The Maine Forester

1980

A Tradition
A Commitment
A Workforce

A Tradition of involvement in Maine since 1898 when International Paper Company was founded.

A Commitment to Maine, the vastness of her forest resource, her communities and her people.

A Workforce of more than 1,500 dedicated and skilled employees growing with an industry and International Paper.

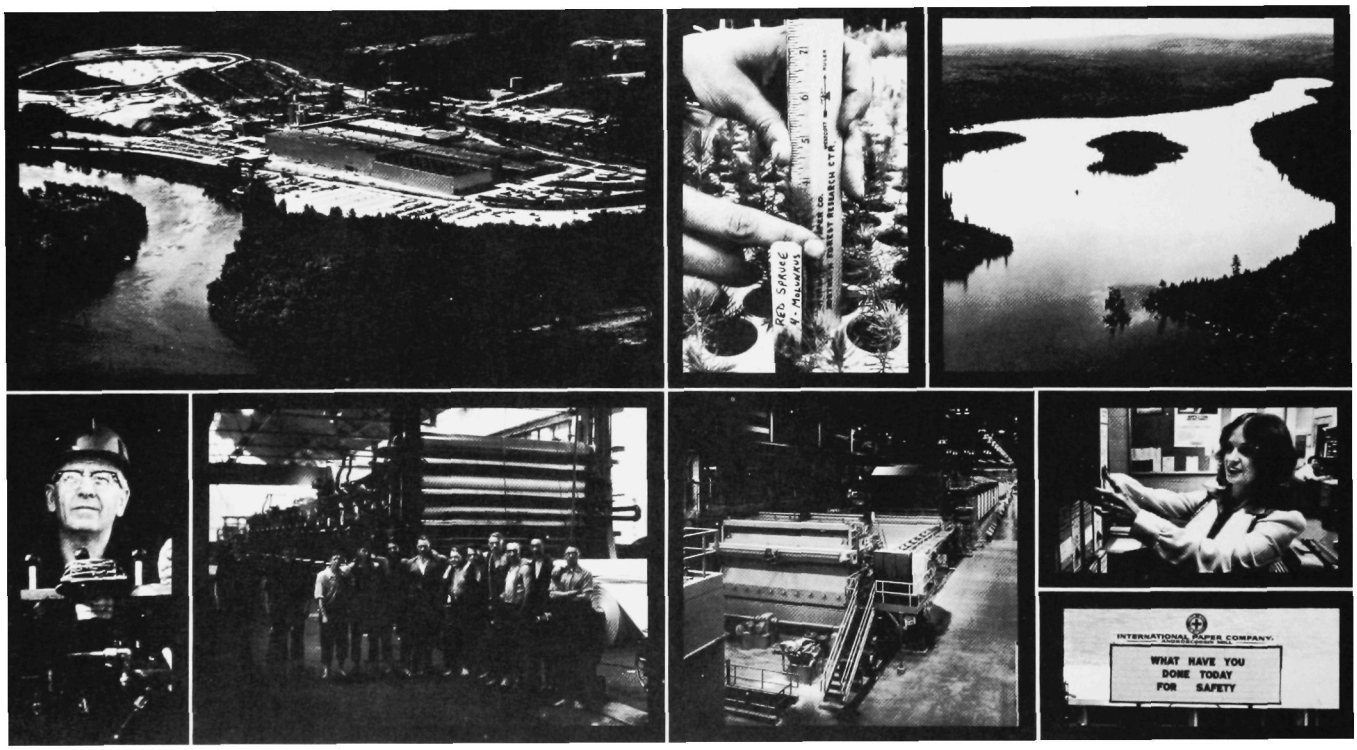
These are vital components upon which International Paper Company's operations in Maine depend.

— The Northern Forest Research Center, recently established in Bangor, to develop and test modern forest management systems and techniques suited to the climate and terrain of Maine's woods.

— IP's Region VI Woodlands Headquarters in Augusta, responsible for the management of more than 1.7 million acres of company-owned forest in the Northeast.

— The massive Androscoggin Mill in Jay, one of the largest fine paper mills in the world, producing nearly half a million tons of light-weight fine papers a year.

Together these facilities represent an investment of more than $300,000,000 in the last fifteen years alone — strong testimony of the Company's on-going commitment to the compatibility of industrial growth and Maine's environment.

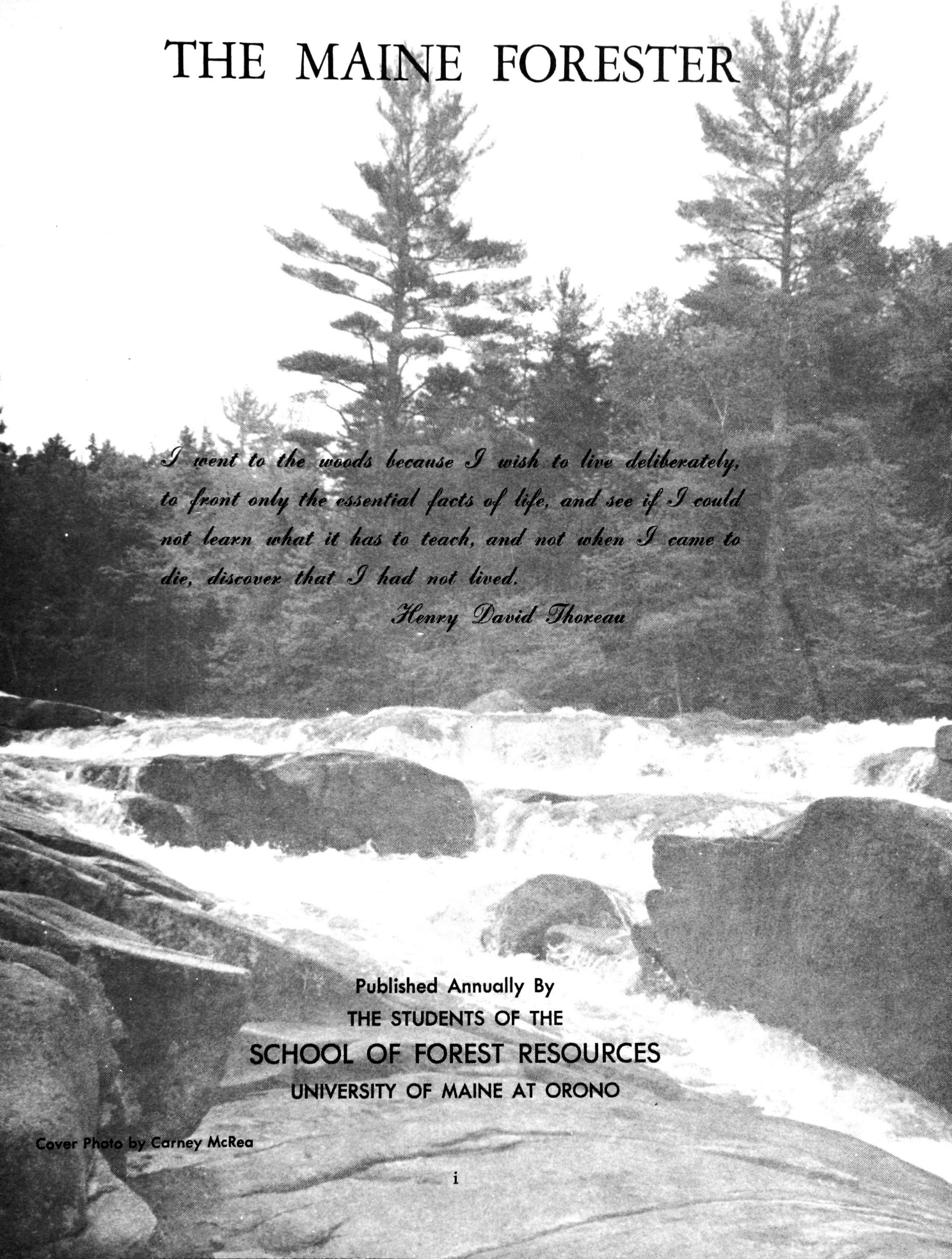


A tradition, a commitment, a workforce. Important elements of IP's past and the foundation of International Paper Company's future in Maine.

INTERNATIONAL PAPER COMPANY

JAY MAINE 04239

THE MAINE FORESTER

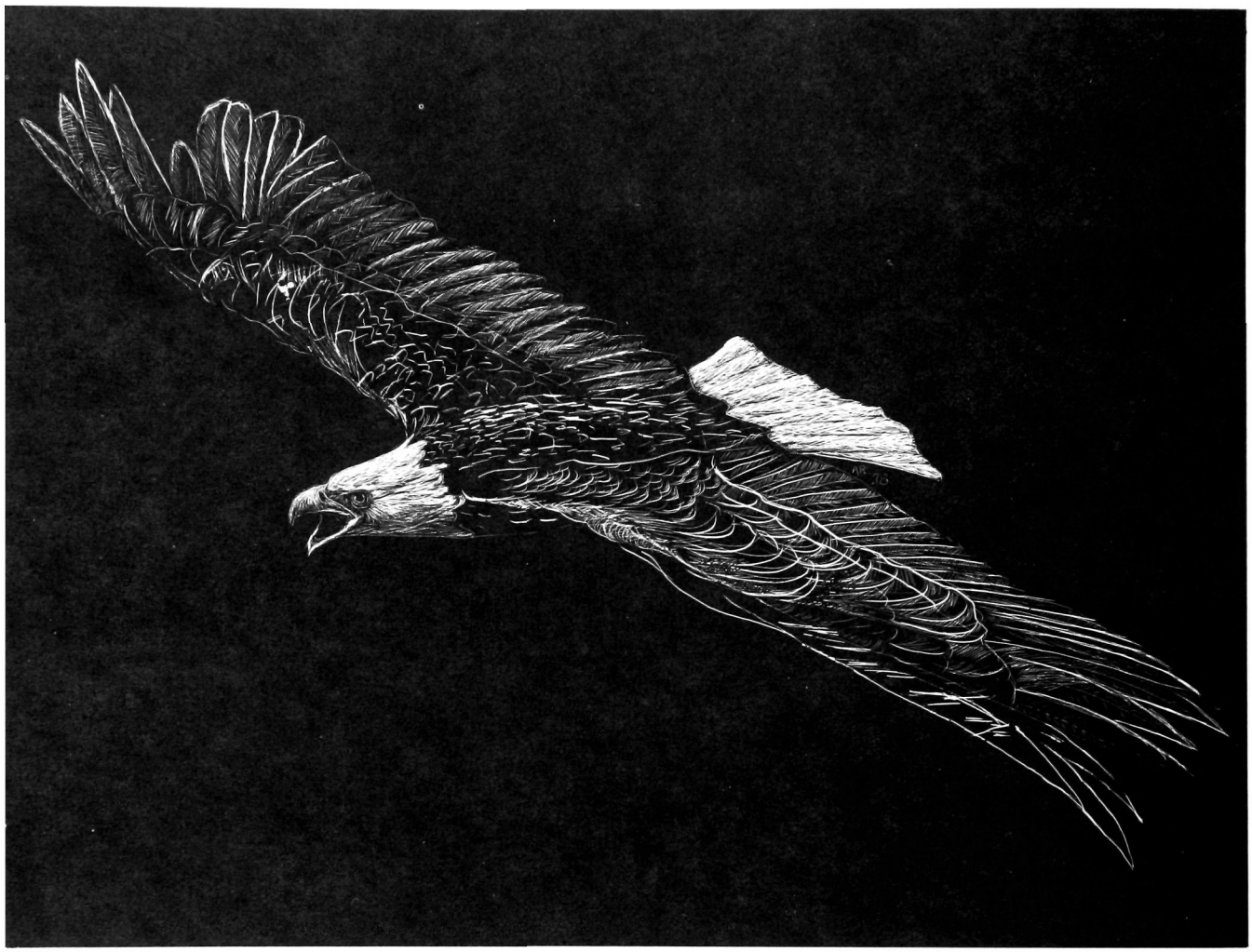


I went to the woods because I wish to live deliberately, to front only the essential facts of life, and see if I could not learn what it has to teach, and not when I came to die, discover that I had not lived.

