly increase your education. Similarly, there are work-study arrangements between a forest industry and a forestry school whereby a student will work a semester and go to school a semester. This arrangement also gets your foot in the door when it comes time to find a job.

## ADHERING TO A CODE OF ETHICS

If you have read the Society of American Foresters Code of Ethics (page 22, December 1987 Journal of Forestry), you realize that it was written for the practicing forester. Its application to you boils down to basic honesty in large and small matters.

Ethics for a professional forester also include an "Environmental Ethic". This is a personal philosophy about the use and management of natural resources. For example Gifford Pinchot and President Theodore Roosevelt expressed their environmental ethic in words like "efficiency, wise use, for the public good and the lasting good of men." Have you developed your ideas about the extent of environmental management?

## Workmanship

To me, this characteristic relates to the quality of what you produce, not only the reports and papers you write, but also the kind of person you make of yourself. Examples of applying this characteristic include turning in reports and papers that have been carefully prepared and including your name, test name and date on class tests submitted. Class and lab attendance is another visible sign of one who is serious about getting an education. Finally classroom

dress is a reflection of workmanship and need not be coat and tie or ragged blue jeans and heavy boots, but rather a reasonable compromise that reflects some degree of maturity.

## Dedication

This characteristic goes hand-in-glove with other characteristics. Without the dedication to self-improvement, habitually reading journals will not occur, and without the dedication to spend the time necessary to carefully prepare and check reports, you will not produce the quality product you are capable of producing.

## Integrity

Integrity is directly related to the discussion of the Code of Ethics in which honesty is the main theme. Examples of applying this to you include admitting ignorance when asked a question for which you are not positive of the answer and giving your honest opinion even though it may be unpopular with the group.

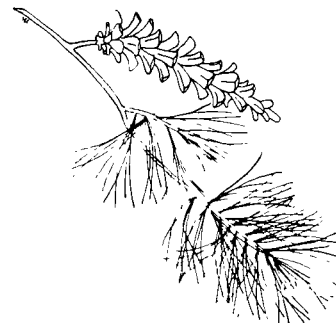
## Participation in Professional Groups

Being a forester and not being a member of a professional society or group is like a fish out of water; it is still a fish, but a dead fish. Society membership includes subscriptions to journals which discuss contemporary forestry issues and technology, and gives you a chance to meet foresters from your area at various chapter and regional meetings. A very valuable advantage to you is the opportunity to meet potential employers and talk with them about their companies. Also some employers may be favorably impressed during the interview if you have been active in the SAF or similar organization while in college.

## THEREFORE . . .

So what does all of this amount to and is it important? The answer depends on your current understanding of contemporary forestry and the job market. If you aspire to be a macho, bull-of-the-woods forester, who spends his days in the field, then this article is not for you, nor is a BS in Forestry. You can attend a two-year technical program, get an associates degree and spend your entire career as a technician, marking timber, or supervising logging operations. However, if you see yourself advancing in a private or governmental forestry organization, then you should consider adopting the characteristics of a professional forester. By doing so, you will make yourself more employable in the short term and will increase your chances of rapid advancement in the long term.

Charles A. Gresham 1988





## RETURN OF THE WOODLAND CARIBOU

### AN UPDATE

By Lisa M. Comly

One hundred years ago, woodland caribou freely roamed the state of Maine, but for reasons still uncertain today, caribou disappeared from the state in the early 1900's. In 1963, Maine Inland Fisheries and Wildlife attempted to re-establish caribou by releasing 23 Newfoundland caribou on Mount Katahdin. The animals were occasionally resighted over the next two years and before they disappeared. The causes of the failure of this reintroduction program are uncertain, but poaching, disease, and failure to regroup for mating have been hypothesized as possible contributing factors.

In 1986, a group of wildlife officials, legislators, and private citizens decided again to attempt a reintroduction of woodland caribou to Maine. A private, non-profit organization, The Caribou Transplant Corporation was formed, and an initial contribution of \$50,000 by former governor Horace Hildreth got things rolling.

In December of 1986, 27 caribou (3 stags and 23 does) were captured on the Avalong Peninsula in Newfoundland and began their 1200 mile journey to the Ungulate Research Facility at the University of Maine. Unfortunately, four caribou succumbed to stress-related disease during the transplant, and one stag was lost 2 weeks later due to digestive failure. The 22 remaining caribou adjusted well to their new home and accepted their new diet of a pelleted grain ration which was supplemented with lichens throughout the winter.

In spring project personnel and interested citizens throughout the state anticipated the arrival of new calves. Sixteen calves were born to the 20 does between late May

and early June. Most were born within a two week period which is an adaption by caribou to wolf predation. The wobbly-legged calves are easy prey for wolves, lynx, and black bear. Calf losses from predation are reduced by flooding the environment with calves over a short period rather than extending the calving season. Young caribou are very susceptible to predators, disease, poor weather, and abandonment by their mothers, therefore the first few weeks are very critical. Eleven of the 16 calves survived this period. After weaning around 8 weeks, they readily accepted the pelleted food and leafy browse fed to the adults.

Summer came and the adult caribou shed their winter coats for a light hair covering over their black skin. The two stags, Burgeo and Lowell, grew large, intricate racks of antlers and even the young males grew small sets of antlers. Summer is a stressful time for caribou in the wild as they try to escape hoardes of mosquitoes and blackflies. Fortunately this was not a major problem for the herd at the Ungulate Research Facility; rather, summer was a time to rest and increase weight.

In early September, the stags shed the velvet from their antlers and polished their racks on trees in the enclosure in anticipation of the October mating season. Lowell's 28 point double-shovel rack and Burgeo's 22 point rack were impressive and the target of many photographers.

The "rut" or breeding season was characterized by the sound of crashing antlers as the stags battled for supremacy of the does for their harems. They battled frequently and eventually were separated to reduce the chance of injury from their skirmishes. During this time,

the stags ate little food, drawing from the fat deposits they had accumulated between July and September. Burgeo, the dominant 4 year old stag, was segregated with 12 of the does while 6 year old Lowell and the other subordinate males were segregated with 8 does. Most of the matings occurred over a two week period in mid-October. This two week mating period accounts for the roughly two week calving period in the spring. It is hoped that 15 to 20 calves will be born in the spring of 1988.

During the fall, the calves grew rapidly and are now easily confused with their mothers. The dark summer coat of the caribou gave way to a heavier tan coat. The stags have a heavy white mane and white stripes along their flank, while the females and calves have smaller manes and a single line of spots along their flanks. The bronzed antlers of the stags, so majestic and regal-looking, were dropped in December, and the stags now easily blend in with the rest of the herd.

A new 11 acre enclosure for the caribou was completed this fall. It is divided into winter, calving, and summer pastures, and the caribou are enjoying the new-found freedom of this larger pen. The abundance of cedar and hardwood browse offers a natural supplement to their pelleted grain ration. At the termination of the caribou releases, the enclosure and improvements will be turned over to the University of Maine Wildlife Department in appreciation of their assistance with this project.

At present, the project plans to release approximately 25 yearlings and 2 year old caribou in the summer of 1989,

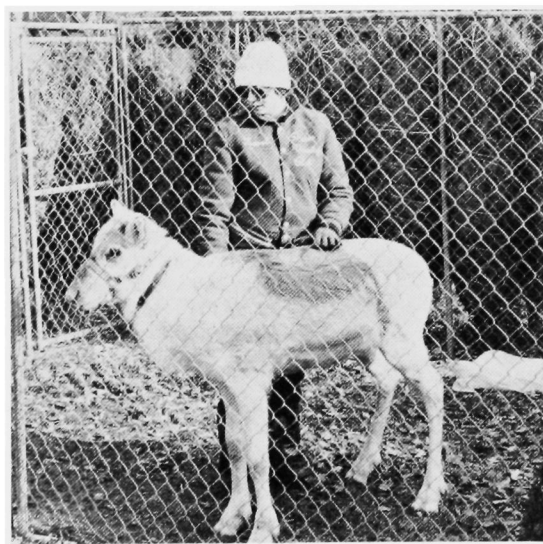
followed by yearly releases of yearlings. All the adults will be released from the nursery herd when the wild herd is producing offspring at a rate which compensates adult mortality. All animals released will be radio-collared and closely monitored. Five potential release sites are being considered and will be evaluated to determine predator populations, forage and habitat suitability. Bracken and Willow, two hand-raised caribou calves, will be taken to potential release sites and observed to obtain information on their habitat preference and diet. These imprinted animals should provide valuable information for final release site selection. Studies will be conducted at potential release sites to determine the density of white-tailed deer and the prevalence of the parasitic brainworm *P. tenuis*, which is fatal to caribou.

The caribou reintroduction is an experiment, and like any experiment, the outcome is uncertain. Regardless, there is much to be learned in terms of wildlife management from the reintroduction. The project entails much research which may be instrumental in providing information on habitats for caribou in Maine and clues to the causes of the disappearance of caribou from Maine and other states and the Canadian provinces around the turn of the century.

The efforts of the Caribou Transplant Corporation have captured the attention of people throughout the state and elsewhere. It's through public interest and support that this project can continue its effort to restore part of Maine's lost wildlife heritage.

January 27, 1988

Ms. Comly is a Junior Wildlife Major.



**Carol Whorden with Bracken:  
A Maine Native!**



# CHALLENGES FOR TODAY'S NATURAL RESOURCE PROFESSIONAL

By Mary Jo Lavin, Ph.D.

## MARY JO LAVIN, Ph. D.

Mary Jo Lavin is Deputy Regional Forester, State and Private Forestry, for the USDA Forest Service's Pacific Northwest Region (Oregon and Washington), responsible for: Aviation and Fire Management, Cooperative Forestry, Forest Pest Management, and Public Affairs Management. For 6 years prior to joining the Forest Service in December 1987, Lavin was a Deputy Supervisor with the Washington State Department of Natural Resources.

