NO PLACE IS COMPLETE WITHOUT TREES.
A HOME WITHOUT TREES IS CHARMLESS.
A road without trees is shadeless.
A park without trees is purposeless.
A COUNTRY WITHOUT TREES IS HOPELESS.
—ANONYMOUS
The "Forester" Salutes:

Dr. Robert L. Sajdak

The Forester extends its Salute this year to Prof. Robert L. Sajdak, a member of the Forestry faculty at Michigan Tech since 1962 and a Tech forestry graduate, Class of 1959.

Chief of instruction in dendrology, Bob has endeared himself to the forestry student body through his diligent insistence on maximum proficiency in their knowledge of tree characteristics, nomenclature and related subjects. These are stressed in the two basic dendrology courses which every forestry student must schedule during the freshman and sophomore years. Through this sequence, all forestry students become well acquainted with, and duly appreciative of, Professor Sajdak at an early time in their academic careers, and, conversely, he becomes thoroughly familiar with the qualities of his students.

Dendrology is not the whole of Bob's academic interest, however. His primary field of specialization is forest genetics and tree improvement. Several research projects, as well as the introduction of advanced courses, delve deeply into the problems of developing superior trees for quantity and quality production.

Bob attained his present position at Michigan Tech through a circuitous route extending from Wisconsin, via Alaska and Minnesota. Born and reared on a farm in northern Wisconsin, Bob attended high school in Ashland. In 1948 he moved to Alaska, where he took a job as a truck driver. Two years later he returned to Wisconsin, and while residing in Milwaukee, married Betty Boness. A short time later, the couple moved to Alaska, where Bob resumed his employment at a truck driver. A two-year hitch of military service occupied Bob's attention from 1951 to 1953.

In 1956, Bob and Betty returned to the "lower 48" and Bob enrolled in forestry at Michigan Tech. After receiving his B.S. degree in 1959, he became an assistant ranger with the U. S. Forest Service in Minnesota. A year later, he decided to continue his education and began a nine-month residency in graduate studies at the University of Minnesota. Following this period of academic work, he took a position as a forester for the State of Wisconsin, being stationed at Tomahawk and, later, Wausau. In 1962, he accepted an appointment to the faculty at Michigan Tech.
Concurrently, Bob continued his graduate work and received the M.S. degree from the University of Minnesota in 1969. In 1966 and 1967, he took a year's leave of absence from Michigan Tech and completed a year of doctoral study at Michigan State University.

Bob and Betty reside on an acreage between Houghton and Chassell, where Bob manages a 120-acre Certified Tree Farm. He has established tree plantations related to his tree breeding work, and has the objective of growing every species which will survive in this area. His acreage is the pride of the local Soil Conservation Service personnel, who regularly bring young people to see the farm pond he built in 1971, and other conservation practices employed on the area. His woodlot serves as a source of fuel wood, and pulpwood which he markets.

Bob and Betty have two children, Peter, 13, and Paul, 5. For several years, Bob has been an active booster of junior hockey, helping to organize and assist the local leagues. Son Pete is an active participant in the sport, and Paul is next in line as a budding puckster.

Life is serene but never dull at the Sajdak homestead. Hunting, fishing, snowmobiling and other outdoor activities occupy Bob and his family throughout the year. On occasion, Bob also employs his talent as a handy-man in do-it-yourself home projects such as heating and plumbing.

A friendly and easy-going professor, dedicated to high standards in teaching and student performance, Professor Sajdak motivates his students to exceptional effort and achievement. For these talents and qualities, we salute him as a respected member of the Tech forestry faculty and as a valued friend.
FOREWORD

Growth is what Forestry is all about and this year the "Forester" has again grown to meet the needs of an expanding department and club. With the abundance of new students in the forestry curriculum this year, most of them walked away with many new found friends and good memories. For some, these hard-won moments were filed away along with the many others from previous years.

As each year passes we grow a little—be it spiritually, physically or emotionally. Without these memories and experiences, we have not grown. If we are to push forward toward new goals, growth is essential. So under this philosophy,—we the staff of the "Forester" have attempted to capture and record the memorable moments of the 127 forestry students in this, the 1973 edition.

David Engleman—Editor

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FACULTY

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Forestry Aide

CYNTHIA HARTMANN
Secretary, Forestry Dept.

SYLVIA MINER
Secretary
School of Forestry & Wood Products

HAROLD JOHNSON, Custodian

RAY TUOMI, Custodian
The 1972-73 academic year has been one of continued growth in the Department of Forestry. Enrollment in forestry at the beginning of the fall quarter, 1972, stood at 539 students, an increase of 18 per cent over the fall, 1971, enrollment of 456 students.

In response to this continuing increase in enrollment, five new members have been added to the Forestry Department staff this year. Three of these are new members of the teaching faculty, one is a technician and one an additional secretary.

Dr. Fred A. Stormer joined the faculty in the fall quarter. He is responsible for teaching courses in wildlife ecology and wildlife management. Dr. Stormer holds a B.S. in forestry, and the M.S. degree in wildlife management, from Pennsylvania State University. In 1972 he received the Ph.D. degree from Purdue University, with major in wildlife ecology. Dr. Stormer has served three years with the U. S. Army, is married and has two children.

Dr. Douglas J. Frederick also joined the faculty in the fall of 1972. Forest ecology, pathology and silviculture are Dr. Frederick's primary fields of interest. He holds the A.A.S. degree in forestry from Paul Smith's College, the B.S.F. degree in forest management and the M.S. degree in silviculture and wildlife from West Virginia University, and in 1972 received the Ph.D. degree in ecology and silviculture from the University of Idaho. He is married and has one child.

Both Dr. Stormer and Dr. Frederick hold the rank of Assistant Professor.