Henry David Thoreau

Published Annually By
THE STUDENTS OF THE
SCHOOL OF FOREST RESOURCES
UNIVERSITY OF MAINE AT ORONO

Cover Photo by Carney McRea



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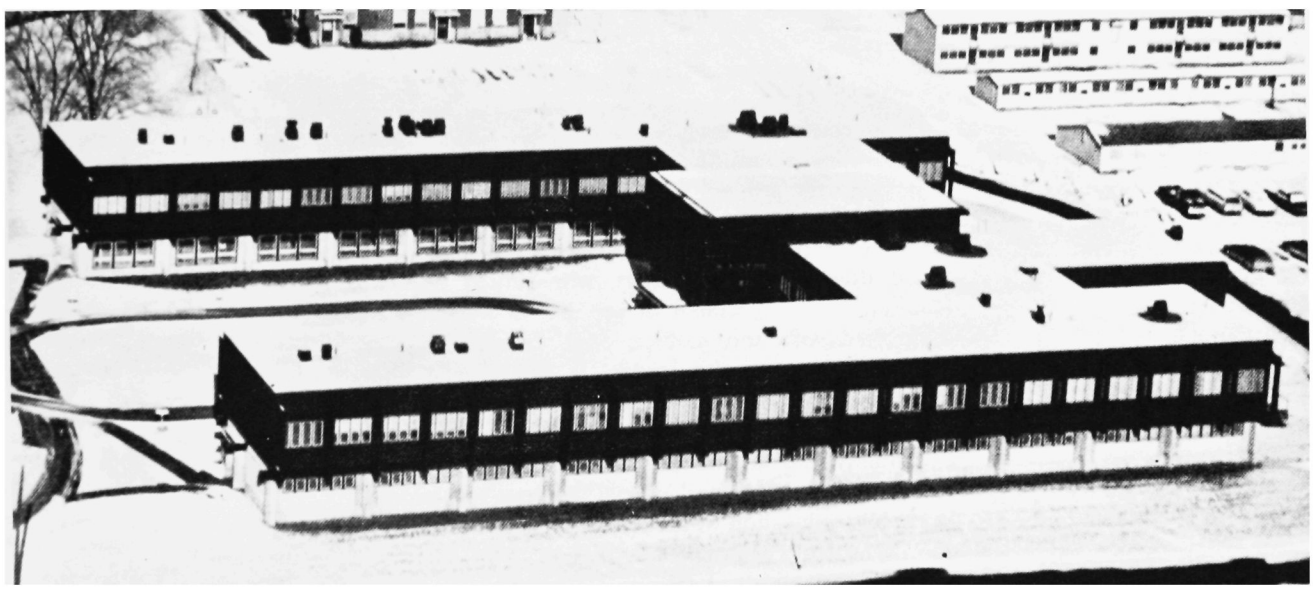


DEDICATION

MARY LOUISE BASS GIDDINGS

Mrs. Mary Louise Giddings was affiliated with the School of Forest Resources through her husband, Professor Edwin "Pop" Giddings, who retired from the faculty in 1977. Throughout her life, as well as being a devoted wife and mother, Mrs. Giddings was an outstanding community leader. It would take pages to list all the councils, committees, boards and activities she was involved with from within the Orono community and around the state.

One of Mrs. Giddings' special interests was promoting quality education which can be seen through her association with museum boards and with being on Maine's Governor's Advisory Committee on Education. In addition, Mrs. Giddings had a direct influence on education at the School of Forest Resources by establishing the Giddings Chair in honor of her husband in 1979.

Her dedication to civic services and her warmth of personality is best described by her friends and associates.

We proudly dedicate this 1980 edition of the Maine Forester to Mary Louise Bass Giddings.

Mary Louise Giddings was a person admired, loved and respected by all who knew her. An exceptional homemaker, wife and mother whose home was always ready for any occasion be it a group of friendly neighbors, the School of Forest Resources Faculty and Wives, students, an open house for the political candidate of her choice or a committee from one of the many organizations in which she was a leader.

Mary Lou was a gracious hostess who was always cheerful and optimistic in spite of her physical problems in recent years. She was a willing worker in any cause to benefit her community or state in her unassuming but efficient way.

My few words are inadequate to give due honor to Mary Lou.

Leone D. Nutting

Mary Louise Giddings was the kind of a friend and neighbor one is thankful for having. It was our privilege to know, enjoy and appreciate her as a friend and neighbor for one-third of a century.

She was a generous contributer of her talents, interests, and energy to education and community services. Few persons appreciate more the beauty of Maine seasons, lakes, mountains, the sea and forests than she did, the rich heritage of Maine history, poetry, art and literature.

All whose lives were touched by hers are richer because of that friendship.

Edwin and Ada Bates

I knew Mrs. Giddings for many years and am hard put to use anything but superlatives in referring to her. She was a devoted wife and mother, a dedicated civic leader and a real Christian lady.

Her gifts to the University of Maine and Eastern Maine Medical Center, as well as to her church are well known. These are only indications of her concern for her fellow man. Her life was an inspiration and a challenge to all who came into contact with her. The world is a better place because it had her in it.

This brief tabulation of Mrs. Giddings' qualities has not conveyed the warmth and "bubbliness" for which she will always be remembered. I apologize for not being able to find the words to do it.

She was a fun person. I was privileged to know her and am proud to offer this modest "tip of the hat" to Mary Lou.

Parker G. Cushman

It was a great privilege to have been a friend of Mary Lou's. She had so much fun and included so many in the fun.

She was the first director of the Penobscot Heritage Museum. Programs she started continue to be used in schools all over the area. She had been trained in museum work and her imagination and enthusiasm inspired amateurs and volunteers to turn in professional work on the P.H. exhibits. She had such great ability; but minimized the credit due her, making others shine.

She organized exhibits, trained docents, wrote material, and could explain to a class of youngsters how the early explorers navigated uncharted seas without electronic gear.

Anyone who knew Mary Lou is richer for the experience, and countless persons who were not fortunate to know her will benefit from her generosity for many years to come.

Bob and Julie Eaton

To have known Mary Lou Giddings even for a few short years was a rare privilege. She exemplified the person who perseveres to do her best in her relationships with others and gives tirelessly to projects which she feels need to be done. She had an unusual ability to perceive issues and problems and went about quietly and efficiently solving them when she could. As her illness progressed and her physical limitations were greater, the frustrations and discouragement she must have felt were never voiced, she always spoke with optimism and cheerfulness. She was always patient.

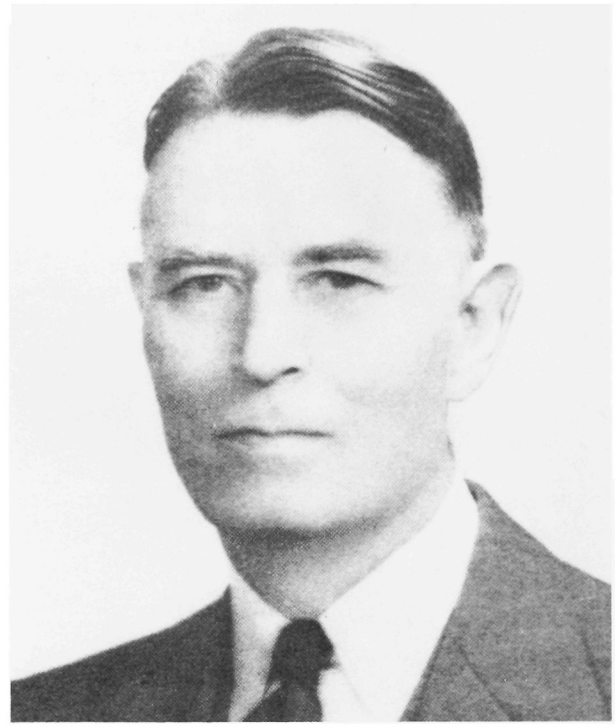
She was a devoted wife and mother but her loving concern for others also extended beyond her family. She was always interested in the School and the students. She was fun-loving and had a good sense of humor. Her courage, wisdom, optimism and warmth will be her legacy to those who knew and loved her.

Jane W. Knight

IN MEMORIUM

Robert I. Ashman

1891-1979



Robert I. Ashman was born in Sloan, New York on October 4, 1891. He and his wife resided in Chelsea, Maine. They had three daughters and several grandchildren.

Dr. Ashman received the B.A. degree from Cornell University in 1912, and an M.F. from Yale University in 1929. He was awarded an honorary Doctor of Science degree from the University of Maine in 1957.

His citation for the Doctor of Science Degree in 1957 reads as follows:

> "Born in New York, graduate of Cornell University, Master of Forestry, Yale University; able teacher and research worker, perceiving early the need for a more inclusive scientific approach to the utilization of our forest resources; after service as a forester and as college teacher, joined the faculty of the University of Maine in 1930, becoming Head of the Department of Forestry in 1946; able Director of forestry programs in teaching, research and wildlife conservation, recognized for his contributions to the constructive development of Maine's forest resources, and honored on this campus as a teacher who has won the respect, affection and gratitude of his students."

SOME RECOLLECTIONS OF PROFESSOR ROBERT I. ASHMAN

by Austin H. Wilkins

My first acquaintance with Prof. Ashman began in 1931-32 when the State Forestry Department made my services available as an instructor to augment the very limited teaching staff at the University of Maine Forestry Camp at Indian Township, Washington County. In fact at that time he was the University's only faculty member in residence at camp. Soon after my arrival it became very evident to me the high esteem the forestry students held for "Prof" For some of us older graduates we affectionately called him "Bob".