Lavin was the Fall 1987 Forest Industry Lecturer at the University of Alberta in Edmonton, and a speaker at the Society of American Foresters (SAF) 1987 national conference. She was a member of the steering committee for the SAF national symposium: Women in Natural Resources, and was a member of the Executive Council of the American Society for Public Administration (ASPA)'s Section on Natural Resources and Environmental Administration. Currently, Lavin chairs the SAF's Human Resources Working Group.

Lavin has been recognized as a Woman of the Year by the Washington State Federation of Business and Professional Women and holds an Outstanding Service Award from the Western Regional Environmental Council. She received her Ph.D. from the University of Colorado in Boulder and is a graduate of the Harvard John F. Kennedy School of Government Executive Program.

## INTRODUCTION

Not too long ago, within the memory of many reading these words, the natural resources professional was a forester who sold timber and fought fires and built the roads needed to do both activities. Today, we are a new generation of natural resource professionals. Reduced dollars, increased public awareness, and broader participation in resource management have resulted in major changes to our profession. Our work environment has changed drastically from the remoteness of an isolated forest to the highly visible public forum. Our work force reflects the diversity and change of a volatile society. And our profession has evolved from a biological science to a management discipline. As individual professionals, we face three major challenges: the challenges of a changing environment, a diverse work force, and an evolving profession.

## THE CHALLENGE OF A CHANGING ENVIRONMENT

Today many of the same foresters who selected an active career which would allow work in the outdoors away from people and paperwork are finding themselves exclaiming, "I was just cutting a tree. Who called a public hearing?" The typical work environment has changed from a remote forest to an urban recreation site, a natural heritage preserve, or a public forum. The isolated forester has now become the environmental steward who is found just as frequently at a public hearing as in the woods. Even the term "environment" has expanded from a biological connotation to a socio-economic focus.

A major topic of discussion and concern relative to the natural resource environment is the issue of urban encroachment. Demographic changes have resulted in movement from the cities to what had previously been underdeveloped forest locations. The forest has now been invaded (if you will) by suburban development.

Characteristic of the invaded forest are the "spot communities" which have sprung up within commuting

distance of major metropolitan areas. These developments lack the community identity which characterizes rural settlements. Their residents often lack any appreciation of the surrounding natural environment. The forest provides simply a setting for a dwelling rather than a valued and appreciated resource. In fact, the concept of the tree as a renewable resource is not acknowledged by the homeowner who removes trees as if discarding furniture -- simply for a change of appearance.

The changing environment forces today's natural resource professional to face complex decisions under the spotlight of high visibility. Increased public awareness and public involvement have bridged the distance from the meeting house to the forest. At times it must seem to the long-term forester that someone has opened the gates of the forest and let all the people in. The first challenge for today's professional is to identify and adjust to this changing environment.

## THE CHALLENGE OF A DIVERSE WORK FORCE

The second major challenge facing today's natural resource professional is the challenge of a diverse work force. Recent fiscal fluctuations have resulted in a major restructuring which has eliminated thousands of jobs and which has made a lasting change in the composition of the forest industry work force. Facing the natural resource professional today, either as member or manager of this work force, is the challenge to build a dynamic team, to have the staff appropriate to meet critical needs, and to incorporate into the organization a work force which truly reflects the external social community.

Building a dynamic team requires combining the experience of long-term employees who have withstood and survived the major cutbacks of a few years ago with the enthusiasm of newly graduated professionals. The challenge is to reassign and, when necessary, retrain existing staff to maintain the intellectual excitement and professional satisfaction critical to increased productivity. The object is to build a dynamic team with sufficient bench strength of experience and enthusiasm to field an appropriate combination for any social or economic change.

Ensuring the appropriate staff for meeting sometimes conflicting demands has given rise to an ongoing controversy about the benefits of a generalist versus those of a specialist. The challenge is to assess which skills are most needed in today's natural resource environment.

Until a few years ago, the all-purpose forester or generalist was the preferred alternative. Today, at a time when knowledge demands have increased in both number and complexity, the specialist often provides the most critical assistance for the natural resource manager. The challenge resulting from the choice between generalists and specialists is ensuring the availability of special expertise while at the same time providing the application of good forestry management on an ongoing basis for site-specific decisions.

In meeting critical needs it is also essential that we look closely at the availability of technical knowledge while increasing the professional composition of our staff. In the past few years we have seen a gradual transition from the "how" emphasis of the forest technician to the "why" focus of the professional forester. Organizations vary as they look to the composition that best meets their particular needs. The challenge is to maintain a balance between the classifications which reflect both emphases.

The challenge we face in utilizing a diverse work force is

to recognize the diversity of not only available staff but also types of activities. Certain forest management activities require technical skill; others require a strong theoretical base of knowledge. Hiring only technicians weakens the organization's ability to make theoretically sound site-specific decisions, and counts too heavily on experience alone to develop a sound base of forestry knowledge. On the other hand, hiring four-year graduate foresters to perform technical activities leads to eventual job dissatisfaction with a related reduction in productivity. The objective is to respond to a diverse need with a diverse work force.

A third factor in utilizing a diverse work force is the full incorporation of staff into the organization who reflect a changing external society. It is interesting to note that the percentage of women in the total United States labor force increased by 10% in the period between 1965 and 1986 to a total of 44%. The proportion of women employed by the industry has changed little from the 22% recorded in 1960 to the 23% noted in 1984.

These statistics from the federal Departments of Labor and Commerce tell us about total percentages. They do not tell us how women and minorities are employed, whether they are employed in a professional capacity, or whether they are employed in support services to the field professional. It is important that within each of our own organizations we work to ensure that women and minorities are both hired and fully incorporated at all levels.

This emphasis is short-sighted, however, if we limit it to only women and minorities. We must look at other criteria as well in reflecting social change, remembering we must strive to incorporate the varied perspectives which are reflected by different age groups and by graduates of different academic institutions. It is a laughing matter within some organizations that affirmative action means hiring someone who comes from a different four-year institution than the majority of the professional staff. The reality is that the organization is short-changed if the theoretical base is never challenged by a different forest management philosophy.

### THE CHALLENGE OF AN EVOLVING PROFESSION

The final challenge is a profession which continues to evolve and change. The challenge for those entering in the profession, as well as those of us who have been in the profession for a long time, is to continue to change and grow with the profession.

The first requirement of today's natural resource professional is to be technologically advanced. We have moved from a time when theories were proposed to a time when they can actually be field tested. Today's natural resource professional must be a silvicultural leader familiar with the management tools and techniques required by an urban, as well as a rural forest.

In addition to computer literacy and silvicultural knowledge, the natural resource professional must be an innovator and change agent, able not only to distinguish what are the best and most effective technological innovations, but also to implement the new technology within the organization.

As an evolving profession, natural resource management has moved into arenas formerly reserved for the social sciences. Today's natural resource professional must be a skilled negotiator, a charismatic motivator, and a clear communicator. Skills formerly reserved for the state department are now required of the forestry organization's local representative.

As already noted, the profession of natural resource management has moved from a biological science to a management competency. The natural resource manager of today must be fiscally competent in order to make the complex decisions which have become a daily part of the job. Because of the increased frequency of lawsuits, the

natural resource manager must have at least a rudimentary knowledge of legal procedure and of the state and federal regulations which affect and govern each management activity. The legislative halls have become the new forest arena. In addition, short-term and long-term planning skills which have always been part of the forester's toolbox are now critical daily instruments of stewardship.

### CONCLUSION

In summary, effective management of the human resource, both the internal staff and external public, is critical to successful management of the natural resource. Site-specific prescriptions should not be limited to field operations but should be applied to the particular work site and to the individual employee as well.

When I first began to prepare these remarks, I felt that the critical question as we attempted to balance harvest levels with market demands while resolving problems and responding to public interest was: "How can I see the forest if people keep getting in the way?"

At the conclusion of my comments I feel that the new professional question is slightly different, and the challenge even greater: "How can we manage the forest if we don't understand the people who manage the trees?"

Last year, the Society of American Foresters recognized the importance of people management as a technical focus by establishing the Human Resources Working Group which I have the privilege of chairing. I now challenge each of you reading these comments to continue what our professional society has begun: to acknowledge effective management of the human resource as critical to productive management of the natural resource. People are not trees -- but, in today's complex world of forestry, they may be our most important resource.



Mary Jo Lavin  
January 1988

# CREATING A PROFESSIONAL

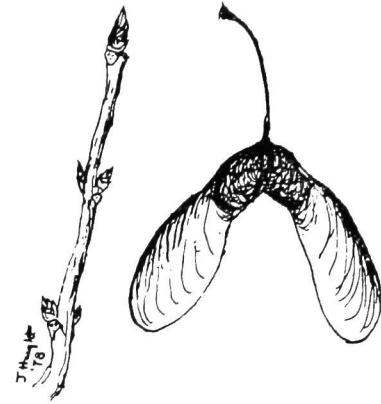
By Linda Alverson  
Forester, Seven Islands Land Co.

The advertisement starts: "You've come a long way baby!" but for the natural resource professional, after four years of college, there is more to learn.

Numerous attributes contribute to the creation of a professional. Most definitions include highly specialized training, experience, legal responsibility and adherence to prescribed standards of performance and ethics. Many of you are in the midst of your "highly specialized training" on the verge of becoming professional foresters, wildlife biologists or resource specialists. Absorbing the basic technical skills, theories and techniques may not be the most important, albeit necessary, characteristic of a professional. As your career progresses, interpersonal skills, communication, demeanor and political sensitivity become more important and often critical to career advancement. Don't misunderstand, those long nights writing silvics papers and memorizing insect characteristics can't be taken lightly. The knowledge you are gaining will guide and shape decisions all through your professional life.