Charles E. H. Hein became a member of the teaching faculty, as a Lecturer, in the spring of 1973. Mr. Hein received his B.S. degree in forestry in 1953, and the M.S. degree in forestry in 1973, both from Michigan Tech. From the time of his graduation until he entered graduate studies, Mr. Hein was employed by Calumet and Hecla, Inc., and its successor, Universal Oil Products, at Calumet. From 1953 to 1970, he held the positions of district forester and administrative forester. In 1970 he was advanced to the post of real estate supervisor, a position he held until 1972. He is a Registered Forester, a Registered Surveyor and a Registered Real Estate Appraiser. Mr. Hein's teaching responsibilities are in the fields of surveying, forest utilization, general forestry and natural resource law. He is married and has two children.

Dennis A. Baril joined the Department staff in January, 1973, holding the position of forestry aide. Mr. Baril is a 1972 graduate of the associate degree program in forestry technology at Michigan Tech. He was employed as a forest technician by the Mead Corporation, Trout Lake, from June to December, 1972. Mr. Baril is married and has one child.

The Department was fortunate in obtaining a second secretary last fall. She is Cynthia Hartmann, a 1969 graduate of Redford Union High School. Mrs. Hartmann also studied at Eastern Michigan University for one year, and was employed as a secretary by Eastern Michigan University and Detroit Edison, Inc. in 1970 and 1971.

Two members of the family received promotions during the past year. Dr. C. Richard Crowther was promoted to Professor, and Dr. Roswell K. Miller to Associate Professor.

Important events during the year included an appearance at Michigan Tech by Dr. Harold E. Wahlgren, project leader, Forest Products Laboratory, Madison, Wisconsin. Dr. Wahlgren, whose visit was sponsored by the Society of Wood Science and Technology and M.T.U., spoke to forestry students and faculty on February 27 and 28. His well-attended talks were enthusiastically received by all, as he stressed the need for environmental protection in forest harvesting, environmental influences in the properties of wood, and the need for greater efficiency in utilizing the wood of trees which are harvested.

The second annual Forestry Symposium, sponsored by Alpha Eta Chapter of Xi Sigma Pi, also was highly successful. The symposium, held at the Memorial Union on April 13, 1973, explored the topic, "Environmental Impact Statements."

—Dr. C. R. Crowther
FORESTRY
GRADUATE
PROGRAM

ERIC A. BOURDO III
M.S. in Forest Soils
Thesis: Effects of soil and landform characteristics on northern hardwood stand volume growth potential.

THOMAS E. LOWELL
M.S. in Silviculture

JOSEPH S. MINIER
M.S. in Forest Entomology
Thesis: Biological control of the pine bark aphid in a forest nursery.

CHARLES E. H. HEIN
M.S. in Forest Management

DAVID L. OUILLETTE
M.S. in Recreational Ecology
Thesis: Human impact on nature trails.

WILLIAM E. NICHOLS
M.S. in Paper and Pulp Science

NOT PICTURED:
LARRY M. JONES
EDWARD T. LINJALA
LARRY D. SANDERSON
CHARLES A. SCHEFFNER
LARRY S. STRECKER

JOEL G. PRATHER
M.S. in Wasteland Recreation Ecology.
Thesis: Vegetative stabilization of reclaimed copper stamp stands.
SENIORS

HAROLD E. ANDERSON
Lansing, Michigan
Wrestling

DAVID J. BROBERG
Athens, Michigan
Forestry Club, Conclave

RONALD J. CHURCH
Warren, Michigan
Chief Forester '71-'72
Camp Comm. Chairman

ANDREW F. COLE
Grand Rapids, Michigan
Forestry Club

E. JAMES CROMPTON
Erie, Pennsylvania
Xi Sigma Pi, I.M. Football

CALVIN J. DE BOER
Holland, Michigan
Xi Sigma Pi, Conclave '70-'72

DOUGLAS A. DAVIES
Niles, Michigan
I.M. Hockey
GENE E. DILLENBECK  
Gobles, Michigan  
Forestry Club  

ANTHONY J. DOMBROWSKI  
Detroit, Michigan  
Xi Sigma Pi, Forestry Club  

EDWARD B. DRIER  
Wakefield, Michigan  
Conclave '72, Xi Sigma Pi  

JOHN E. FORCE  
South Haven, Michigan  
Xi Sigma Pi  

GREGORY E. GATESY  
Grand Rapids, Michigan  
I.M. Hockey  

MARSHALL F. GILBERT  
Kingsford, Michigan  

![Image of a group playing frisbee](image-url)
DENNIS J. HANNON
Roseville, Michigan
Forestry Club, I.M. Basketball

MARGARET M. HARRIS
Rye, New York
S.A.F., Valt. Ski Patrol

STEPHEN H. HENNIG
Lake Zurich, Illinois

FRANK B. ISAACS
Anderson, Indiana
I.M. Hockey, Softball, Basketball

PATRICK L. KAMARAINEN
Baraga, Michigan
I.M. Basketball, Bowling

STEVEN P. KARIAINEN
South Range, Michigan
RICHARD W. KAYSER
Daggett, Michigan
Xi Sigma Pi Pres., Lutheran Collegiates

JOHN W. LARSON II
Sheboygan, Wisconsin
S.A.F.