In the ensuing years, right up to the final hours of his passing, a warm and close friendship grew between us through a series of interesting events, a few of which are reflected here.

During his teaching years at University of Maine School of Forest Resources and following his retirement, students, graduates, faculty members and other associates knew him as a man of patience, understanding, sense of humor and a compassion for needy undergraduates.

On many occasions he would bring students home weekends and holidays to work in his plantations in Chelsea, paying for their labor and providing board and lodging in his home. Also, unknown to many, he would make small loans to needy students and never once did any one of them default this financial assistance.

Over the years he had established a number of forest plantations on old field and pasture lands he owned near his home in Chelsea. I recall the several invitations, when I was in public office, to join him on a walking tour through these plantations as he explained his work to University of Maine Forestry students who came each spring as part of their course in silviculture. He was very proud of these plantations and kept active in pruning, thinning, harvesting and even setting out recent nursery stock of European and Japanese Larch.

Another characteristic of this man was the warmth and interest he generated with his students after graduation, and others as well, by writing special and personal notes at Christmas time. Returns came from all parts of the country and I was privileged to read a number of them. In this manner he accumulated a valuable file as a reference for the University of Maine Forestry Alumni records. He also served as New England section historian of the Society of American Foresters. I was privileged to work with him in updating material in preparation for the 50th Anniversary History of the New England Section, soon to be published.

Another example of Prof. Ashman's magnetism with students and graduates was the recent New England Section winter meeting in Portland, 1978. He was recognized at the banquet head table and at the conclusion of the evening program students surrounded him for a most interesting but lengthy question and answer period. Finally it became necessary to rescue him so that he could retire to his room. He always enjoyed the annual University of Maine Alumni breakfast meetings at the winter section sessions.

I shall always be grateful for his time and effort, without fee, in editing the first draft of my book *Ten Million Acres of Timber*. He was a master of English grammar.

One of the final acts of recognition which he was able to enjoy while still alive was the official notice of his election to the grade of Fellow of the Society of American Foresters. This pleased him greatly. At the recent national convention of the SAF in Boston last fall the certificate of Fellow was presented posthumously and received by Director Fred Knight of the School of Forest Resources and later presented to Mrs. Ashman.

Finally for those of us who were privileged to know and work with him, we pay tribute to the memory of a very dedicated man and a credit to the forestry profession Dr. Robert I. Ashman, Professor Emeritus of Forestry, School of Forest Resources, University of Maine, Orono, Maine.

Austin H. Wilkins
University of Maine 1926
Former Forest Commissioner
1958-1972

Distinguished Professor 1980

Dr. Fred B. Knight

Xi Sigma Pi Awards Banquet

April 15, 1980

Greetings from the Director

I look forward each year to the opportunity to express congratulations and good fortune to the graduating students of the School of Forest Resources. It is also a time in which I can say keep up the good work to the students in the other classes. The Class of 1980 is the first of the classes of the eighties; I'm sure the graduates recognize the great challenges ahead. The 1980 class is also the last one that will include so many for at least a few years. The three classes behind will be considerably smaller.

As we look at the past year we can feel quite happy with the local situation and the successes of our educational and research programs. But, we must all be fearful about the future; this has been a difficult year on the national and international scale. Our energy problems are extreme and these contribute to the high inflation rate that we must somehow reduce. Along with these we have very serious international problems. All of these present challenges which will be faced by all of you during the eighties. We all must work on these problems or we will be in more serious trouble by the end of the decade.

The Class of 1980 has distinguished itself in many ways. We have people with fine leadership qualities, students who are excellent scholars, and many with a fine professional attitude. I'm pleased to know that so many of our seniors are members of their professional organizations; this is what the School should expect from well prepared people. You will enter your professions with a tradition of being among the best prepared people in the nation.

We have received support for our educational programs from several sources during the past year. Foremost is the Edwin L. Giddings Professorship in Forest Policy. When this new position is filled we will have a full complement of professional specializations for the School. We are grateful to the Giddings family for this gift.

We are also receiving a greater amount of outside support from the Kenduskeag Foundation. These funds are available to support visits from outstanding scientists and teachers, to help us on scholarship programs, and to provide for special equipment needs to further our objectives. Dr. Keith Arnold visited our school during the fall of 1979. His month long visit was possible because of the Kenduskeag support.

You have seen two of your faculty leave Maine during the past year and have welcomed Dr. Richard Jagels in Wood Technology as a replacement for Dr. Litvay. We are still looking for a person to replace Dr. Shuler; we have been especially pleased that Mary Dyer has been available to help during the fall of 1979. We expect such changes to occur and we adjust to them whenever they happen.

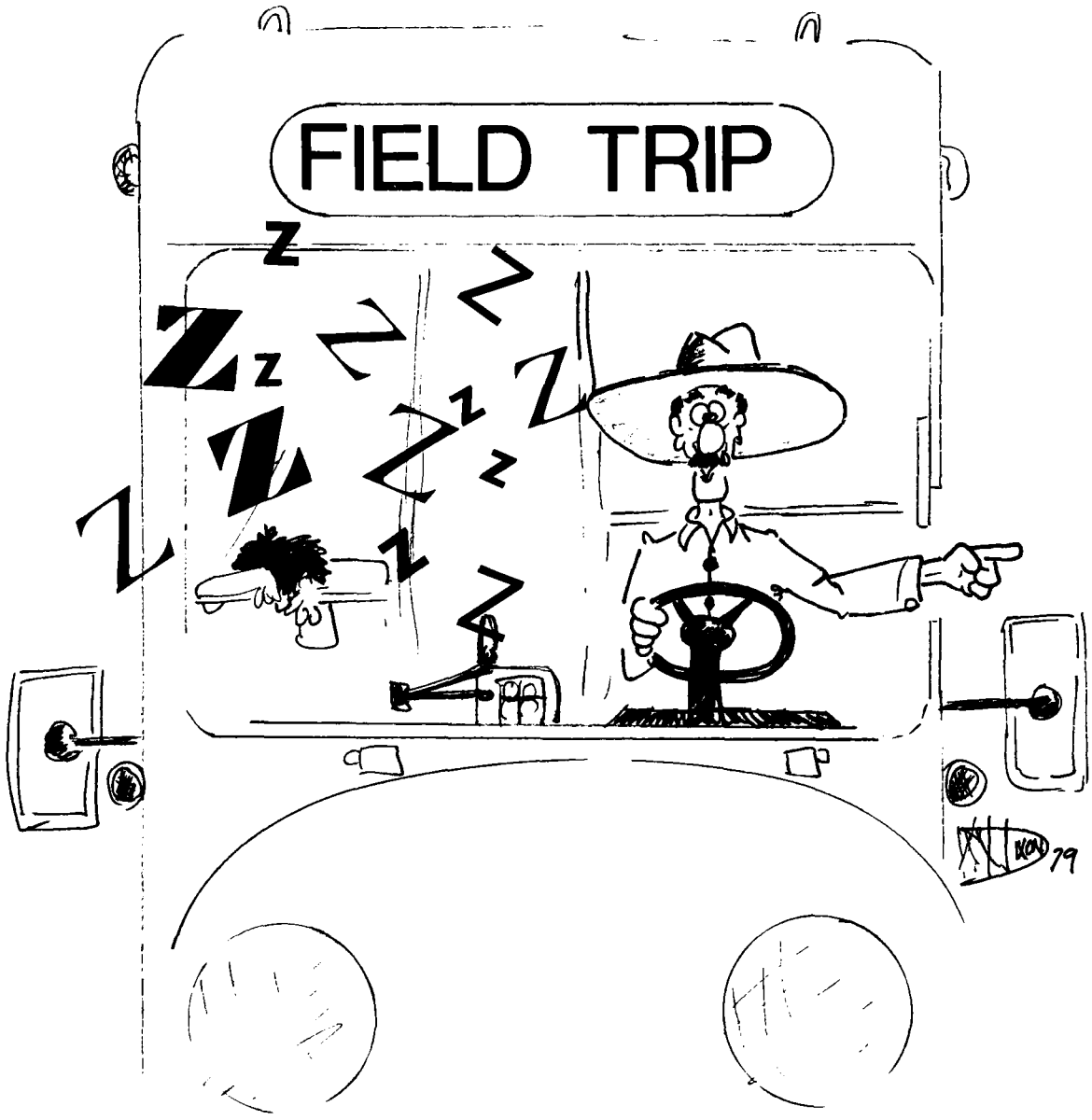
The Class of 1980 has achieved their first goal, a degree in the profession the members have selected. You are foresters, forest engineers, wildlife managers and recreation specialists. Good luck to you in your careers as you continue the educational process. Our graduates of 1979 did well in the professional job market; we hope the Class of 1980 does the same. I also hope that the students in the other classes will keep their goals in mind and will not be side tracked by a mathematics course (Ms 26 or other) or by false statements by misguided persons who state that there are "no jobs" My wish is that 1980 will be a fine year for you as you seek to become better able to contribute as a professional toward the best uses of the natural resources of this finite world.

Sincerely yours,

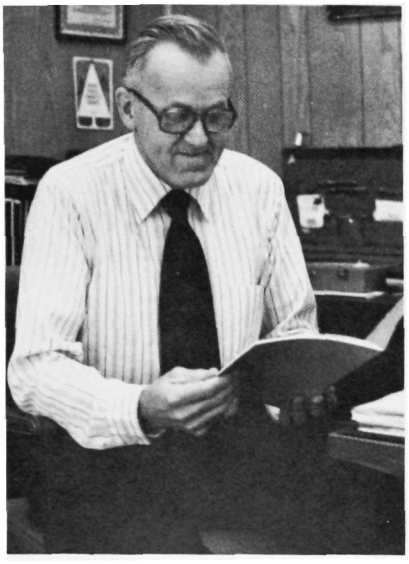
Fred B. Knight

FRED B. KNIGHT
DIRECTOR

FACULTY

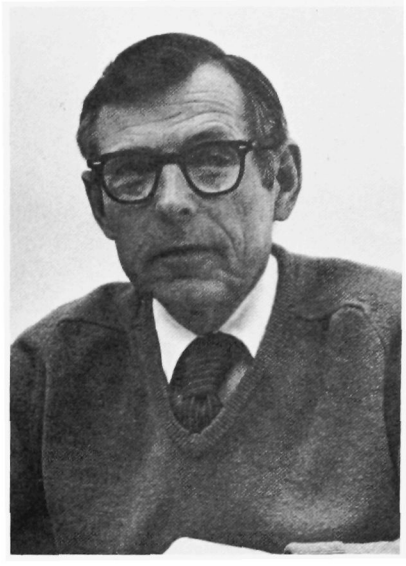


"Over here we see the natural..."