Responsibility, experience, performance standards and ethics can't be memorized and are seldom learned from a book. Experience can never be overrated. The "doing" always reinforces the "knowing". It isn't easy to fit the theories and techniques to every situation. This is particularly true of natural resource fields. Translating basic concepts into everyday operations and language takes experience. You'd be surprised how many people never heard of Smith's Silviculture or Schemnitz's Wildlife Management Techniques. You've gained experience when: you can accomplish a thinning-from-below with crews who are accustomed to clear cutting, when you can manage wintering habitat for deer and still meet a landowner's objectives or when you can build a new hiking trail system on a government budget. Getting a job done effectively requires more than knowing what needs to be done. Experience is the long circuitous route we take through trial, error and evaluation.

Certification and licensing provide many professional occupations with the legal standards which assure the public of minimum knowledge and experience of the professional. You may find that your professional decisions



*Acer saccharum* Marsh.

will be questioned or defended in a legal setting. A certificate or license lends to your credibility.

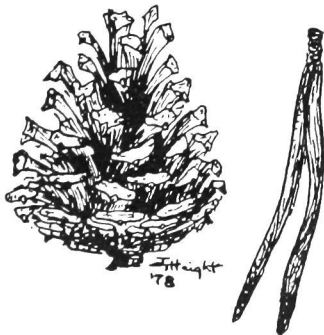
The honesty and sound character brought to every contract, project and personal communication are essential characteristics of the professional. As you gain experience you find that honest dealings, punctuality and dependability not only benefit yourself but are qualities you seek in the people you work with. Most professional organizations have a code of ethics for their members. These ethical codes address: providing the highest standard of service, conflicts of interest, advertising, competition and other guidelines for professional conduct.

Rounding out the characteristics of a professional are the skills necessary to work effectively with people. These include being a good communicator, good interpersonal relations, public relations, conflict resolution and personal demeanor. It also includes being a part of the world outside your profession. Involvement in community activities, awareness of current events, participation in politics, all broaden your professional perspective.

Look to people you consider professionals. What characteristics make them remarkable as professionals? The National Society of Professional Engineers has developed an appraisal standard for its members:

Job and Technical Knowledge	15
Application and Productivity	10
Originality and Initiative	20
Quality of work	15
Judgement, Planning and Orig.	10
Cooperation	3
Effective Communication	8
Leadership	6
Attitude	4
Dependability and Responsibility	10
Capacity for Learning	9
Max.	110

As you can judge from this standard, technical knowledge is a small part of becoming a professional. So . . . work hard, be honest, and get involved.



*Pinus banksiana* Lamb.

# The University Forests

CIRCA: 1978

## LEGEND

Compartments

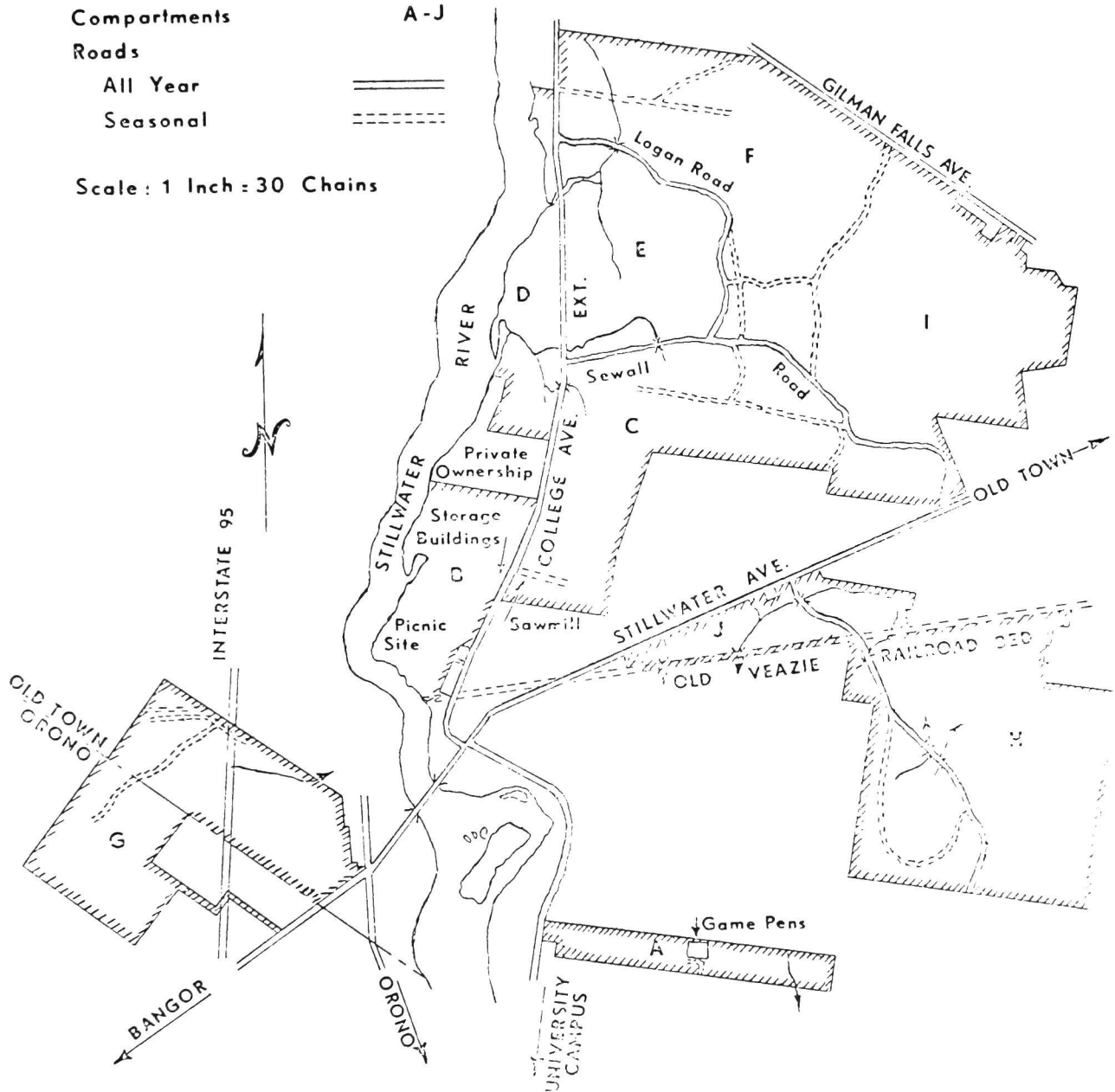
A-J

Roads

All Year

Seasonal

Scale: 1 Inch = 30 Chains





## NUTTING NEWCOMERS

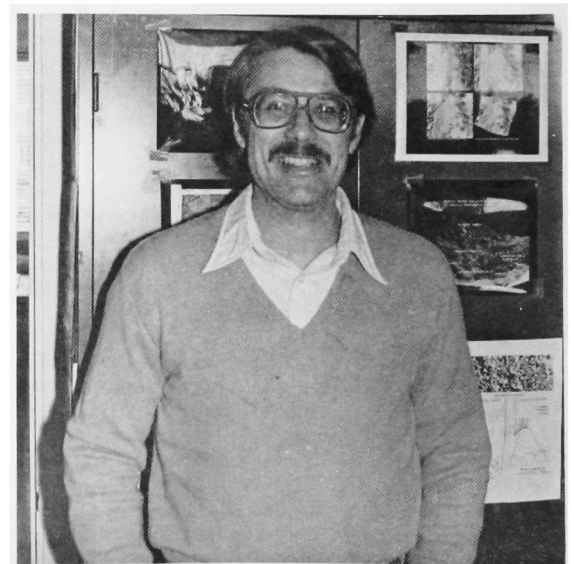
We would like to welcome Dr. Robert Seymour to the faculty at Nutting Hall. From 1979 to 1981 Dr. Seymour worked on the Green Woods Project as Associate Scientist. Dr. Seymour has been with the College since 1981 working for the Cooperative Forestry Research Unit. Appointed Curtis Hutchins Associate Professor of Forest Resources, he joined us this past fall. Dr. Seymour's research interests include: modelling growth and development of forest stands, thinning systems, and intensive culture of eastern white pine and spruce-fir. While on the faculty at Nutting Hall he hopes to help develop a nationally prominent program in silviculture education and research and to help create a better forest for Maine's future.

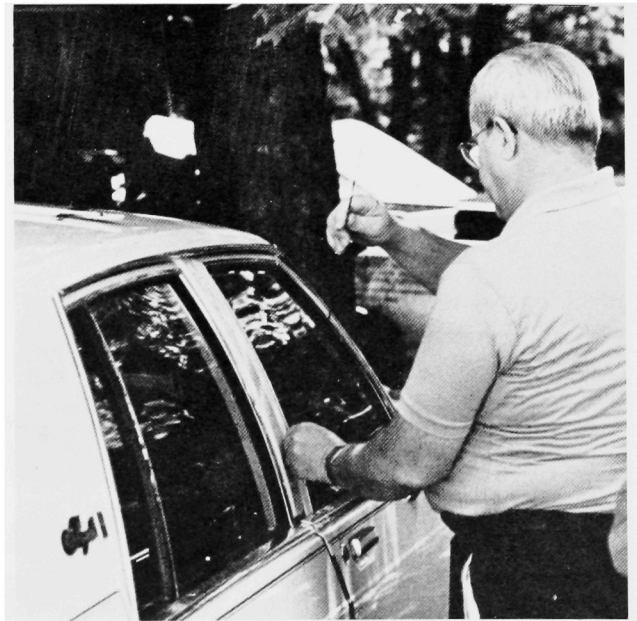
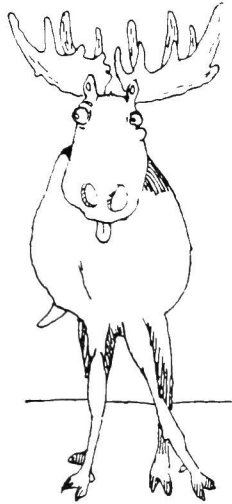


We are fortunate to introduce and welcome Dr. Steven Sader to the College of Forest Resources. Dr. Sader comes to the University of Maine with an impressive background. He spent six years working for the U.S. Agency for International Development and Bureau of Land Management. He has designed and implemented several remote sensing inventory and monitoring programs. From 1983 to 1987, he was the Research Forester for NASA as Principal Investigator for Temperate and Tropical Forests at Earth Resources Lab in Mississippi. Dr. Sader's goal is to demonstrate cost-effective applications of remote sensing and geographic data bases for monitoring forest resources in the state of Maine. He hopes to combine traditional photogrammetric skills with satellite data computer-assisted skills for those users who select that option, making them competitive in a broader job market.