STEPHEN P. LAWRENCE
Hickory Corners, Michigan

STEVEN G. MCCORMICK
Southgate, Michigan
Annual Staff '71, U.P. Flying Club

ALAN J. MALAVOLTI
Rockford, Illinois
I.M. Paddleball, Volleyball

THOMAS J. MARTTILA
Houghton, Michigan

MICHAEL A. MILANOWSKI
Grand Rapids, Michigan
Forestry Club, I.M. Hockey
THOMAS J. O'CONNOR  
Brookfield, Illinois  
Xi Sigma Pi

MARSHALL J. PECORE  
Neopit, Wisconsin  
I.M. Basketball

LYNN E. PETERSON  
Oshkosh, Wisconsin  
I.M. Bowling

ERIC B. SCHOOLEY  
L'Anse, Michigan

RICK D. SHEPLEY  
Negaunee, Michigan  
I.M. Horseshoes, Basketball

WILLIAM C. STEWART  
Westfield, New Jersey  
Conclave Chairman and Capt.  
U.P. Forestry Club
RICHARD L. STRINGER
Oscoda, Michigan

VERONICA R. SULLIVAN
Lansing, Michigan

DANIEL P. TORMOHLEN III
Sault Ste. Marie, Michigan
Xi Sigma Pi

KENNETH A. VANEK
Cicero, Illinois
I.M. Volleyball, Softball

GARY L. WILLIS
Monroe, Ohio
Xi Sigma Pi, Martial Arts Club

GREGORY A. WISSNER
Bach, Wisconsin
Student Council, I.M. Football

SENIORS NOT PICTURED
JAMES A. CHOSA
MICHAEL J. DORSEY
GERALD L. LEE
DALE A. LEITZKE
GARY A. LINDQUIST
WILLIAM E. NICHOLS
DAVID L. OUILLETTE
JOEL G. PRATHER
RODNEY R. RITTER
JOHN P. ST. JULIANA
LAWRENCE D. SANDERSON
JAMES D. SWEETING
MARK A. WARREN
ROBERT J. WASIELEWSKI
JAMES H. WEBER
KIRK R. WESTFALL
The Ford Forestry Center is one of the three departments comprising the School of Forestry and Wood Products of Michigan Technological University.

The University's two-year associate degree program in Forest Technology is conducted at the Center, combining favorable location with excellent facilities for instruction and training in forestry, forest products and related areas. In this program, practical classroom knowledge is combined with field experience and laboratory skills. Field training utilizes an ideal environment amid vast holdings of public and private forests.

Conditions for research here are ideal. The forests and soils are diversified, permitting studies of many forest conditions. While the area facilitates ample research it also serves as a demonstration area where long-term results of controlled forestry practices may be observed and where special projects may be conducted.

Since the Center also operates its own sawmills, complete control of experiments in this area is possible from conception of the study to the manufactured lumber. Analysis of data is facilitated through use of equipment at the University Computer Center.

With the Ford Industry Center's adjacent 4,110 acres of timberland and the extensive facilities offered, students are assured a well-versed and well rounded education.
REPORT FROM THE DEAN

Another year of progress in the School of Forestry and Wood Products has seen the undergraduate enrollment increase to 539—a gain of more than 20% over last year. Yet, in spite of the generally tight job market that has prevailed for the last several years for graduates in all college disciplines, a recent survey of Tech forestry graduates showed that of the 69 students who received their sheepskins in June, August and December, 1972, and in March, 1973, 49 were employed, were in graduate school, or were in the Armed Forces. We have not yet received information from the remaining 20.

Some much-needed equipment for instruction in the Wood Utilization and Forest Soils fields has been obtained through purchase and donations. Furthermore, new effort is being activated to improve Tech's offerings in these fields and in Forest Recreation. Options in Conservation and Forest Surveying have also been added to those already available to foresters.

Because of the still-growing general interest in the environment, and in the part forests play in improving it, some forestry courses of more general orientation have been renamed to portray their content better, in the expectation that more non-foresters will elect them. It is becoming as important for non-foresters to have exposure to the forestry field as it is for foresters to broaden their exposure in the humanities, social sciences, and other fields.

Another staff member has been added primarily to strengthen the field aspects of Tech forestry training. Mr. Charles Hein has joined the staff as a lecturer. He brings with him 20 years of experience in managing forest lands for a large land-owning corporation. In addition to his many talents, he is a registered forester, a registered land surveyor, and a licensed real estate appraiser. He should help Tech forestry maintain its distinctive ability to combine the theoretical with the practical.

In mid-May of this year, a visiting team from the Society of American Foresters conducted a two-day reaccreditation inspection of the Department of Forestry. While the results of this inspection will not be known until this fall, the Department has every reason to be optimistic.

Growth at the Ford Forestry Center is covered by Prof. James Johnson in another article. Suffice it for me to stay at this time that some interesting and important new developments will mature in the next fiscal year and will be reported on then.

The Institute of Wood Research has seen dramatic changes during the past year. It has a new, vigorous Advisory Board which met in January and March; and which will meet again in August. The new Board is taking a much more active part in guiding the Institute than any previous Board.

This year Elmendorf Research Institute of Palo Alto, California, donated a complete press system to Tech for use by IWR and by the academic Department of Forestry. The press will help both in their investigations of "reconstituted wood." Installation of the system, which is valued at over $75,000, will shortly be completed.

The IWR was also awarded a $61,000 grant by the Upper Great Lakes Regional Commission to develop a system for continuous production of structural particleboard. This system, for which a basic patent is pending, literally extrudes the board. Other lesser contracts, including one for the development of a molded pallet and another for weather-testing wooden ships' beams, are well under way. Finally, a patent for impregnating veneer with modified lignosulfonic acid is being processed.

Again, space permits me to cover only a few highlights of last year's activity in the School of Forestry and Wood Products. These few should convey to you Alumni, however, that your school remains a dynamic entity which is proud of its past, but looks toward an even brighter future.

—Eric
GENE'S
“TOP LOG IN THE DECK”

The Forestry Department at Michigan Tech is in the business of training tomorrow’s leaders in forestry and conservation. If we acknowledge that the foremost responsibility of any leader is to unleash the full power of the parent organization, we quickly learn the need for leadership as an essential in all our forestry graduates. How can we successfully go about to imbue our students with these qualities? And especially, how can this be accomplished among the greatly increasing numbers of students with whom we work each day? These are questions of vital importance to the faculty of forestry.