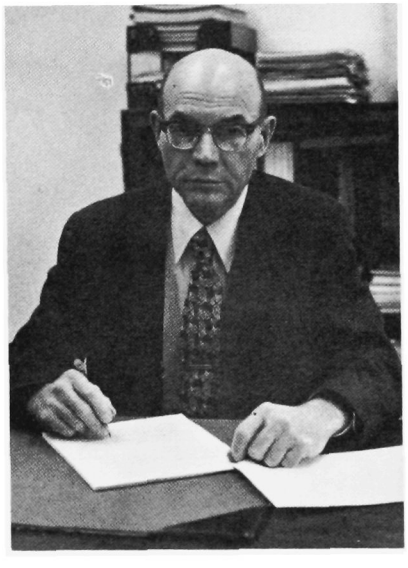
FRED B. KNIGHT
Director of the School of
Forest Resources
Dwight B. Demeritt Prof. of Forestry
B.S., Univ. of Maine, 1949
M.F., Duke Univ., 1950
D.F., Duke Univ., 1956
Management Problems
Honors Courses

MARSHALL D. ASHLEY
Assoc. Director for Administration
Prof. of Forestry
B.S., Univ. of Maine, 1965
M.S., Purdue Univ., 1966
Ph.D., Purdue Univ., 1969
Photogrammetry and Remote
Sensing of Natural Resources
Forestry Summer Camp Director



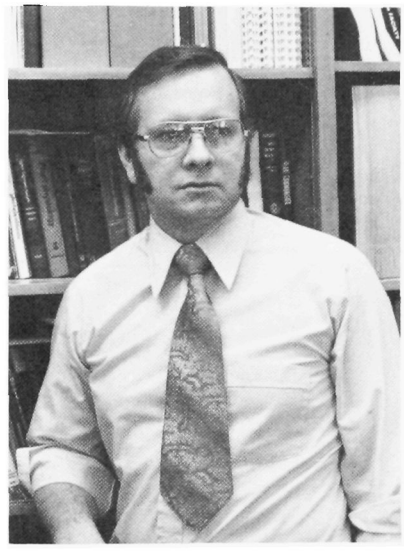
MALCOLM W. COULTER
Assoc. Director of Wildlife
Prof. of Wildlife Resources
B.S., Connecticut, 1942
M.S., Univ. of Maine, 1948
Ph.D., Syracuse, 1966
Ecology
Senior Seminar
Graduate Seminar

THOMAS J. CORCORAN
Prof. of Forest Economics
B.S., Michigan Technological
University, 1955
M.S., Purdue Univ., 1960
Ph.D., Purdue Univ., 1962
Forest Economics
Production Analysis in Forestry
Planning and Control of Forest
Operations
Research in Forestry Economics

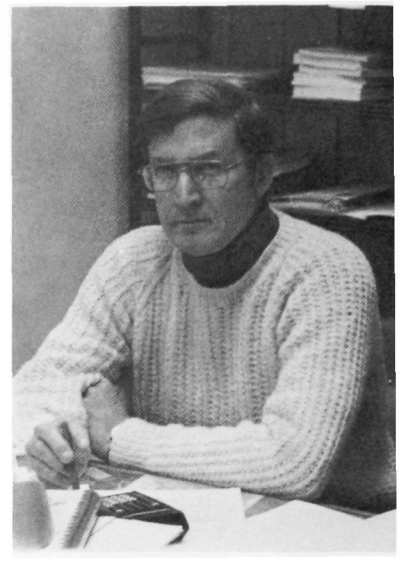


RALPH H. GRIFFIN
Prof. of Forestry
B.S., Virginia Polytechnic Institute,
1943
M.F., Yale, 1947
D.F., Duke, 1956
Silvics-Forest Ecology
Silviculture
Advanced Silviculture
Forest Influences

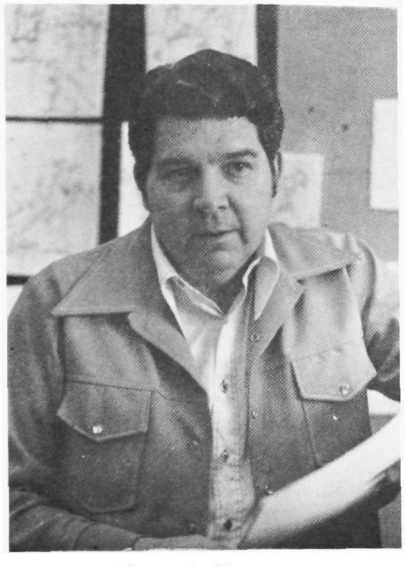
DAVID STEVEN CANAVERA
Assoc. Prof. of Forestry
B.S., Michigan Technological University, Houghton
Forest Management
M.S., Michigan State University
Forest Tree Improvement, 1967
Ph.D., Michigan State University
Forest Tree Improvement, 1969
Forest Planting



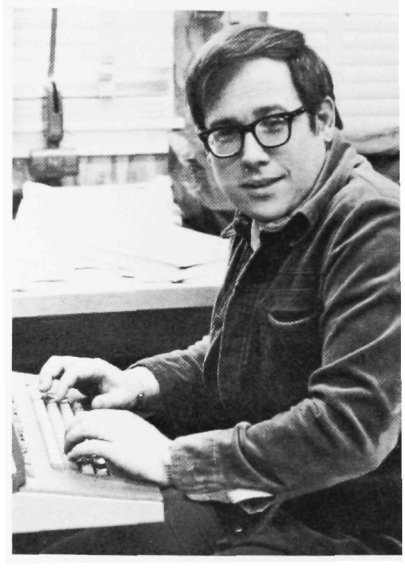
ROBERT KENT SHEPARD
Assoc. Prof. of Forestry
B.S., Univ. of Michigan, Forestry, 1963
M.S., Duke Univ., Forest Entomology, 1964
Ph.D., Univ. of Michigan, Forest Ecology, 1970
Watershed Management
Senior Seminar
Statistical Inference in Forest Resources Lab



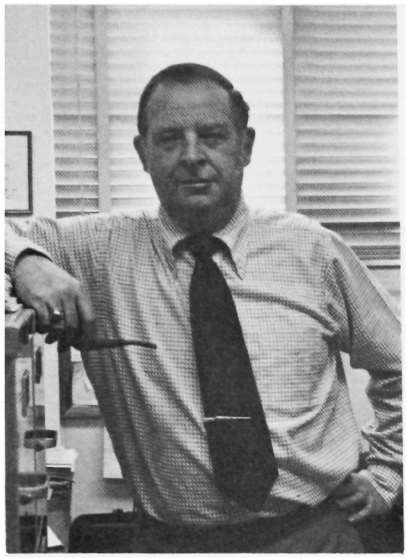
BENJAMIN F. HOFFMAN
Assoc. Prof. of Forestry
B.A., Univ. of Virginia, 1951
M.S., Yale Univ.—Forestry, 1957
Timber Management
Harvesting of Forest Crops
Senior Seminar



FLOYD L. NEWBY
Assoc. Prof. of Forestry
B.S., Utah State Univ.
M.S., Univ. of Michigan, Forest Recreation, 1966
Ph.D., Univ. of Michigan, Forest Recreation, 1971
Forest Recreation Management
Introduction to Forest Resources Lab
Recreation and Park Management
Forest Policy and Administration



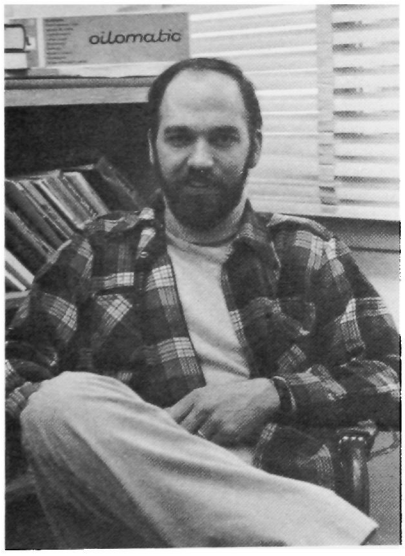
THOMAS B. BRANN
Assist. Prof. of Forestry
B.S., Univ. of New Hampshire
M.S., Univ. of New Hampshire
Ph.D., Virginia Polytechnic Institute and State University
Statistical Inferences in Forest Resources
Forest Biometry
Forestry Summer Camp



JAMES E. SHOTTAFER
Prof. of Wood Technology
B.S., State Univ. of New York, 1954
M.S., State Univ. of New York, 1956
Ph.D., Michigan State Univ, 1964
Analysis in Forest Utilization
Wood Technology II
Research Methods in Forest Utilization

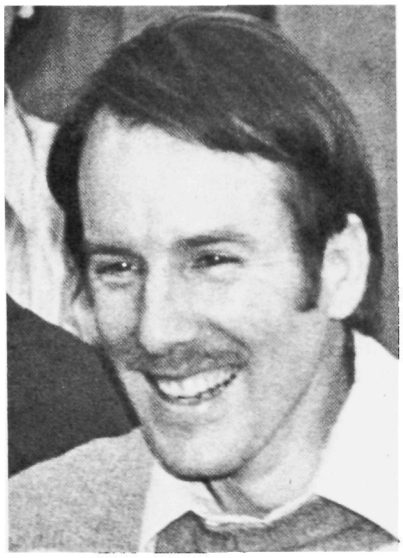
RICHARD JAGELS
Assist. Prof. Wood Technology
B.S., SUNY Syracuse
Wood Anatomy
M.S., SUNY Syracuse
Forest Pathology
Ph.D., University of Illinois
Structural Botany
Wood Identification and Properties Lab
Wood Anatomy
Research Techniques in Wood Anatomy
Senior Seminar

RICHARD A. HALE
Assoc. Prof. in Wood Technology
B.S., Univ. of Maine, 1949
M.F., Yale, 1950
Primary Wood Processing
Wood Preservation and Drying
Senior Seminar

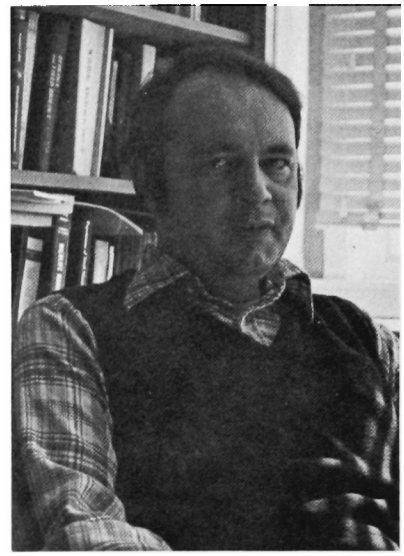


CHARLES P. WILLIAMS
Assist. Prof. of Forest Technology
B.S., Univ. of North Carolina, 1969
M.F., North Carolina State Univ., 1972
Forest Fire Control
Forest Measurements
Applied Silviculture
Forest Land Management