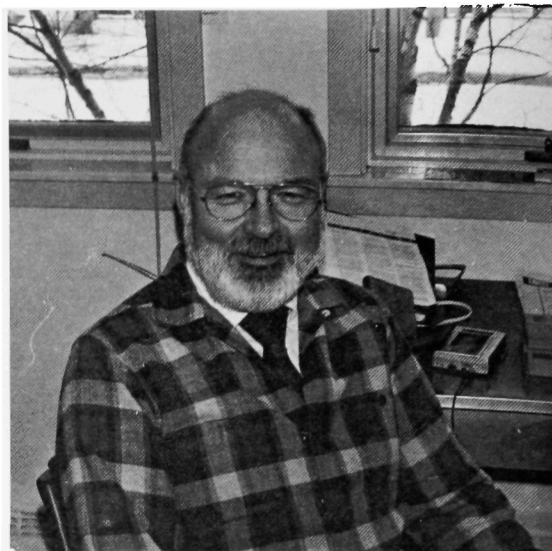
Our newest arrival in the Dean's office is Carole Halsted. Ms. Halsted comes to us from the Department of Economics where she spent the past five years working for the Department Chair. Ms. Halsted is working for the Associate Dean where she is responsible for student records. She is a Training Officer and Finance Director to the Board of Directors. She is also a licensed EMT-M, a certified CPR instructor, teaches emergency medicine at EMVTI, and is an active member of the Orono Volunteer Rescue Squad. We welcome Ms. Halsted to the College of Forest Resources!





WILDERNESS SURVIVAL?

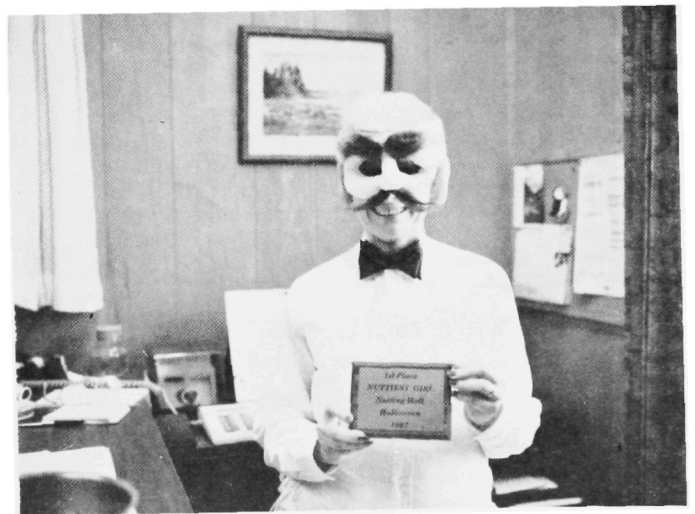
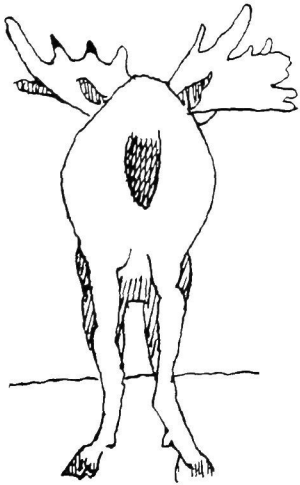
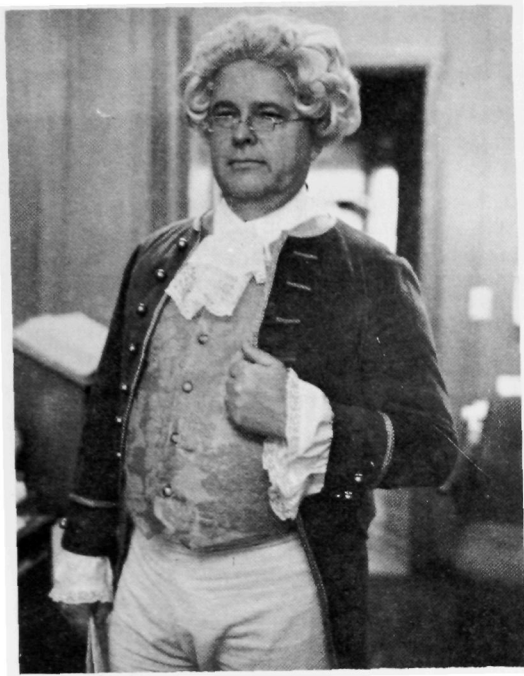
From the Canadian Forest Service, Dr. Robert Forster has come to join the forces here at the University of Maine. Dr. Forster has worked for both the U. S. Forest Service and the Canadian Forest Service for a total of over 25 years. He is a Forest Economist who has worked for the United Nations. He has traveled extensively, working in Thailand, India, Indonesia and the Phillipines with watershed management. He was part of the United Nations Environment Program, working in Nairobi with tropical forests and coastal ecosystems. Dr. Forster brings to U-Maine an extensive international knowledge. He offers a range of new and exciting ideas to the future foresters at the College of Forest Resources.



We welcome Dr. Daniel Harrison back to the College of Forest Resources. Dr. Harrison has held many previous positions in the wildlife department. After working in Connecticut for a while he has decided to return and join us. Dr. Harrison has particular interest in coyotes and related species here in Maine. We hope that he will continue to integrate his research interests with other areas of academic life here at the College.

We welcome Dr. Raymond J. O'Connor, who has come to us from England. Dr. O'Connor is originally from Ireland where he obtained his masters. He spent four years at the University of England where he studied atomic constants. He did his doctoral work at the Edward Grey Institute for Field Ornithology at Oxford. He has held positions at both Queen's University and University College of North Wales. In 1978 Dr. O'Connor became the Director of the British Trust for Ornithology. He has served on many committees related to his profession. Dr. O'Connor is an avid bird watcher and hopes to explore much of North America during his post here at the College.







# **“Changes in Rural America: A Challenge for Resource Planners”**

**By Katherine Weber, Assistant to the Dean**

As a natural resource professional, you are familiar with many “challenges” of the woods – bad weather, black flies and mosquitoes – just to name a few. Now you must face yet another challenge – coping with the “parcellation”<sup>\*</sup> of rural America. “Rural”, according to the U. S. Census Bureau, refers to sparsely settled or agricultural areas as distinct from settled communities with populations of over 2,500 people.<sup>1</sup> America’s privately owned rural lands total over 1.3 billion acres.<sup>2</sup> At present, these rural lands are about evenly divided among cropland, forests, and range or pasture.<sup>3</sup> These lands provide a large proportion of the nation’s food, timber, water, recreation, grazing, minerals, wildlife habitat and national wealth. Each day, thousands of individual owners buy and sell parcels of rural land and make decisions about how these lands will be used. Our land use policies must reflect the identity and motivations of these rural land owners and the economic forces which affect them. As an “expert”, educator, resident of a community and member of society, you have the opportunity to make a difference in shaping the face of rural America. Accepting the challenge to get involved in resource planning efforts today will have an impact on the availability and viability of the natural resources of the future.

Rural America is changing. Demographers tell us that starting about 1970, many non-metropolitan counties in this country, including some far from the influence of a big city, have been growing faster than metropolitan ones. Public perceptions of rural America have also been changing from images of poverty and backwardness to romanticized images of the “good life”. The popular image of the rural agrarian life lived at a slower pace in a less-polluted environment is, however, increasingly incompatible with reality. Today, fewer rural residents live on operating farms than ever before (about 1 in 10), and those that do derive more than half of their income from non-farming sources.<sup>4</sup> The interstate highway system has made it possible for rural residents to shop, work and secure services many miles from their farms and homesteads. Housing in rural areas is now being built at a rate more than twice that of urban areas.<sup>5</sup> Households have become America’s new “cash crop”.

So what does all this change in rural America mean for resource managers? For one thing, we must be increasingly concerned with safe-guarding the long-term productivity of America’s natural resources base to supply traditional products such as food, fiber, water and recreation. Now that there is a profitable market for rural land, we must also be concerned with protecting the viability of natural and economic systems, and the scenic beauty of the American landscape.

## **Trends in Rural Land Use**

Three trends in America’s rural land market have become evident since World War II and have accelerated greatly since the late 1960’s. These trends are: (1) rapidly rising prices for all types of rural land; (2) changes in the identity of rural landowners; and (3) changes in the size of parcels. The impacts which these new owners, new scales of operation and technological changes will continue to have on rural America require that we update our land use

policies and assess our attitudes toward land stewardship.