Leadership begins to benefit a person even before he starts on the job. As a student, it permits full enjoyment of a busy and orderly life at the University—in the classroom and in intramural activities as well. Then, when you become involved in job-seeking, leadership plays an important role in the interview procedure. Remember, progressive organizations seek the qualities of leadership in their employees, and a person conducting interviews often looks for this quality.

Taking responsibility is the first action required of every person given his first assignment on the first day of a new job. And this is the basic role of leadership—that of getting an assignment, taking command, and working to get the job done. Leadership has been examined with great care by behavioral science research teams. They have analyzed a host of situations and complex variables, but the greatest problem has been to learn about the person himself. How are people motivated?

People display a fascinating diversity and versatility when developing their roles in social and civic leadership. But basically, leadership is the art of influencing (motivating) other men and women. The basic requirement of leadership—all frills removed—is to develop a sense of urgency toward action. Get things moving! Start the work! Encourage others! Accomplish the mission! Get the job done!

The manner and style of the leader has lot to do after the action is underway. A successful leader's style emerges as a source of strength and enthusiasm to his subordinates—rekindling in each, the desire to do well. It is the leader's style that permits the job to be accomplished in a quiet and orderly manner. When we refer to a leader's style, we must acknowledge the importance of his ability to create personal impact. For, in the final analysis, leadership is the combined qualities of personality used to favorably influence the role and to stimulate the motivation of others.

But just how do we develop students who will be leaders? Perhaps the cardinal ingredient in leadership development is action. Becoming involved in realistic situations, setting goals and reaching high standards, overcoming apathy, boredom, status-quo. For the student, leadership can evolve by actively participating in the Glee Club, the fraternity or sorority, athletics and intramural sports, Forestry Club, work on the Michigan Tech Forester, R.O.T.C., debate activities, the Michigan Tech Band, Student Council, The Lode, Inter-fraternity Council, the Engineering Show. The list is legion. The important element in each is "personal involvement"—becoming active, in concert with others. There is no sure recipe; like most good elements in life, it takes work.

—Gene
THE FOREST SERVICE
TOTEM POLE PROJECT

Among the most striking artifacts visible to the traveler in Southeastern Alaska are the totem poles of the Haida and the Tlingit Indians. Elaborately carved from single trunks of red cedar, with stylized representations of fish, animals, and human beings and painted elaborately, they were unique examples of native art. They were erected for a variety of purposes; most often, as the coat of arms of a family; sometimes, to commemorate a particular event; or at times to ridicule an enemy or a neighbor. Totem pole carving flourished after the coming of the white man, who brought with him the iron tools with which to work the wood. Totemic art fell off after 1890, as the Indians adopted the white man's way of life.

With the establishment of the Tongass National Forest in the early 20th century, the Forest Service found itself charged with the care and management of these poles and other Indian relics. The American Antiquities Act was passed in 1905. It permitted the President, by proclamation, to set aside National Monuments. Two were set aside under this act: Sitka National Monument, established near Sitka, where Governor Brady had collected a group of totem poles, and Old Kasaan National Monument, at the site of an ancient Haida village. The Antiquities Act also charged the various Federal agencies with care of Indian antiquities on land under their jurisdictions.
Preservation of totem poles in the National Forest presented difficulties not experienced by the Forest Service in its jurisdiction over cliff dwellings in the Southwest. The weather is severe in southeastern Alaska, with continuous rain, frost, and snow in the winter. The poles had for the most part been carved before the turn of the century. Totem poles were carved and set up for much the same reason that we set up a Christmas tree, to celebrate a special occasion; and just as we throw out our Christmas tree after the twelfth night, so the Indians neglected their totems after the occasion ended, celebrated by a potlatch. As a result the poles were decayed, weatherbeaten, and badly deteriorated. Second, the poles were privately owned by the family or clan. Whereas in the southwest the government could do as it wished with the abandoned dwellings, in Alaska they had to get permission from the owner for any preservation work.

During the early years of the 20th century, the Forest Service and the National Park Service formulated several plans for the preservation and restoration of poles. These plans involved the bringing of the poles to a central location, where they could be cared for more easily than in their isolated sites. However, the plans were not put into effect, due to lack of funds. Although a number of bills for moving totems were brought before Congress, all died in committee.

The establishment of the Civilian Conservation Corps gave the Forest Service a golden opportunity to combine relief work with artistic restoration. Regional Forester B. Frank Heintzelman, an enthusiast about Indian culture, used CCC funds to hire Indians to restore old poles, and copy those too deteriorated to be restored. He reached a cooperative with the National Park Service to restore the poles in Sitka National Monument also. Linn Forrest, the regional architect, was put in charge, and the CCC totem pole project got under way.

During 1937 and 1938 a series of field examinations were made, photographing poles and community houses, evaluating their conditions, and developing plans to get title to the poles and move them to central locations. Agreements were reached with the families or clans, getting permission in the case of each pole for its restoration as a community project and
removal to a totem park. At times the titles were hard to trace but eventually titles to the best poles were acquired. Meantime, men were signed up for the work. Unlike camps in the "lower 48," there was no age limit to CCC workers in Alaska, and some of the CCC "boys" were men in their seventies. In 1938, work got underway.

Older Indians, who had learned the traditional skills, were hired as carvers. They knew the legends, incorporated in each pole. Younger men were hired as helpers and trained as carvers. Carving was carried out in open sheds so the workers would be out of the weather; in some cases the sheds were built near the native schools, so that when the work was finished the structure could be used as a play shed by the children. Wood crews towed or rafted totem poles from outlying areas to the carving site, and cut down red cedars for the carving of new poles.