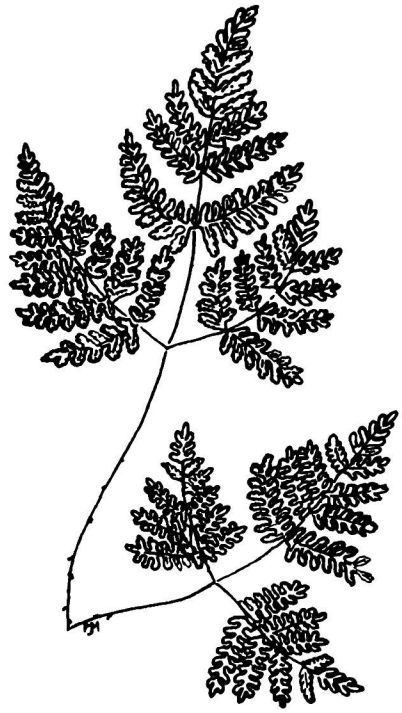
WALLACE C. ROBBINS
Assoc. Prof. of Forest Technology
B.S., Univ. of Maine, 1954
M.S., Univ. of New Brunswick, 1956
Director-Two Year Program
Two-Year Summer Camp
Intro. to Forest Technology
Aerial Photo Interpretation
Wood Products Utilization
Forest Protection
Wood and Tree Identification



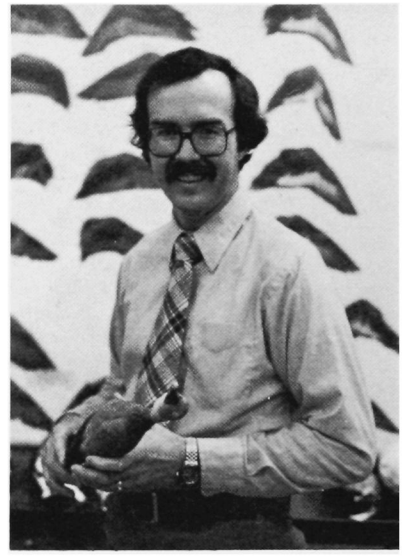
RAY B. OWEN, JR.
Prof. of Wildlife
B.A., Bowdoin, 1959
M.S., Univ. of Illinois, 1966
Ph.D., Univ. of Illinois, 1968
Ecology
Senior Seminar
Ecological Energetics



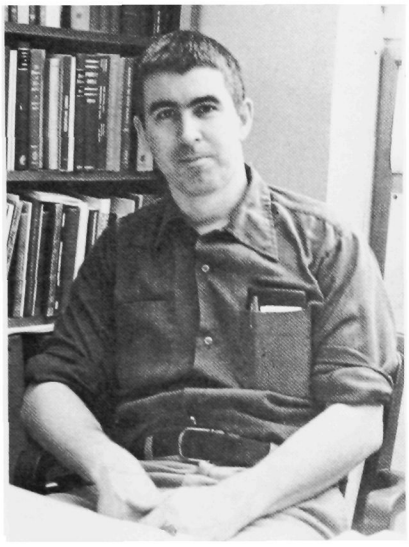
JAMES R. GILBERT
Assoc. Prof. of Wildlife
B.S., Colorado State Univ., 1968
M.S., Univ. of Minnesota, 1970
Ph.D., Univ. of Idaho, 1974
Principles of Wildlife Management
Senior Seminar
Biological Characteristics of Game
Birds and Mammals



CHESTER F. BANASIAK
Assist. Research Prof. of Wildlife
B.S., Michigan State University
Forestry, 1948
M.S., University of Massachusetts
Wildlife, 1952
Ph.D., University of Maine
Forest Resources, 1974



TERRY A. MAY
Assist. Prof. of Wildlife
M.S., Colorado State Univ., 1970
Ph.D., Univ. of Colorado, 1975
Biological Characteristics of Game
Birds and Mammals
Director-Wildlife Summer Camp



DAVID B. FIELD
Assoc. Research Prof. of Forestry
Coop Forestry Research Unit
B.S., Univ. of Maine, Forestry
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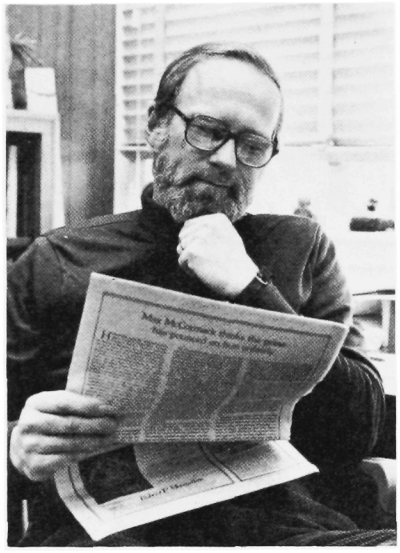
Ph.D., Purdue University
Forest Management



MAXWELL L. MCCORMACK, JR.
Research Prof. of Forestry
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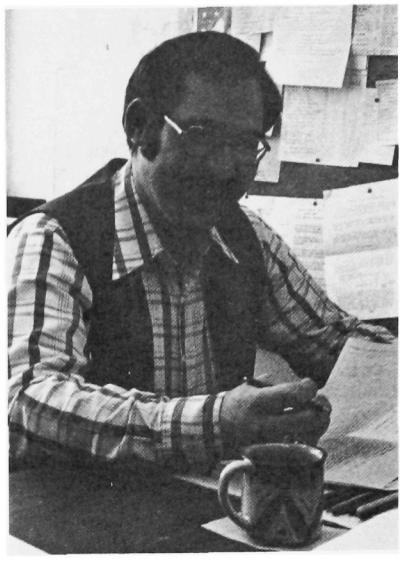
B.S., Univ. of Maine, 1956
M.F., Duke Univ., 1959
D.F., Duke Univ., 1963



MARK W. HOUSEWEART
Assist. Research Prof. of Forestry
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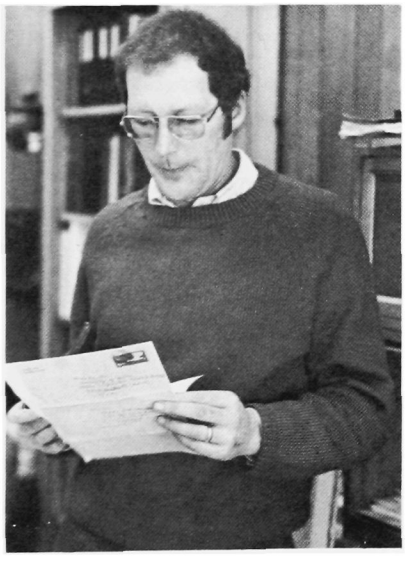
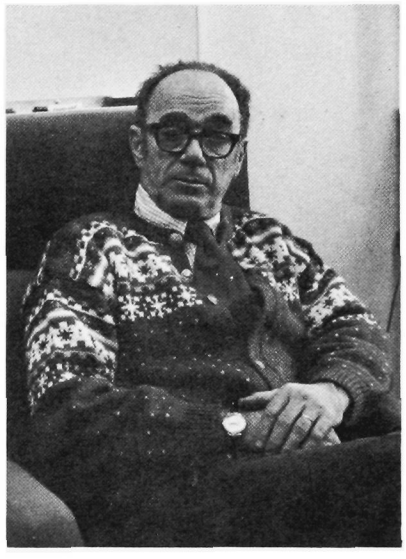
B.S., Kansas State Univ., 1969
M.S., Colorado State Univ., 1971
Ph.D., Univ. of Minnesota, 1976



JAMES A. SHERBURNE
Coop Assoc. Prof. of Wildlife Resources
Unit Leader Coop Wildlife Research Unit
B.S., Univ. of Maine, 1967
M.S., Univ. of Maine, 1969
Ph.D., Cornell Univ., 1972



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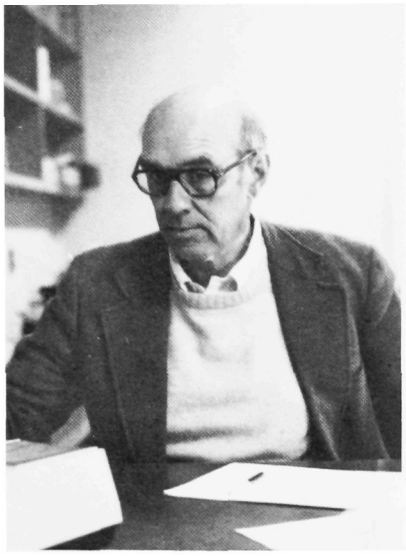
M.F., Duke Univ., Biometrics, 1946
Ph.D., Duke Univ., Biometrics and Tree Physiology, 1948
Complete Tree Institute



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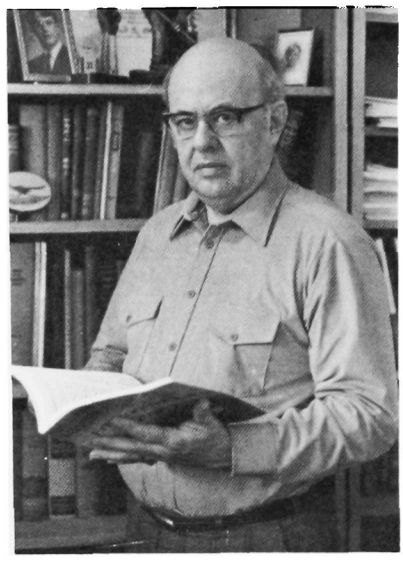

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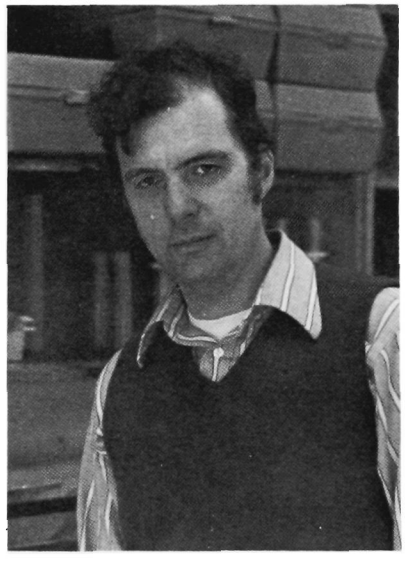

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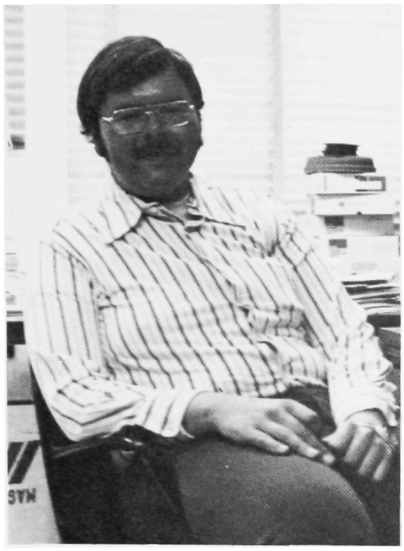