The best documentation of rise in land prices has been in the price of farmland. Between 1950 and 1980, the average price of farm acreage rose more than 900 percent.<sup>6</sup> The increasing value of rural land in many parts of the country is evident in the prices paid by the U. S. Forest Service for timberland between World War II and 1980. The price of cut-over forestland purchased by the Forest Service during this period has increased from less than \$5 per acre to over \$235 per acre.<sup>7</sup>

Accompanying the escalation of rural prices is the changing composition of landowners and ownership patterns. According to a nationwide U. S. Department of Agriculture land ownership survey<sup>8</sup>, not surprisingly, more land is owned by farmers than by any other group in the United States. What is surprising is that 44 percent of farmland and ranchland in this country is now owned by non-farmers. Retirees are the next largest landowner group, holding about 14 percent of all private land. Another interesting trend in ownership patterns over the past two decades has been the substantial increase in rural land owned by absentee landowners, or in parcels purchased by formerly urban residents. Also of interest to resource managers is the decline in the amount of forestland owned by farmers. Between 1952 and 1977, the amount of forestland owned by farmers declined from 172 million acres to 116 million acres.<sup>9</sup> Much of the forestland going out of farmer ownership was transferred to other non-industrial private owners.

The size of parcels of land in rural America is also changing in response to changing demands and new owners. Parcel size has traditionally been mainly a result of custom and of the economics of past land uses. As economic focus and desired land uses change, the size of parcels slowly changes to reflect market focus. In some regions of the country, large-scale, corporate farming has led to land consolidation. In other areas, demand has been greater for small-acreage parcels. The practice of splitting large tracts of rural land – particularly woodland and marginal cropland – into a number of small to medium-sized tracts (5 to 40 acres) has been encouraged by changes in both supply and demand. As land values increase, parcellation of traditional-sized parcels into smaller ones occurs. When the price of land is low, buyers can afford the relatively large parcels used in agriculture. As long as property taxes remain low, the consumer is able to buy more land than is actually needed. Rising land prices, on the other hand, reduce the amount of land a given amount of money will buy. This market situation provides an incentive to break larger parcels into smaller ones. The price of rural land therefore acts as a market signal for the allocation of land resources among uses and among users.

## **Land Use Issues**

Our nation’s land resources base has not, as yet, been fragmented beyond repair. But if current trends continue, parcellation should be viewed as a potentially serious threat. Parcellation, in combination with changing ownership patterns and inflating land prices, may impede our

<sup>\*</sup> The division of land into smaller parcels.

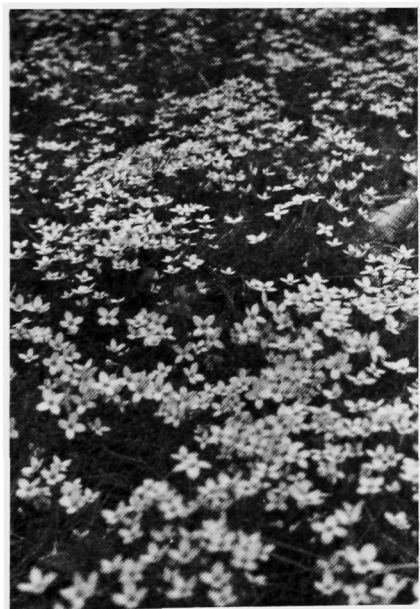
future ability to expand commodity production in rural America.

Non-industrial private forests (NIPF's) include a considerable amount of potentially productive land. Because of their aggregate size and production potential, the NIPF's will have to play an important role in meeting future demands for forest resources. Since there is some parcel size below which many otherwise feasible management practices are unlikely to be profitable, the impact of parcellation of NIPF's productivity potential must be carefully considered in the planning process.

Americans have traditionally looked to rural land for outdoor recreation, relaxation, and the enjoyment of natural and man-made amenities. Privately owned rural land serves recreation demands primarily by providing sites for commercial recreation and for second homes. At present, there is not a significant demand for rural land by the "recreational development industry." There is, however, a growing demand by individuals for small to medium-sized parcels of undeveloped land for investment, private recreation, and possible retirement. Furthermore, since the oil embargos of the mid-1970's production of firewood for personal use has added an additional motive for the recreational land buyer. Although more difficult to quantify than demands for resource production, the recreational motive for owning rural land is widespread and growing.

### Getting Involved

Changing patterns of ownership, rising prices and changing parcel sizes in rural America will undoubtedly impact your career as a resource professional. The supply of rural land for commodity production and other amenities is affected by land use controls, tax regulations and other institutional factors, as well as physical and technological factors. The institutional effects on the rural land supply have come from three levels - federal, state and local. It is at the local level that the supply of rural land is most affected by institutional controls - generally in the form of zoning and subdivision regulations.



Local land use regulations affect the supply of land in three major ways: (1) by changing the amount of land legally available for a particular use; (2) by specifying minimum parcel sizes for particular uses; and (3) by determining the way in which land is used for a particular purpose. Ironically, well-intended local and state land use regulations have sometimes contributed to parcellation by requiring that lot sizes be larger than they would otherwise have been. The requirement that building lots be at least 5 to 10 acres increases the total amount of land in medium-sized parcels which are unnecessarily large for residential purposes but too small for most agricultural or forestry uses.

Rural areas have unique problems which require innovative planning approaches, not merely the transplanting of suburban solutions to the countryside. Parcellation presents resource planners with two distinct kinds of problems: (1) how to manage land that has already been divided, and (2) how to limit further parcellation. Hard decisions will have to be made on performance standards for development, the provision of public services, and mechanisms for managing natural resources and assuring that parcel size is appropriate for the intended use.

Faced with the threat of parcellation, what can you do as a resource professional to protect the resources base as well as your livelihood? A good place to start is your local government. Because you are familiar with natural systems and land management practices, you have the expertise which many Boards of Selectmen/Town Councils, Planning Boards, Boards of Appeal and Conservation Commissions lack. Put your knowledge and training to work for your community by participation in municipal government as an official or consultant.

Resource professionals can make a significant contribution to the development of simplified zoning and subdivision controls. Perhaps the greatest challenge facing resource planners is to identify new forms of land ownership, management and development which satisfy objectives of protection, investment and enjoyment of property without breaking land into smaller tracts. It is time for all of us to redefine and embrace an enlightened "land ethic"

1. U. S. Census Bureau. 1972. *The Methods and Materials of Demography*, Vol. 1 (Washington, D. C.: Government Printing Office). P. 158.
2. Healy, Robert G. and James L. Short. 1981. *The Market for Rural Land: Trends, Issues, Policies*. The Conservation Foundation. p. 1.
3. Data are from the 1977 Soil Conservation Service "Natural Resources Inventory".
4. Healy, p. 252.
5. Healy, p. xi.
6. U. S. Department of Agriculture. *Farm Real Estate Market Development*.
7. Healy, p. 12
8. U. S. Department of Agriculture. 1980. *Landownership in the United States*. USDA Economics, Statistics and Cooperative Services. Agricultural Information Bulletin No. 435 (Washington, D. C.: Government Printing Office).
9. U. S. Forest Service. 1980. *An Analysis of the Timber Situation in the United States: 1952-2030*. (Washington: U. S. Forest Service), Appendix 3, p. 25.

# Silviculture and Maine's Future Forest

Robert S. Seymour  
Curtis Hutchins Associate Professor of Silviculture

What issues and challenges will today's forestry students face during their careers? What role will silviculture play in future forest management, and how will practices change? Forecasting such trends, particularly economic ones, is always a speculative exercise. However, we silviculturists have a big advantage in this arena: virtually all stands that will be harvested or treated silviculturally during the next 40 years – the entire career of a forester – are already out there growing somewhere, or will be created (via regeneration treatments) during this period. Thus, we can make reasonable predictions for the future based on current forest conditions, and how future economic trends will influence them.

In this article, I will outline my perceptions of the major trends that will influence future silvicultural practice in Maine. Readers interested in pursuing this issue from a regional or national perspective should consult the series of feature articles in the 1986 *Journal of Forestry* (April-September issues).

## Background

Maine is the most heavily forested state, and has far more industrially owned timberland than any other. Despite this overwhelming presence, silvicultural activities have played a small role in shaping the quality and structure of today's forests. Most timberland consists of second- or third-growth stands that originated after logging, or of stands that pioneered onto the several million acres of agricultural fields abandoned since 1900. This haphazard history, coupled with the great inherent diversity of tree species and sites found in the State, has produced an almost infinite variety of stand conditions. This bewildering array defies a simple, cookbook approach to silviculture, as has evolved in other places such as Sweden or industrial lands in the South.

During the next forty years, this situation will change slowly, if at all. Several important trends will influence silvicultural practice:

### The transition from old, mature Forests to young ones.

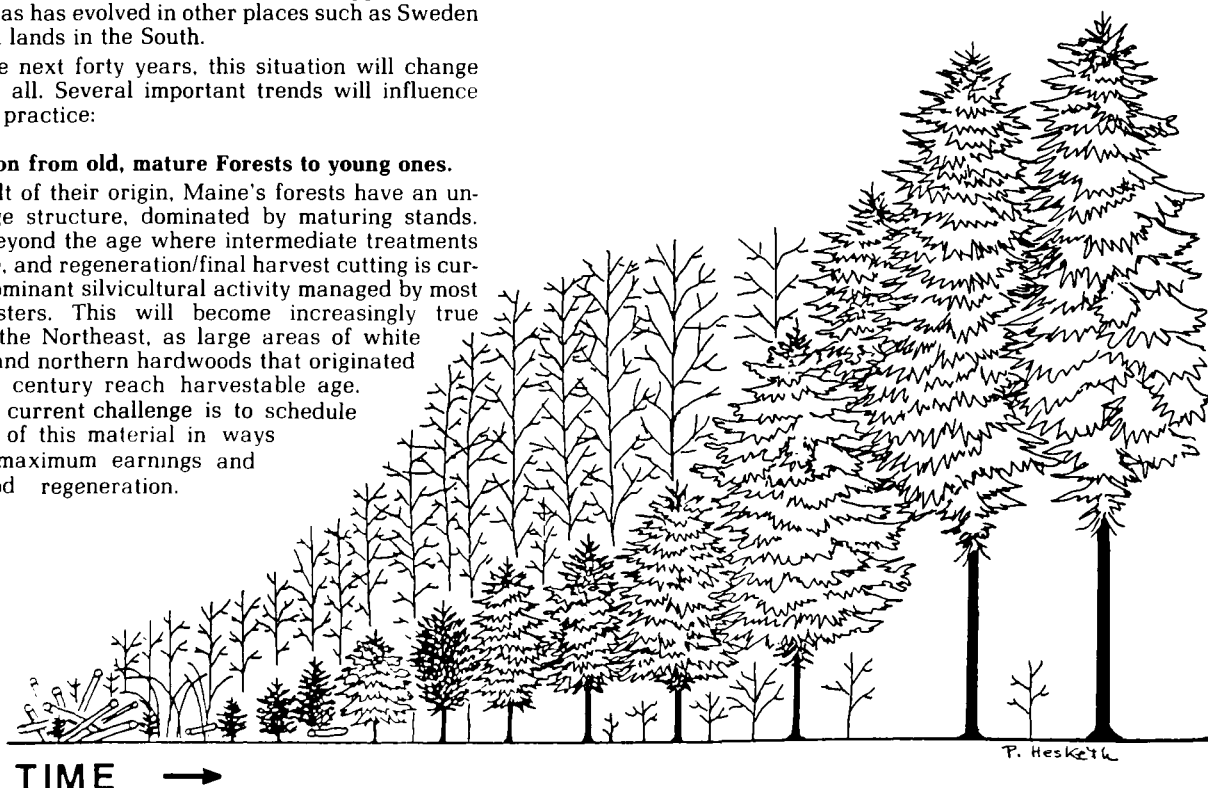
As a result of their origin, Maine's forests have an unbalanced age structure, dominated by maturing stands. Many are beyond the age where intermediate treatments are effective, and regeneration/final harvest cutting is currently the dominant silvicultural activity managed by most Maine foresters. This will become increasingly true throughout the Northeast, as large areas of white pine, oak, and northern hardwoods that originated early in this century reach harvestable age. A Forester's current challenge is to schedule the harvest of this material in ways that make maximum earnings and lead to good regeneration.

### Improving markets and prices for forest products.

Recent timber supply forecasts for Maine show inventories of the most important species declining during the next several decades. Growing demands for forest products harvested from a mature, slow-growing forest will inevitably lead to rising wood prices. While these trends may alarm some wood buyers, I believe they may prove to be the best thing that has ever happened to Maine forestry. Higher wood prices will have two very positive effects on silvicultural practice. First, many early stand treatments will become profitable, and thus may be widely applied where they have not been historically. Second, it will become more feasible to harvest low-quality trees that formerly had no market, and thereby upgrade the overall quality of the growing stock that has suffered from past high-grading.

### Changing technologies for harvesting and silvicultural treatments.

The last 30 years – within the careers of many foresters now practicing – have witnessed the development of the chain saw, aerial photography, herbicides, and computers, all of which have profoundly influenced forest practices. Unquestionably we will witness equally dramatic developments during our careers that will revolutionize silvicultural practice. Rising labor costs may increase mechanization of many treatments now done by hand, especially those involving timber harvesting. Such trends are often regarded as undesirable by silviculturists, but they need not be if silvicultural, as well as economic, factors are incorporated into their design. Sweden has mechanized virtually all commercial thinning operations



using systems that leave residual stands as good or better than any created by more labor-intensive methods.

Although the **way** we carry out silvicultural treatments will be very different in 2010, we must remember that the species, sites and forest pests we deal with will change little. Fundamental knowledge about the silvics and ecology of Maine's forests –how different species regenerate, what sites they grow best on, how stands develop over time – will not become outdated. Indeed, much of what we know today was first learned over 50 years ago, and is still as timely as ever. Genetic improvement programs may well create many new superior genotypes, but these will still need to be grown in stands out in the woods. Silviculture and knowledge of stand development will be increasingly important to ensuring the success of high-tech forestry.

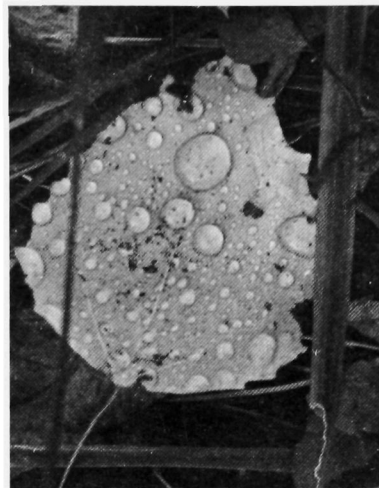
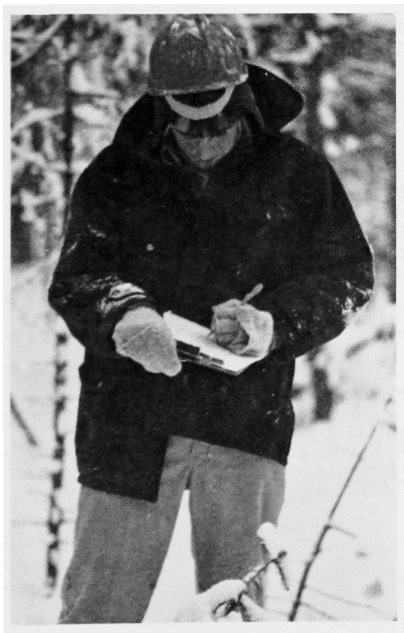
I see the trends discussed above influencing future silvicultural practices in the following ways:

#### **Increasing emphasis on intermediate practices**

As the "old forest" that now dominates Maine is harvested, large areas of young stands will be created. By 2000, there will be several million acres of forests under age 30, a situation that has not existed since ca. 1930. While regeneration will continue to be important, early vegetation management treatments and commercial thinnings will become increasingly common. For the first time in Maine, our traditional preoccupation with **harvesting** trees may be replaced by a focus on **growing** them. We will need highly trained silviculturists to administer these treatments, as well as effective forest managers who foresee their necessity and secure the necessary funds.

#### **Greater attention to hardwood silviculture.**

Maine silviculture has traditionally focused on conifers, especially spruce-fir, which has been the staple of the State's paper industry. This emphasis will undoubtedly continue, as conifers have obvious advantages for producing large volumes of high-quality fiber. However, the long-neglected hardwood resource will become the focus of much professional public attention, and silviculturists will need to broaden their focus.



#### **More sophisticated management of mixed stands by natural regeneration.**

I confess to a bias and wishful thinking here, but I believe that Maine ultimately cannot succeed in the global forest products competition by imitating other regions where conifer plantations have become the dominant method for producing wood. While I definitely foresee a growing need for planting genetically improved trees on our most productive sites, a slavish reliance on this system is, in my opinion, a recipe for trouble. Many sites in Maine simply do not justify the high costs of intensive plantation silviculture, yet will produce respectable stands of timber if managed wisely using natural regeneration and commercial thinnings to manipulate stand development at minimum cost. I believe foresters have an ethical responsibility to maintain or improve productivity of **all** forest land, not just that portion which justifies large investments. Intelligent use of natural regeneration, coupled with judicious application of intermediate treatments, will continue to be the most appropriate silvicultural system on many sites in Maine. This issue of "where to do what" has already become an important focus for silvicultural research, and will likely be the subject of much professional debate in the coming decades.

#### **Future Challenges**

I sincerely hope that graduates of Maine's College of Forest Resources will be the leaders in shaping Maine's future forests, just as past graduates have had an important influence on today's forest. This is a serious responsibility that society, knowingly or not, has given our profession. If we fail to provide both the leadership and the scientific talent to carry out the job, the future forests of Maine will evolve by default, rather than be deliberately created and cultured to meet our needs. However, if we achieve widespread application of silvicultural knowledge and practice, in combination with other professional skills, Maine's forests will continue to provide abundant benefits for us and our children. Our professional forestry education provides us with the fundamental knowledge, but it will take energy, initiative and continued professional commitment to make this vision a reality.

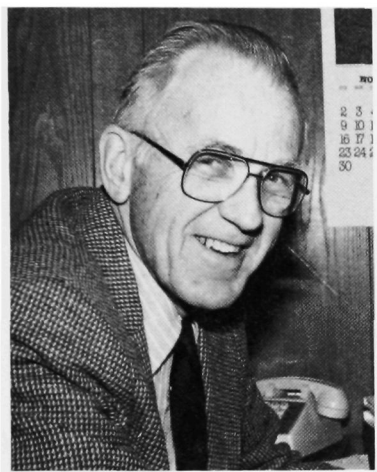


Peter  
Collins

# *FACULTY*

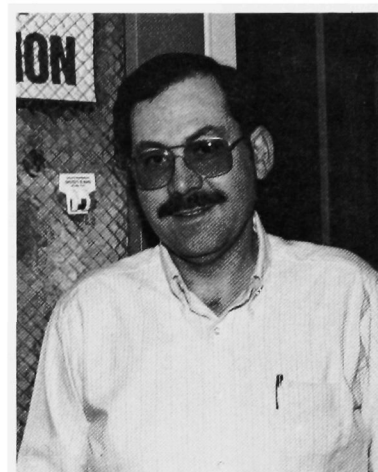


# ADMINISTRATION



**FRED B. KNIGHT**

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**KATHERINE WEBER**

*Assistant to the Dean  
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**GINA PELLETIER**