In restoring old poles, rotted parts were cut out, and new poles pegged in. Missing parts were measured and recarved. No nails were used; wooden pegs were the rule. The tools used for carving were made by the Indians, who copied old ones in their collections; they were constructed from old auto springs or saws. When poles were too decayed to be restored, new copies were carved; the parts of the old would be measured by calipers, and an exact copy made. The Forest Products Laboratory in Madison, Wisconsin, developed a preservative, Permatox D, to weatherproof the poles. They were afterward painted. The Indians had made their own paint in the ancient past, using graphite for black, clam shells for white, lichen for yellow and copper for green. These were pounded up in mortars with a pestle. Salmon eggs wrapped in cedar bark were chewed, the saliva spit out and mixed with the coloring. Forrest had Indians prepare some paint in the ancestral way, but the quantity was too small for a large project, so he matched the color obtained with commercial dyes.

The Indian workers took pride in their work. The head carvers inspired in the young their own pride in craftsmanship, and both Indian and white communities strongly supported the project. As one carver put it:
"The story of our fathers' totems is nearly dead, but now once more is being brought to life. Once more our old family totems will proudly face the world with new war paint. The makers of the totems will not have died in vain. May the old poles help bring about prosperity to our people."

The totems were placed in landscaped totem parks, at Kalwok, Hydaburg, New Kasaan, Wrangell, Totem Bight, and Saxam. In all, 48 old poles were restored, and 54, beyond repair, duplicated. In addition, 19 poles at Sitka were duplicated or restored; two old community houses rebuilt and one new one constructed. The project ended in 1942, with the coming of World War II.

The work was a unique experiment. It is noteworthy that the Forest Service at that time, as an organization, was not professionally prepared to engage in creation and restoration of native art, but through exercise of common sense, judgment, and imagination did a creditable job. The best of the totems rotting in the woods were recovered, and almost to the last minute, the Indian legends were restored in the totem record. As was inevitable in a project of this size, the work was uneven in quality, but on the whole it was good and some work was excellent. Both as a relief project and as artistic work, the CCC totem pole project was a great success.

Dr. Lawrence Rakestraw
The separation and segregation of bark chips is the key to increased utilization of forest resources using total tree chipping to be utilized by the paper industry, a means of reducing the bark content of the raw material to a level which is acceptable to the industry must be found.

As we described in last year's MTU Forester, the results of several years of intensive research effort have shown that a process of steaming, compression debarking, and abrasion is a promising solution to the bark removal problem for several species. For the predominant Lake States species, particularly aspen, the test program is at a stage where pilot plant testing of the process under continuous operating conditions is the final stage of evaluating the feasibility of the BCSS process.

The objective of pilot testing of the BCSS system is to answer the question which cannot be answered in the laboratory with small scale batch testing. To accurately evaluate the performance of the BCSS system as it would function in a commercial operation, and to obtain data necessary for an economic analysis of the system, a study of the system under continuous operating conditions is essential.

The forest Engineering Laboratory is currently working on the preliminary design for a BCSS pilot plant which will be capable of processing 2-3 cords of chips per hour. This capacity is far below the projected economically feasible plant size, but it will provide the answers which are required before a full scale production facility can be considered.

As shown in the accompanying figure, which is a possible layout of the BCSS pilot plant, the major components of the pilot plant will be as follows:

a) Unbarked chips enter the plant through the pneumatic pipeline shown on the left side of the schematic. A chipper-screen unit will chip any material received at the pilot plant in round-wood form, and screen and rechip any material arriving in the form of chips.

b) A continuous steaming vessel (6) pretreats the input chip mass with live, low pressure steam.

c) The compression debarker (8) removes bark by adherence to the compression rolls while the partially cleaned chips pass straight through the rolls.

d) A screen separates the fines (reject) from the wood product.

e) An abrader (9) further fragments the residual bark particles in the compression debarker output.

f) The final screen removes the fragmented bark from the abrader output.

It is anticipated that the pilot plant will be located at a pulp mill. Thus, an adequate supply of raw material will be readily available, and the pulp mill will be accessible for mill scale pulping tests of the pilot plant output to determine its suitability for paper making.

Along with the preliminary work on the BCSS pilot plant, the Forest Engineering Lab is continuing its laboratory research program with particular emphasis on extending the present results to other species. In particular, cooperative studies with industry are being conducted to evaluate the effectiveness of the BCSS system on residues of western and southern species.

—James A. Mattson
Research Mechanical Engineer
ENVIRONMENTAL IMPACT STATEMENTS

Several professionals from throughout the Midwest spoke at the 1973 Forestry Symposium sponsored by the Alpha Eta Chapter of Xi Sigma Phi. The discussion this year was centered on the controversial issue of Environmental Impact Statements. Some of the various topics presented included the “History and Legal Aspect,” “The Need for Impact Statements,” “The Preparation of Statements,” “Problems at Federal and State Level,” and “Project Development Problems.”

Featured speakers were Charles Meyer of Ishpeming, representing the Sierra Club; Joseph Harn of Ironwood, supervisor of the Ottawa National Tract; Gene L. Kuhns, regional environmental analysis coordinator, U. S. Forest Service, Milwaukee, Wis.; Dr. Keith Larson, chief of environmental resources, Army Corps of Engineers, St. Paul, Minn.; Dr. C. T. Black, environmental coordinator, Office of Environmental Quality, D.N.R., State of Michigan, Lansing; and Ralph Magnuson, Cleveland Cliffs Iron Company, Negaunee. Dr. Roswell K. Miller of Michigan Tech opened the program by reviewing the background of the federal Environmental Policy Act of 1969 and resultant requirements for environmental impact statements.
"WOOD IS WONDERFUL"

What do we mean, “School of Forestry and Wood Products?” What is the ecological significance of Wood? How does Wood relate to the environment? These are some of the questions that might be posed by students and Alumni in relation to the inclusion of the term “Wood Products” in the title of the Forestry School at Michigan Tech.