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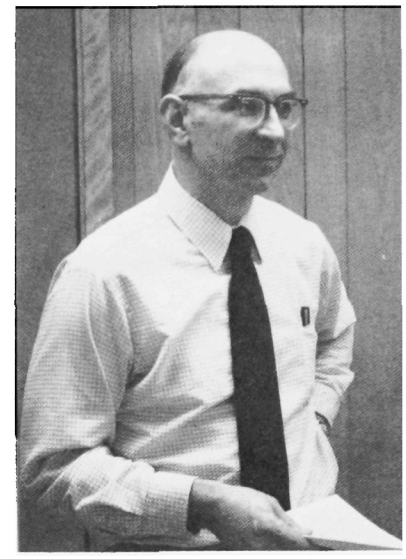

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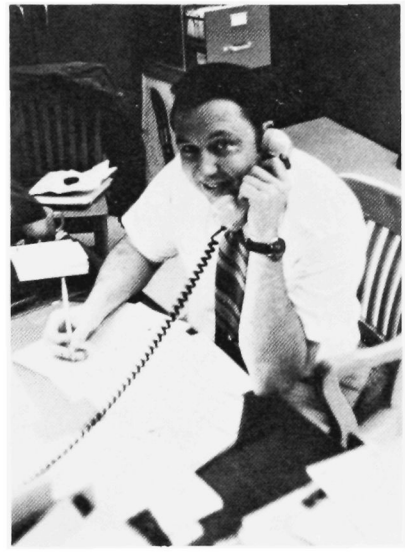

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M.A., Northern Arizona Univ.,
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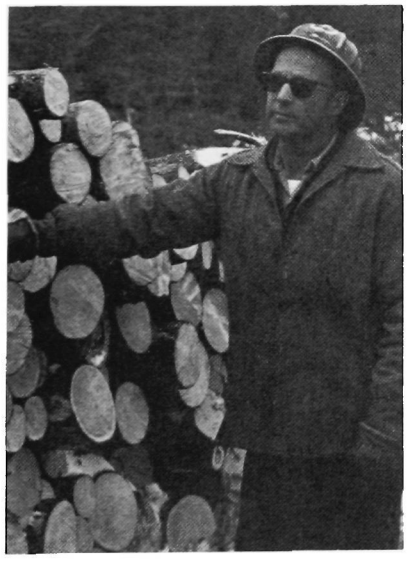
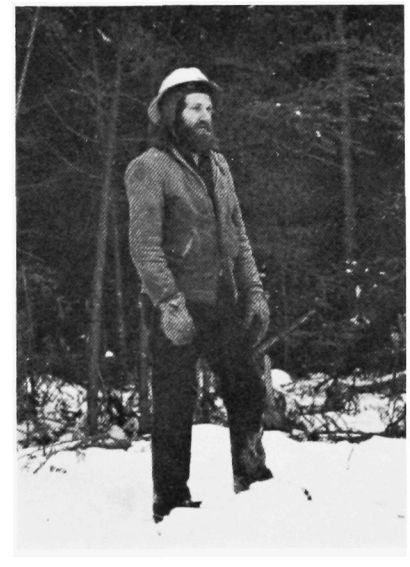
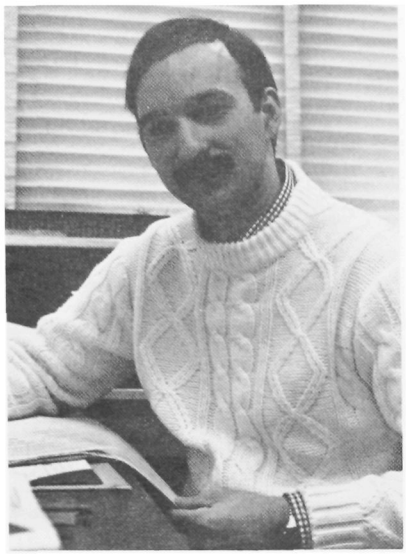


ROGER F. TAYLOR
Superintendent of Dwight B. Demeritt and Harold W. Worthen Forests
Univ. of Massachusetts



PETER ORZECH
Research Technician
B.S., Forestry
Univ. of Vermont, 1976



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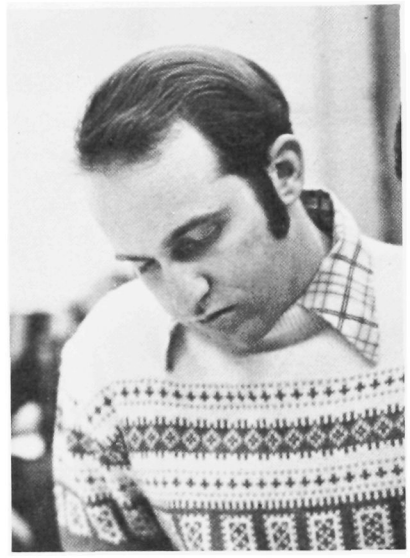
Instructor in Forest Resources
B.S., Louisiana State Univ., 1976
M.S., Univ. of Maine, 1980
Introduction to Forest Resources



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General Engineering and
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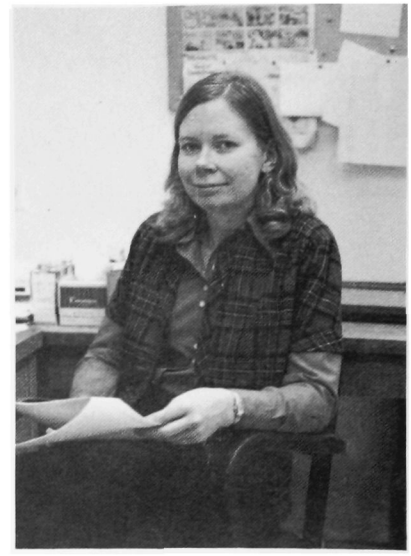
B.S., Univ. of Maine, 1976
M.S., Univ. of Maine, Forest
Remote Sensing, 1978
Elementary Plane Surveying
Advanced Plane Surveying



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Wood Technology I

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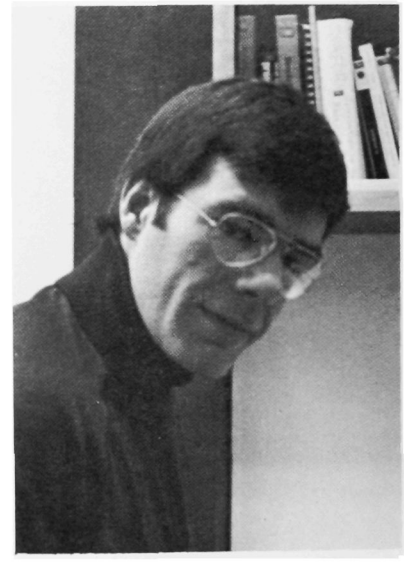

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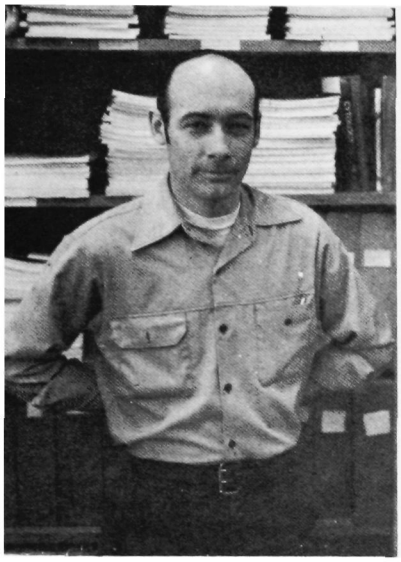

PETER CARON
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Associate Forestry, 1974
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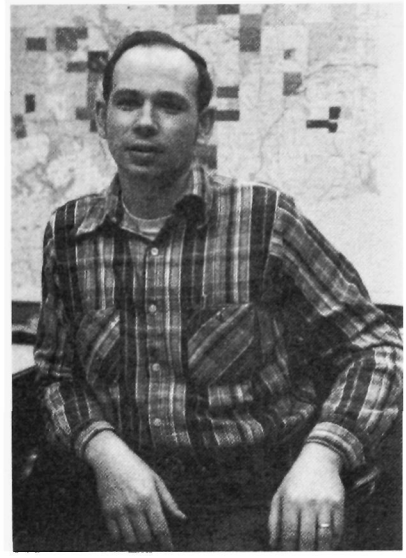

ELLIS B. SPRAGUE
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New York State Ranger School, 1964
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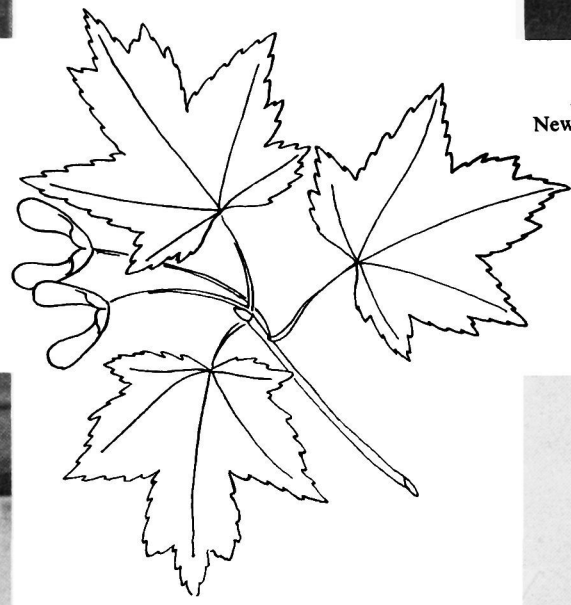

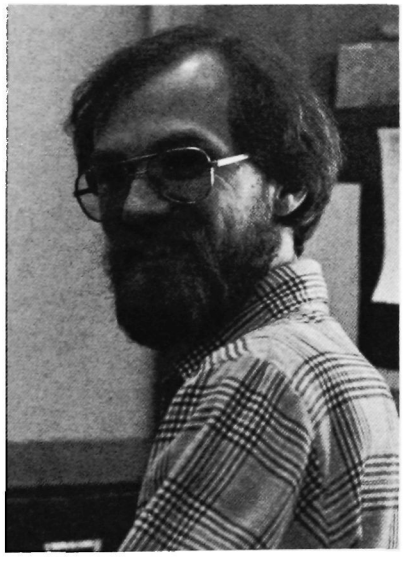

ROBERT K. LAWRENCE
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B.S., Biology
Mid-America Nazarene College, 1972
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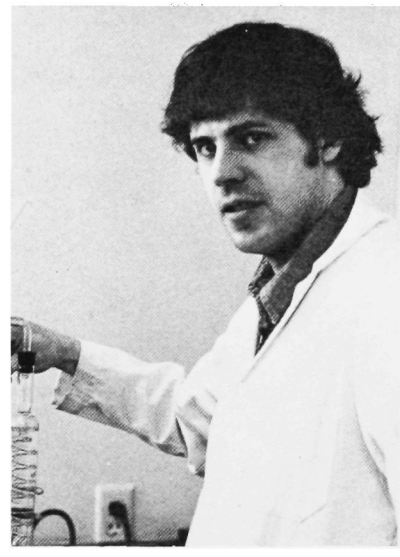
Univ. of Arizona, 1974