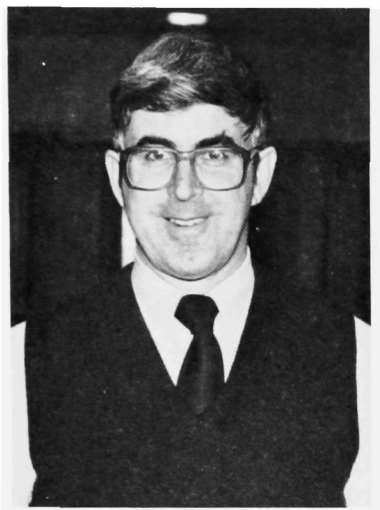
*Administrative  
Assistant*



**JANICE GIFFORD**

*Assistant to the Dean  
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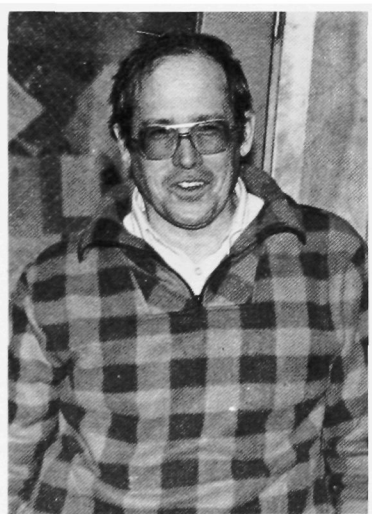
# FOREST MANAGEMENT



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B.S., University of Maine, Forestry, 1963  
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Economics, 1974  
Forest Policy*



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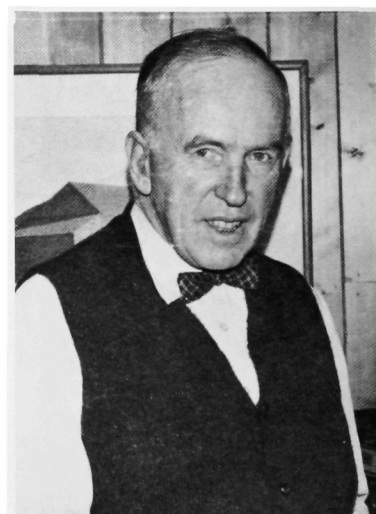
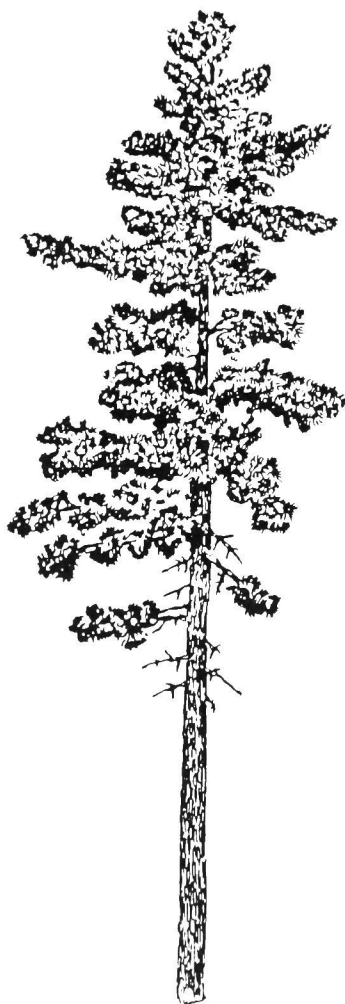
*Associate Professor of Forest Resources  
B.S., University of New Hampshire,  
Forest Management, 1969  
M.S., University of New Hampshire,  
Forest Management, 1974  
Ph.D., Virginia Polytechnic Institute and  
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Statistics and Computer Applications  
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Management, 1965  
M.S., Purdue University, Inventory  
Design, 1968  
Ph.D. Purdue, Mathematical Statistics  
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Remote Sensing  
In Haiti*



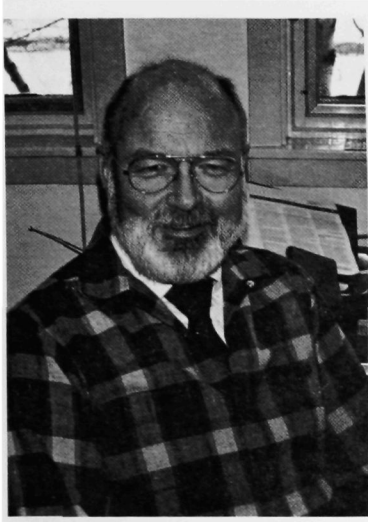
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Forest Engineering  
Co-administrator Forest Engineering  
B.S.F., Mich., Technological  
University, Forestry, 1955  
M.S.F., Purdue University,  
Forestry, 1962  
Ph.D., Purdue University, Economics,  
Industrial Engineering, Statistics, 1962  
Engineering Economics*



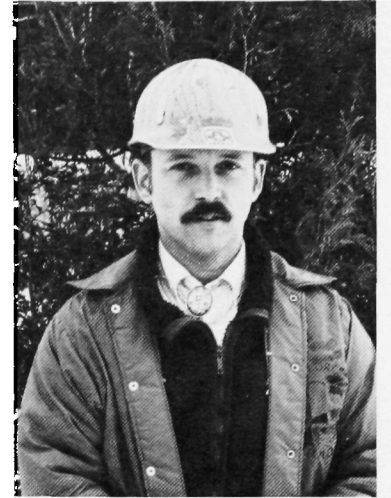
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B.S., University of Maine, Forestry, 1947  
M.F., Yale University, Forestry, 1948  
Primary Wood Processing*



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B.S., Michigan State University,  
Forest Management 1961  
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Forest Economics 1963  
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Management, 1972  
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Management, 1978  
Biology and Integrated Management of  
Small, Non-Industrial Forests*



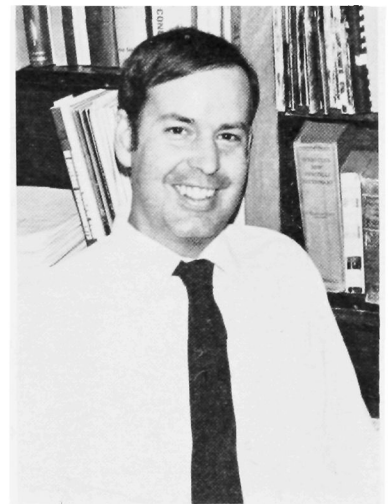
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B.A., University of Virginia, 1951  
M.F., Yale University, Forest  
Management, 1957  
M.Phil., Yale University,  
Silviculture, 1981  
Ph.D., Yale University, Harvesting, 1982  
Timber Management*



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Forest Management, 1976  
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Forestry, 1978  
Photo Interpretation and Remote Sensing*



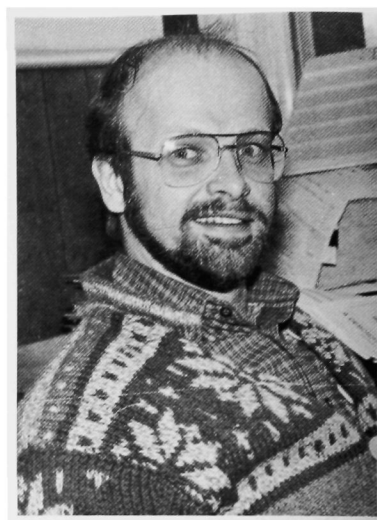
**CHRISTOPHER W. MURDOCH**

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Development  
B.S., University of Maine, Forest  
Management, 1973  
M.F.S., Yale University, Forest  
Pathology, 1975  
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Sciences 1981  
Forest Pathology*



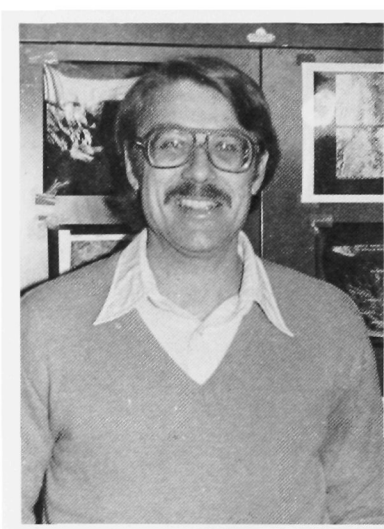
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Head of Two-Year Forest Management  
Technology Program  
B.S., University of Maine, Forest  
Management, 1954  
M.S., University of New Brunswick,  
Forest Harvesting, Labor, 1956  
Photogrammetry and Wood Products*



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Management, 1974  
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Environmental Studies, Forest  
Management, 1976  
Ph.D., Yale School of Forestry and  
Environmental Studies, Silviculture, 1980  
Timber Management and Harvesting*



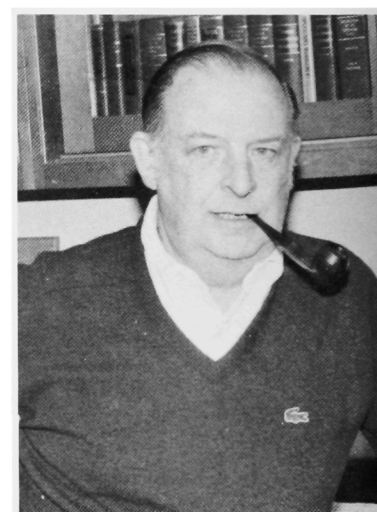
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Forest Resource Management  
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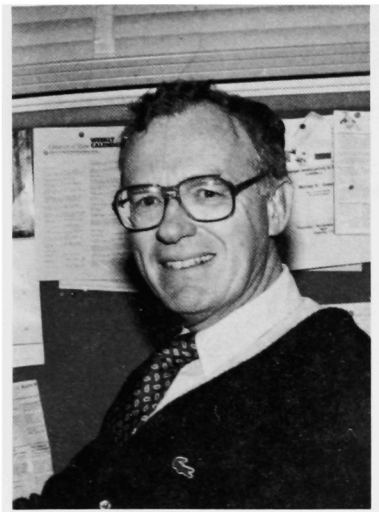
*Associate Professor of Forest Resources  
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Forestry, 1963  
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Entomology, 1964  
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Syracuse, Wood Technology, 1954  
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Syracuse, Wood Technology, 1956  
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Wood Properties and Processing*