With the popular emphasis on Ecology and the Environment, these terms are usually considered in the context of preserving the forest and protecting its “environment” from the makers of wood products, and not disturbing the forest “ecology.” The purpose of this article is to look critically at the meaning of these terms and show how the “human” aspect of a School of Forestry should embrace the study and research of that needed life support material called “wood.”

The term “forest” has come to involve a number of purposes and activities. Should not the forester have a working acquaintance with all of these and avoid over-emphasis on any one phase, even though it may be publicly and currently popular?

“Ecology” has become a popular, but vastly misunderstood, term. Properly, it should refer to the extremely complicated inter-relationship of organisms with each other and with the site.

What Foresters know, and the public does not, is that ecology is a naturally moving state, described by Foresters and professional ecologists, as “succession.” The ecology of the forest is a living, moving, developing association of trees with each other and other plants and animals and the “site.” The dying of trees and the sprouting of seedlings is the process that the Forester strives to control. In so doing, he aims to direct succession and improve the forest environment, with the ultimate aim of improving the human environment. This is Timber Management.

The common measuring sticks of the Forester are the “board foot” and the “cord.” These units represent volumes of material needed to improve man’s environment (particularly, shelter and communication). How well the Forester’s treatment of the forest serves its purpose, is an economic question which depends upon the quantity and quality of the board feet of the cords produced. With the word “quality,” here starts the realm of the Wood Technologist.

At the same time that the forest produces wood, it produces a spinoff of shade, quiet, and natural beauty, and a haven for birds to watch and game to hunt. All Foresters will recognize this as a simplification of “multiple use.”

A use of the forest that is not too often noted is its use as a place for people to live and make a living. Since Northern Michigan is mostly forest, this is a use that is of prime importance here.

So, jobs in the production of products of the growing forest is an important yield of management of the forest resource. Note here that “environmental” preservation and the static concept of “ecology” create few life-sustaining jobs, and it is unfortunate that the general public has not been able to appreciate this.

For most of us a place to live is a place to produce (earn a living). Thus the so-called “environmentalists” who are clamoring for preservation of our timber resources, are striking at people (people who need jobs and people who need products). The problem here is the lack of understanding of elemental economics. This is unfortunate because Economics might be regarded as “the human side of Ecology.” Or, Economics might be called the Ecology of human life-support (goods and services, measured by dollars). Thus, dollars may be equated to human life, and “Economics” is not a dirty word.

Michigan Tech’s Institute of Wood Research had its beginning in 1947 in a program to improve the economy of the timbered areas of Michigan through developing processes and products for new industries based on wood raw materials known to be growing in surplus in these areas. Through the years the IWR staff has led the way to expand industrial use of wood, and improvements in the processing of the timber harvest. Jobs have been created, and the drift of our citizens to the already crowded, metropolitan centers has been slowed. More significantly to the Forester, IWR has made the growing of timber more feasible economically in our State.

Thus, those Michigan Tech Foresters who came to the Forestry Profession through a concern for the Environment and a eagerness to apply Ecology, need not be concerned that “Wood Products” has become closely associated with your “School of Forestry.” When you accept MAN as an element in the ECOLOGY of Forest Regions and MAN’S need for the production of Forest Products as an important element in his ENVIRONMENT, you will not find it incongruous to see exhibits of wood products useful to MAN side by side with exhibits of birds and animals of the forests in the main hall of the Forestry-Institute of Wood Research Building.

WOOD IS WONDERFUL! It is also Ecologically and Environmentally (and Economically) “with it.”

Dr. Hereford Garland
THE NUTTY GIRLS
OF FORESTRY

Take that you beast
—Laura

Speak no evil, hear no evil, see no evil
—Pam, Verna, Carol

Hurry up I'm cold
—Liz, Karla, Ann, Barb, Debbie

Simple—Pat

Hey fellas, I'm lost. Can any of you help me home
—Sybil

Boy, is he doing that wrong
—Peg

You're right. It's dripping on the floor.
—Carol, Kathy Verna

To be fair, I'll try it one hande.
—Barb

I wonder who these belong to?

I dig it—Mary
An important part of the research program of the Ford Forestry Center, since the installation of the first cutting compartments in 1956, is the study of the northern hardwood forest. Research of this type requires well documented records, procedures and progress reports to insure continuity of effort. These long term studies are now beginning to bring forth the resulting effects of the treatment to which they have been subjected.

The recently published F.F.C. Research Note No. 9 titled, "Results of Fourteen Years of Small Woodlot Management," authored by James Johnson and Eric Bourdo, Jr. is an example of the detailed records that are necessary to provide the information and results of importance to the forest land manager or owner. This particular study and demonstration area was established in 1958 for the purpose of providing small woodlot owners with the incentive to initiate a management program in their woodlots. The woodlot yielded an average net hourly return of $2.76 per man-hour worked for the first annual harvest and $4.63 per man-hour during the second harvest over a fourteen year period. Through successive cuttings, the previously unmanaged woodlot, is developed into a thrifty highly valuable forest. Education through demonstration is an important part of the management efforts of the FFC research forest. At least a half-a-dozen, on the ground field days, for interested land owners was conducted during the fourteen years of annual harvests of this particular study. This provided the opportunity to present forest management results and concepts to many interested groups and individuals.

The large forest land-owner is another important entity that must be considered in our research effort. His prime interest, if he owns land for its timber production, is to maximize his growth and financial returns. Management tracts of one hundred acres or more have been established for the purpose of providing large landowners with the necessary silvicultural and economic knowledge, so that he will be better able to optimize the production of his land. Detail records of harvested volumes and values, logging costs, owning costs, as well as, volume and value growth yields from these studies will provide the land manager with many management alternatives. Two of these studies have been cut twice since management was begun. The second harvest yields tripled in value over the first harvest. Sufficient volumes have been retained, so that a harvest of 1500 to 2000 board foot of high quality sawlogs can be harvested every ten years. After two harvests a highly valuable productive stand remains and should provide high value forest products on a sustained yield basis.