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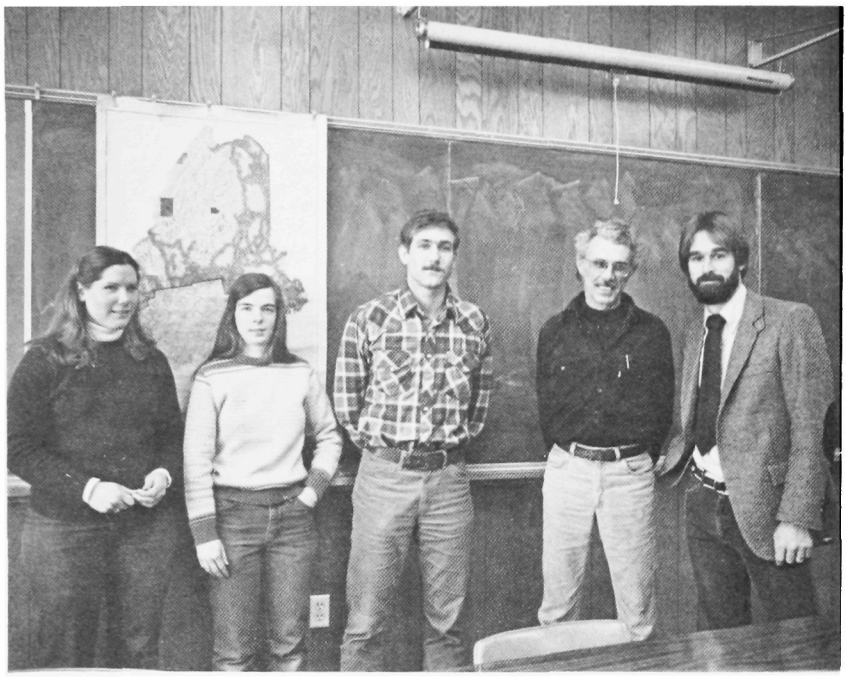

Greenwoods Project

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Beth DeHaas

Karl Imdorf

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Bob Seymour (Not Pictured)

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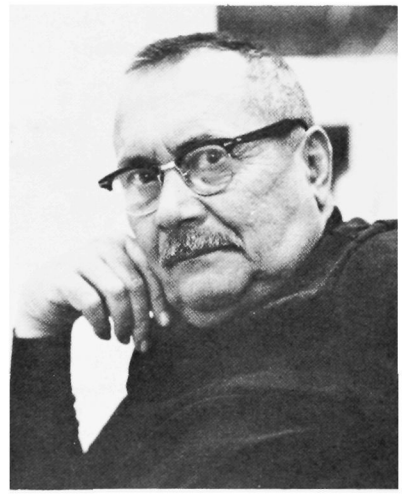

Kenneth H. Hendren
Director of Planning
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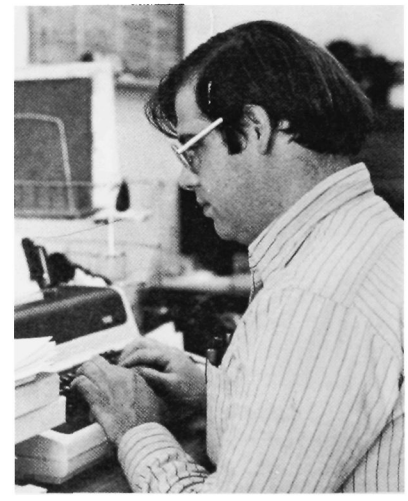

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M.S. Forestry
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Gregory Baker, Professor Emeritus of Forestry
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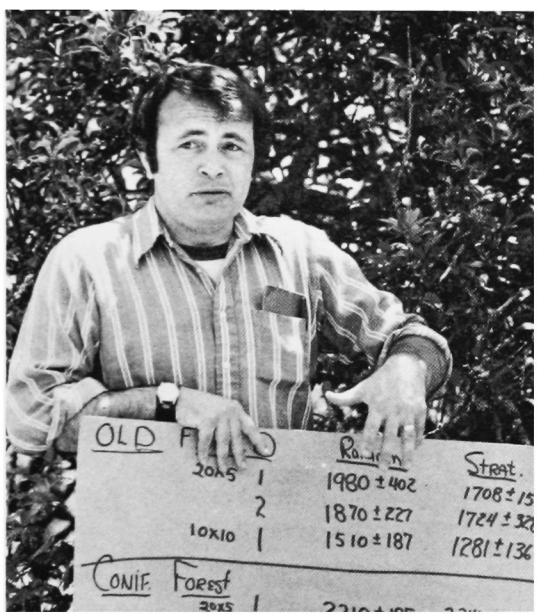
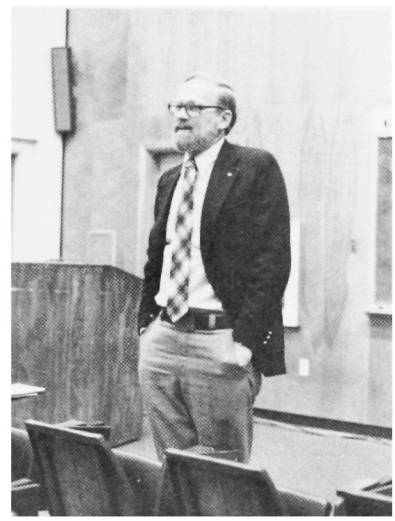
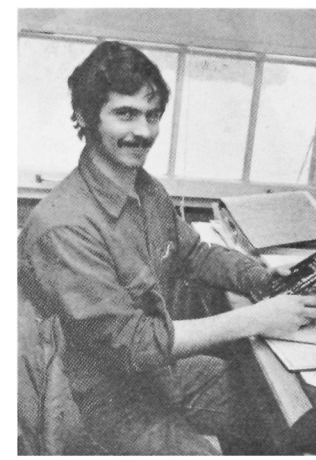
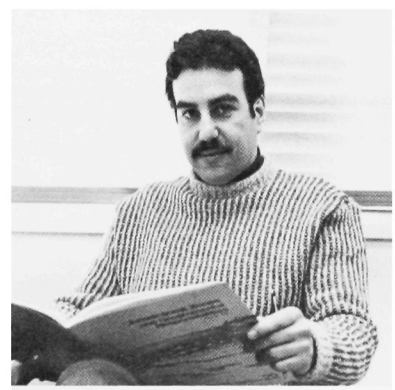
Jerry R. Longcore, Biologist, U.S. Fish & Wildlife Service
Gordon D. Mott, Research Forester, U.S. Forest Service
Ralph S. Palmer, Retired from New York State Museum & Science Service; Current Lecturer in Zoology Dept., UMO
Sarah Redfield, State Attorney General's office
Thomas B. Saviello, Northern Forest Research Center of International Paper Co.
Howard E. Spencer, Jr., Leader, Migratory Bird Project, Maine Department of Inland Fisheries and Game
Charles D. Webb, Manager, Northern Forest Research Center of International Paper Company









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Janice Gifford, Ad. Asst.

Nora Ackley

Regina Pelletier

Bottom L to R:

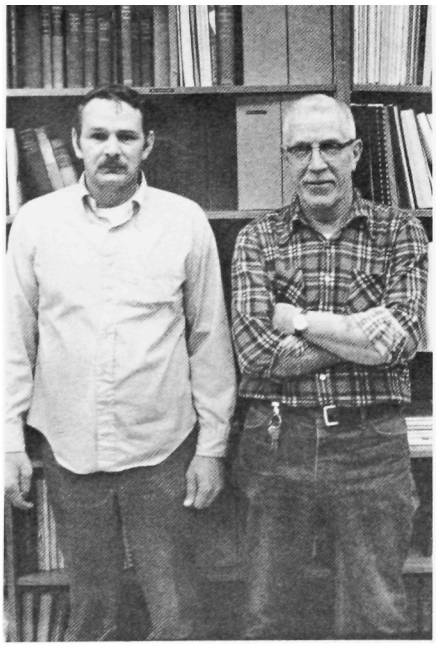
Amy Morin

Wanda Grenier

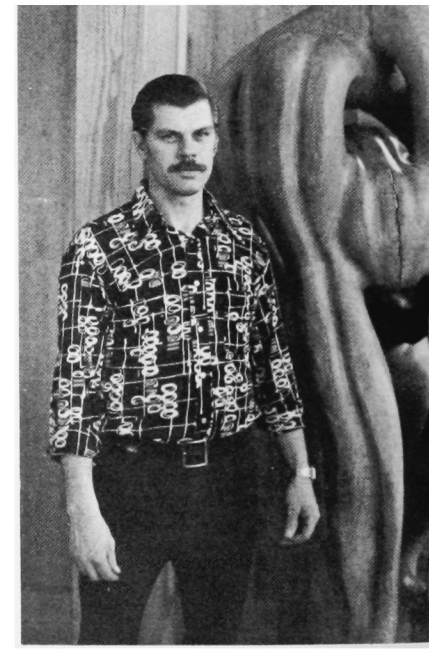
Cynthia Paschal

Maxine Horne

JANITORS



Dick Robichaud, Mel Reynolds



Walter Legere

FEATURE ARTICLES

THE GREENWOODS PROJECT–

a brief description

D. Gordon Mott, William Kemp and Karl Imdorf

On June 1, 1979 the Green Woods Project was formed as an endeavor of the School of Forest Resources. The project mission is to develop and implement an approach to one of the most difficult problems in forest management in the State of Maine: spruce budworm. Green Woods' approach lies along the path of Integrated Pest Management—a newer concept in applied entomology.

Integrated pest management—a concept as diverse as its proponents—has emerged in the seventies as the panacea for budworm as well as a wide assortment of other pests. Somehow, on a vague intuitive level, everyone finds great hope that there is a halcyon world ahead with freedom from both insect attack and the ominous cloud of chemical pesticides. It is difficult to span the diversity of concept about IPM. To some, it is straight science fiction. Computer programs feed the most current counts of pest population density made by machines that sense fluorescence from egg capsules, couple those data with weather trends and analyses of foliar nutrient content. Forest composition, determined from satellite imagery, is processed by other computers, maps of spray blocks are optimized in shape, and flight plans are drawn by intricate algorithms to most favorably limit insecticide use. The long-term economic and forest productivity consequences of protection are assessed by simulation and decision models, and then the selected pest control action is carried out with the aid of intricate satellite-based navigational systems and aerial equipment worthy of the military.