# FOREST BIOLOGY



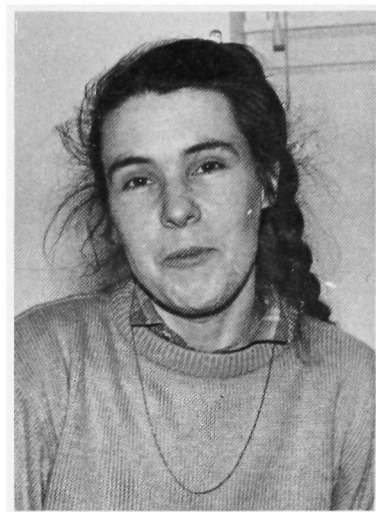
**MICHAEL S. GREENWOOD**

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Tree Physiology  
Professor of Forest Resources  
B.A., Brown University, Botany, 1963  
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Tree Physiology*



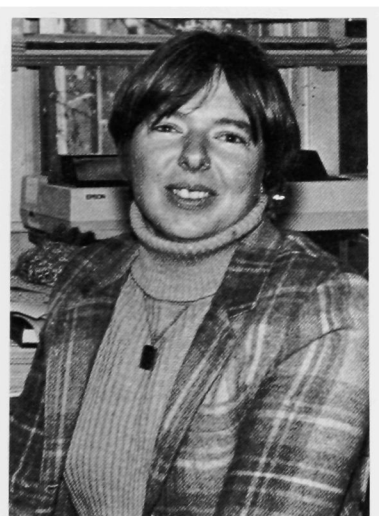
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B.S., University of New Hampshire,  
Botany and Plant Pathology, 1976  
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Forest Products, 1980  
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Wood Science and Technology*



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Botany, 1977  
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Botany and Plant Pathology, 1980  
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Plant Virology, 1983  
Biodegradation of Wood*



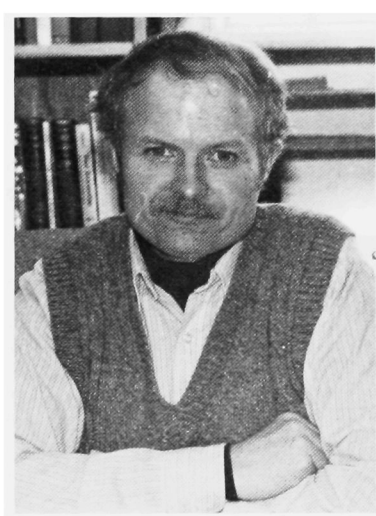
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Genetics, 1980  
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Forest Ecology/Silviculture*

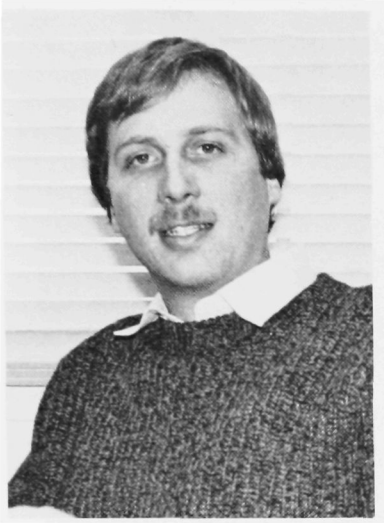


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B.S., Syracuse University,  
Wood Anatomy, 1962  
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Pathology, 1965  
Ph.D., University of Illinois, Structural  
Botany, 1968  
Wood Anatomy*

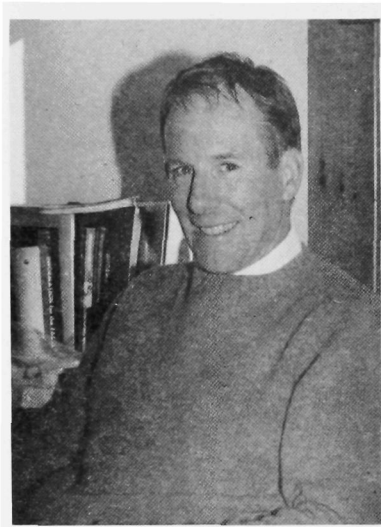


# WILDLIFE



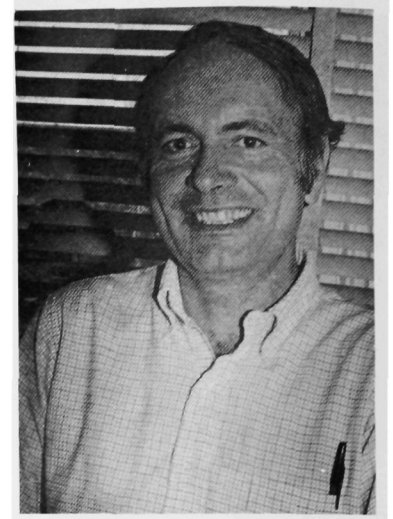
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B.S., University of Wyoming,  
Wildlife Management 1980  
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Management 1982  
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Ecology, 1966  
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Biology, 1968  
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1970  
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Science, 1974  
Population Dynamics*



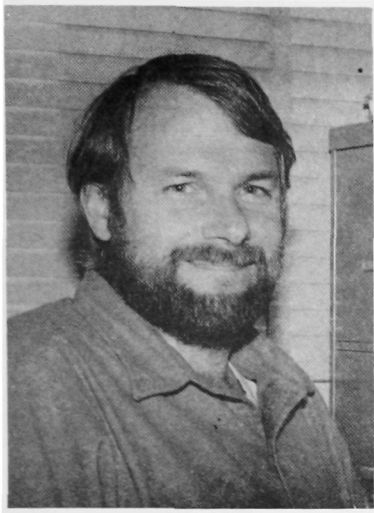
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Wildlife Research Unit  
B.S., University of Alaska,  
Wildlife Management, 1968  
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Management, 1969  
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Science, 1977  
Migratory Birds*

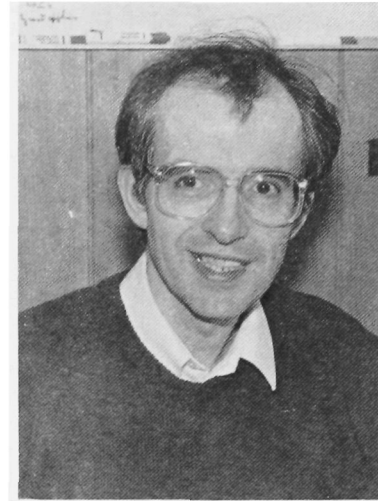


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Wildlife Science, 1974  
D. Phil., Oxford University, Zoology,  
1978  
Wildlife Ecology*

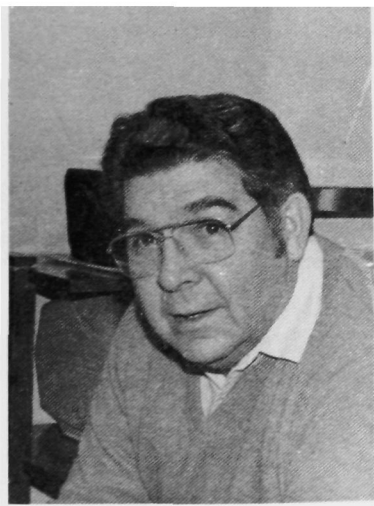


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*M.S., University of Nevada, 1980*  
*Ph.D., Washington State University, 1985*  
*Herbivory*



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*B.Sc., University College, Physics*  
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*Field Ornithology at Oxford,*  
*Growth and Development of*  
*Nestling Birds*

## RECREATION, PARKS, AND TOURISM PROGRAM

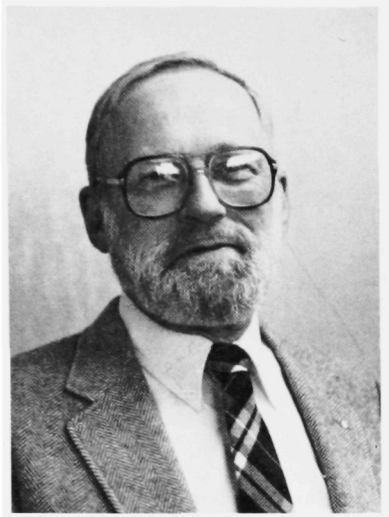


**FLOYD L. NEWBY**  
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*Forestry, 1964*  
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*Forest Recreation, 1966*  
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*Forest Recreation, Recreation and*  
*Park Management*

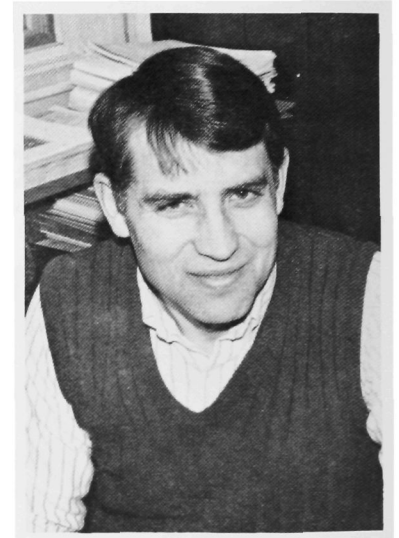


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*B.A., California State College at Los*  
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*M.S., University of California at Davis,*  
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*Environmental Interpretation*

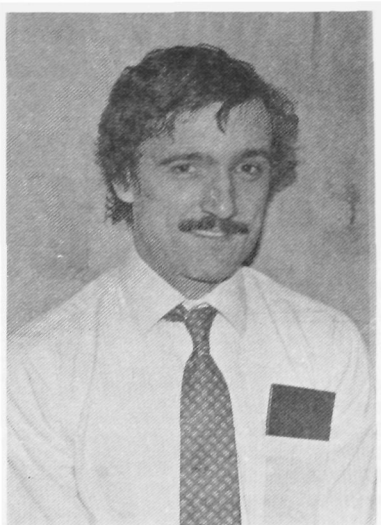
# THE COOPERATIVE FORESTRY RESEARCH UNIT



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Forest Biology, 1979  
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