With approximately 80 silvicultural and forest management studies in progress it is possible to touch on only a few. In addition to the hardwood studies, continued research is being conducted in direct seeding regeneration of red and jack pine as well as thinnings in even-aged stands.

Using mill scale study recovery data, value prediction methods are being developed for standing trees. These methods will be computerized for ease and rapidity of obtaining answers from marking estimates, as well as, for providing residual stand values from inventories. Value growth prediction is another important by-product that will be developed from our growing tree and log yield studies.

The entire staff extends a cordial welcome to all interested groups or individuals to view first hand the many projects, and activities being conducted at the Center. Your interest in the furtherance of education and research is most welcome.

—James Johnson
Activities of the Club
The Forestry Club has made a big first step this year toward a goal which has long been envisioned by Club members. It is that of being the best known and active organization on campus as it was in the early days of the Club’s existence. We are beginning to be recognized by the Student Council, Blue Key and other organizations as a highly competitive and active organization.

During this year we have made ourselves better known by activities at Homecoming, Winter Carnival and the engineering show, Tech Is . . . 73, along with competition in the Intramural Program. With continued effort along these lines the Club will continue to show that it is the best on campus.

This year the long put-off project of reroofing the Otter River Camp was initiated. A good turnout of members put in long hours on campus and at the camp to make Otter River last for quite a few years.

Club membership activity was substantial during the year, providing an interesting social and professional atmosphere.

—John Sunderland

The 1973 Michigan Tech "Forester"

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The 1973 Staff
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Thanks to:
CATHY RILEY—Front Cover
CAROL BUZZARD—Back Cover
THE LIFE OF A FOREST TECH

I didn't think he could throw it this far!

Put your right foot in—Put your right out—
Put your right foot in and shake it all about.

A word of advice, Fellas
—Don't

Put your right foot in—Put your right out—
Put your right foot in and shake it all about.

I should have followed his advice.

ALL PLAY AND NO WORK*

*Just kidding guys

The way that guy is hitting'
I might as well go home.

H'mmm—no notes, I must've slept thru that one.
SUMMER CAMP

Ten years from now, the memory of Forestry Summer Camp will probably have been long forgotten, unless someone mentions that old motto—c'est la vie.

It was unseasonably wet weather that year, probably due to the fact that everyone was praying for rain at 7:30 every morning. A day watching Miller's movies was better than having Norm Sloan send us out to do battle with the tag alder thicket and the Keweenaw mosquito, while he stayed on the bus.

Working conditions were not the best. So with Ross Miller tripping over surveying stakes and Mike Coffman moving unattended transits, it was understandable that our crew occasionally took a level reading on another crew's rodman. Haarala's farm became the most completely leveled and mapped piece of ground in the Upper Peninsula. The final field problem provided Copper Range with a free cruise that must have been an almost 100 percent sample.

We were told that log scaling was an art and not a science. And coming up with results remotely close to Vern's estimate was a statistical improbability. We scaled the trees behind the cemetery until we knew them on a first name basis. There was no way to draw a type map that would satisfy Norm. If it wasn't the choice of colors that proved your downfall, it was the width of the roads or the size of the type line dots.

Although there was nothing in the lesson plans about fudging in, there was a traverse or two that just seemed to close better in the calculation lab than in the field. And what can you say, but—C'est la vie.

—John Force

Got to watch out for those birds
Bill McConnel, Doug Davies, Bonnie Faith

Follow the leader
Laura Schooley, John Sunderland, Chuck Hein

Me a wood nymph?
—Pete Cattelino

384° 64' 7"—Got that?
Hammer, Calvin Kangas

My God, that's a tall one.
—Carol Buzzard
Looks like we're lost again.
—Mike Harnois, Ed Drier

What a place to run a line.
—Joe Lamacchia

Two logs!
—John Cloutier

What a crew!

Feels like a tree—Looks like a tree—Could it be?
—Dave Broberg

Now this here, Bonnie, is a L.O.G.
—John Larson, Hammer, Bonnie Faith, Carol Buzzard
BIG BROTHER DAY

After returning from Big Brother Day, there seemed to be an abundance of frost-bitten appendages, sore muscles, and deflated egos. These results are quite fitting due to the frigid weather, rigorous activity, and stiff competition between the new freshman and the "experienced" foresters. The days' activities began with the one-man bucking where a few people were able to develop their own "natural rhythm." But that did not seem to aid them in the match split where the scores ranged from four to sixty-three. The traditional franks and beans came and went without too many complaints of indigestion.

The afternoon was packed with fun-filled activities including log roll, two-man bucking, and the always stomach turning tobacco spit which separates the men from the boys and girls! No big Brother Day would be complete without the golden opportunity to give our president, John, a traditional yearly bath in the icy waters of Otter River. After that, everyone gathered their gear and new friendships to start the long ride back to civilization.

—Ann Goodman, Pat Grossman

Maybe if you put the log on top.
Next time let the girls get the firewood.

Delicious.

I'm going to make sawdust out of this log.

You aim with the tongue.

Roswell in a Bikini?

I wish these Levis weren't so tight.

There must be an easier way for twigs to iron their clothes.
HOMECOMING 1972

Homcoming 1972 was an eventful weekend for all. The Foresters gave a good showing this year, even though conclave was the same weekend, taking eleven of our more experienced people. The freshmen were out in the largest numbers and with the help and coaching of the upper classmen did a good job. The club competed in all class “B” events. The class “B” competition was strong this year with many groups joining in. The club managed to get the pyramid up for the first time the night before and then built it nearly flawlessly to take a third place in competition. In the relay races the club took first place and with some very good adlibbing took a second place in the skit. All in all we had a good time.