To some, IPM is biological engineering. Fundamental biological properties of the insect are vulnerable to man's deep probes and thrusts. A confusing abundance of synthetic sex pheromones disrupts mating; plant extracts and synthetic compounds stop feeding; development can be modified by growth regulators. Bacteria lethal only to lepidopterans, and viruses and fungi, can all be produced in artificial media on alternate hosts and introduced in sufficient unnatural abundance to control some pests. The genetic structure and fecundity of pest populations can be manipulated.

To others, IPM is ecosystem engineering. Chemical and biological pesticides are selected and applied in carefully timed smallest possible doses to best augment the effects of natural parasites and predators. Habitat and host plant characteristics are managed to reduce vulnerability. Each component of the intervention system is manipulated to obtain incremental advantages which collectively produce a whole equal to or greater than the sum of its parts. There is no reliance on a

single ingredient. This, an integrated pest "intervention" system is, of course, what was meant when the term "integrated pest management" was introduced. Nothing is lost by sharpening the semantics here a bit.

And some consider that IPM consists of coordinating management in the administrative sense: setting policy, and directing of activities of diverse institutions and agencies.

Of course, integrated pest management is all of these things—or one, if it is indeed a silver bullet, or a few arranged together if they do the job. In concept, the "integrated" approach selects from the array of interventions and decision methods the set of approaches that does the job best. "Best" seems to come to rest on the balance between maximum cost effectiveness and minimum chemical usage.

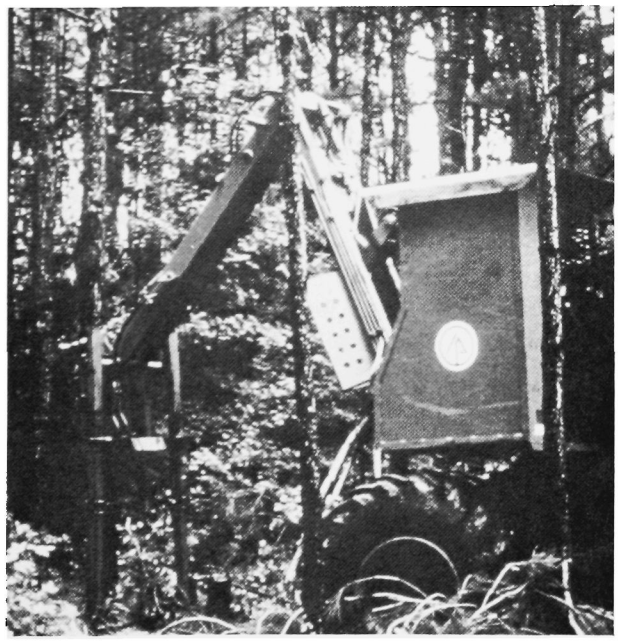
In some cases in agricultural practice, there is a happy coincidence of aims. When chemicals can be selected for their preferential treatment of natural enemies and sparingly applied at the right times to work best in the same sense, the net cost of a slight reduction in crop yield can be more than offset by the savings in pesticide cost.

But agriculture is a simpler, more artificial biological system than a forest. Man knows a great deal more about the simpler plant crop systems for which he as-

sumes most of the burden of existence—planting, defending from competition, feeding, and so forth. In a forest, as in fisheries and wild animal resources, man is a novice intervener for the most part ignorant of the ultimate consequences of his presence and profoundly dependent upon activities he knows virtually nothing about carried on by many organisms he has not yet seen. In the end, empiricism must be brought to bear: our knowledge for the most part derives from our experience. Our experience with spruce budworm is now beginning to gain some length.

It is hoped that such an approach can be developed here and ultimately lead to a substantial reduction in insecticidal treatment without major losses of wood fiber, thus insuring a sustained wood supply for landowners with different management objectives, and reducing the vulnerability and susceptibility of the forest to spruce budworm.

The Green Woods initiative begins with coordinating Integrated Protection Management which involves the integration of harvesting and spraying on an optimal basis, using detailed information and analysis of the resource. Green Woods is working on four key elements of such an IPM system. The first of these is a wood supply analysis, which will indicate how much softwood is required to sustain various levels of industrial output. Second, target definitions are being developed so that harvesting and spraying can be developed to complement one another. This essentially involves an improved forest-type mapping system. Third, work is underway to be able to deliver more precisely targeted aerial spraying to only those stands that require treatment. Fourth, refined silvicultural systems and forest management strategies are being developed to implement targeted harvesting that concentrates on



removing balsam fir, and thus partial cutting in a modified shelterwood approach.

The Green Woods Project is now in the process of introducing these IPM approaches on three demonstration areas in Maine. Here the principles of IPM will be tested and demonstrated. Each of these demonstration areas represents different ownerships and forest characteristics as well as different management objectives. The first of these areas is on Great Northern Paper land and consists of 120,000 acres in the headwaters region of the St. John River. Here harvesting operations are underway, and fiber production is the principle management goal. The second area is 40,000 acres in northwestern Maine, owned and managed by the Seven Islands Land Company. Management goals here are for an integrated product mix of both sawlogs and pulpwood. The third area of approximately 20,000 acres comprises the Scientific Forest Management Area of Baxter State Park. Future management in Baxter Park has the potential for an integrated product mix. In all areas Green Woods works closely with landowners and land managers to develop and direct harvesting practices and insecticide application, if needed, to ensure a continued wood supply for the future.

The need for Integrated Protection Management is real. As budworm damage progresses, the potential exists for a problem with maintaining a long term wood supply. Since the late 1950's large scale aerial applications of chemicals to protect the forest have been conducted. Previously there has been little, if any, coordination between harvesting and chemical protection. In recent years it has become clear that insecticides are not sufficient nor desirable long term answers to the spruce

Boom House

budworm problem. There are growing concerns about public health and environmental contamination, and increasing pressure on state and federal agencies to limit dependence on chemicals.

A major part of the Green Woods Project takes place in the field. Studies are being conducted to prescribe and monitor the response to various management treatments. Budworm population monitoring is done before and after chemical treatment and also in untreated areas. Foliage protection surveys evaluate the degree to which foliage was preserved by spraying. Hazard ratings determine the vulnerability of stands to budworm attack. Spray deposit assessments help determine deposition patterns, quality of coverage, and degree of targeting. On the environmental impact side, sampling is conducted to assess the impact of spraying on aquatic and terrestrial organisms.

The Green Woods Project's offices and laboratory are housed in the newly remodeled Scientific Research Building on the south side of the UMO campus. Summer field operations are headquartered at Chesuncook Lake just west of Baxter State Park at the "Chesuncook Boom House" (courtesy of Great Northern Paper) a historic and rustic structure once used to house men working on the log drives. The project also maintains outpost camps in each of the demonstration areas. Green Woods is administered by co-directors Professor John Dimond of the Department of Entomology and Gordon Mott of the U. S. Forest Service. There are

Associate Scientists Bill Kemp, Jay Krall, and Bob Seymour; also Assistant Technologists Beth DeHass, Sue Heinemeyer, and Karl Imdorf. During the summer months the project employs approximately fourteen students from the University of Maine and other institutions. Students are also employed in laboratory work and computer graphics.

During the coming years the Green Woods Project will strive to continue and expand development of the Integrated Protection Management System, improve cooperation with landowners and government agencies, and assume its role as an integral part of the School of Forest Resources and the University of Maine. Of paramount importance will be the fulfillment of the professional responsibility to protect and perpetuate for future generations Maine's most valuable resource.

What are you Going to be When you Grow Up?

by

Terry A. May
Assistant Professor of Wildlife Resources
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The question of what a person is going to be when he/she grows up is most likely associated with the uninhibited fantasy of children. However, I am forced to admit that I often reflect on this question at frequent and regular intervals, usually when I am not immersed in the day-to-day struggle to survive until the next professional crisis. (The writing of this essay is my current professional crisis.) Does this mean that for all practical purposes, I am still a child and have not grown up? Notwithstanding age, I hope the answer to both questions is yes. I say this, because children are uninhibited, inquisitive, unbiased, receptive to new ideas and experiences, and are eager to learn. These are characteristics that we should all have in order to respond the best possible way to issues concerning natural resources, their management, and the relation of this management to society as a whole. Unfortunately, the process of growing up often causes us to become just the opposite; reserved, set in our ways with inherent biases, and so greatly over-committed that it is difficult to seek new knowledge or find the time to question old values. An analogy can be made with the ecological processes in forests; young forests are green and growing while mature forests are in equilibrium and nearing degradation.

In this essay, I want to offer my thoughts concerning the synthesis and responsibilities of a professional resource manager. I believe it is appropriate to do this for the *Maine Forester,* because the graduating seniors of 1980 have accomplished much. Still, everyone in the graduating class must recognize that a diploma from the University of Maine does not necessarily mean that they are professional resource managers nor that they will be for all time. In essence, what the graduating seniors have shown is that they deserve to be combined with that closely-knit group of individuals who now have the responsibility for managing our earth's renewable resources and who want to become natural resource managers when they grow up.

First and foremost, I believe resource managers should be scientists, regardless of personal and specific areas of concern. My dictionary defines a scientist as an expert in science. This sort of circular definition would deserve no more than a C in any Fy class, so it is necessary to amplify the meaning of science. Science is a branch of knowledge or study dealing with a body of facts or truths systematically arranged and showing the operation of the physical and biological world. This body of facts and truths is larger today than it ever was in the past and will continue to be ever increasing in the future. Therefore, the conduct of science must result in new information.

New information is gained through systematic study. Systematic study does not mean the process of learning new facts presented in lectures nor in the vast numbers of volumes found in Fogler library. Rather, systematic study means the development of new information gained via the scientific method of identifying a problem, collecting relevant data, formulating an appropriate hypothesis, and empirically testing the hypothesis. This same process was used to discover the presence of a force we call gravity, the usefulness of antigen and antibody systems, the high energy of radiation, as well as the usefulness of fertilizers in agriculture. These are all things we take for granted today but were great discoveries in their time. Therefore, the quality of a scientist is not measured by vastness of stored knowledge but by the intensity and creativity of the research for new knowledge.

Vandemark (1978) discussed the synthesis of a scientist and stressed that it is a continual process which extends over the life-time of the individual. Some of the things Vandemark considered to be important were intellectual capacity, positive attitudes about one's self (e.g. being self-respectful, self-disciplined, self-confident, and self-reliant) and colleagues (e.g. being respectful, communicative, trusting, and flexible), and the possession of desirable personal qualities (e.g. ambition, courage, perseverance, awareness, and promptness). Vandemark likened teaching a person to be a scientist to teaching someone to love. Much of what we are to become is the result of experiencing life. Therefore, you must make a long-term creative commitment to become a scientist and you should be consciously aware of not manipulating anyone out of being a scientist.

As previously stated, scientists deal with facts and truth yet there are those who consider the scientist as the perpetrator of all sorts of evils brought against mankind. It is likely that science itself did not cause the difficulty but rather the way that scientific discoveries were used. Therein is what I consider to be an important responsibility of the natural resource manager; that is, to maintain motives which give equal weight to the betterment of society and the maintenance of the