—Dan Grit
CONCLAVE 1972

The University of Minnesota hosted the 21st Midwestern Foresters Conclave on October 14, 1972 at Itasca State Park. It was a cold Saturday and light snow flurries fell during the first events of the morning. Michigan Tech's highlights of the day were Bill Stewart taking a first in match split, Cal DeBoer taking a first in dendrology, and Dave Broberg taking a third in tobacco spit. In the special event, which was a canoe race, our team of Stewart and Sunderland placed fourth. Overall we placed fifth out of eight, with the University of Minnesota winning first place. Saturday night was spent around a bonfire in front of a local tavern with the usual songfest and "ice cream." Next year Tech will be the one to beat at Missouri.

—Ken Ohlrogge
WINTER CARNIVAL 1973

Winter Carnival's "Frigid Fairy Tales" saw the Foresters again taking third place overall in class B competition. Even though much work was put into our snow statue, Behold the Imperial City, it was unable to win any points. Many fond memories, however, came out of its building. These include icing not only the statue but everyone else along with it, burying the plans, and speaking of memories, how could we forget the reputation brought to the Forestry Club by a few of its members running around on stage in pastel longjohns in our skits "Everything you always wanted to know about fairy tales but were afraid to ask?" Robin Hood and his merry band of gay men took second place for the Foresters in skits. In other special events Foresters took second in dogsledding, fourth in skiing, a tie for first in skating, a tie for second in snowshoeing and unfortunately no place in broomball.

—Tim Foss
I'm tired of looking at you guys.

EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT FAIRY TALES BUT WERE AFRAID TO ASK or WHAT DID ROBIN HOOD AND HIS MERRY MEN DO ON THEIR DAY OFF

Starring
Ron Robin Hood Church
George Tulips Teachman, Ken Merry Man Ohlrogge, Andy Merry Man Kovalchik, Cal Merry Man Deboer, Dave Merriest Man Gundy, Sybil Little Girl Kolon, Carol Snow Whiteless Buzzard, Black Sneezy Bart, Dan Little Pig Grit, Tim Little Pig Foss, Jim Big Pig Crompton, Dave The Persuader Engleman, Cathy Granny Riley, Dave The Narrator Schwandt.

Let's go to the cock-pit lounge!

Forsooth, let us frolic down Fairy Lane, to Snow White's house.

Hey, what about me?

Come on in Fellas.

What a choice, guess I'll try Granny's.

She's well worth it.
FROZEN FOOTBALL

The annual winter outing took place in January this year. A number of club members enjoyed a game of football, Houghton style. Wonder which team won?

Come on, fight you cowards!

Watch those hands.

I'm going where the action ain't.
Wonder what that is floating in there. Chefs Miller and Johnson.

Mamma never told you about booyaw, huh, Vern.

Are they going for seconds or the door?

*But where's the venison?

IT'S BOOYAW TIME AGAIN*

Do I dare try it?

Dr. Robert Brown was the guest speaker this year. He gave an interesting talk on his recent visit and study in Finland.

Prof. Hat-of-the-four-winds Brown.
INTRAMURAL SPORTS

Darn! I have to go to the bathroom.

Power play.

Sitting down again, eh Cave!

Oh - Oh!

Another strike for me.

He threw it too high.
FORESTERS IN VARSITY SPORTS


RIFLE RAFFLE

Ron, quit scaring them away!

Paula Morgan, drawing the tickets for us this year.

Our winner is ... Paula Morgan?!

No new records were set this year, but the club still earned an outstanding $700 profit. And Gene lost again.
THE OLD — THE NEW

Many of you will remember, when in 1956 a decision was made to tear the old cedar shingles off the Otter River Camp and replace them with new asphalt shingles. Some of the roof deck also had to be replaced because of rot. Well, it has been 17 years and now a new roof is needed. The Civil Engineers examined the roof and found the rafters were structurally unsound and they were amazed that the roof was still standing.

The decision was made to replace the entire roof over the main room and to internally brace the roof on the two side wings. Planning began this winter and in May, 1973 the new roof went up. The roof, tongue and grooved 2x8's, is supported on three 4½' x 11½' laminated beams running the length of the cabin. The beams were constructed of 26 foot long Douglas fir boards in the I.W.R. workshop and transported to the Otter River site. It took a few strong backs to get them in place.

Over the 2x8 deck, two inches of styrofoam was placed (donated by Dow Chemical Company) and then the foam was covered with shiplap and the roofing shingles. The other two wings will also be insulated with styrofoam and the ceilings dropped to make it easier to heat the cabin. Winter use is becoming very popular and the need to be able to heat the rooms easier is important.

The roof is not completed yet, but work will continue this summer and next fall as funds become available. Dr. Bourdo donated all the roof decking from the Ford Forestry Center, but all other costs, including the 26 foot beams, has been borne by the Forestry Club and has about depleted the Camp Fund for the time being.

—Dr. Norman Sloan
THE CABIN GETS A NEW ROOF

The many strong backs.

Putting the center beam in place.

Nothing like a nice neat edge.

This roof makes a great slide.

Up comes the shiplap

A styrofoam roof, now I've heard everything.
Go over and tickle him.
—Mike Ojanen, Marty Jurgensen, Laura, Betsy, Eric, John Sunderland.

I estimate that one at fifty.
—Tim Foss, Cave, Keith Richmond.

Let's roll!
—John, Mike Strain, Cave.

SPRING FIELD DAY

This year Spring Field Day was scheduled later than usual and because of this, the mosquitoes and black flies were abundant. Besides seeing who could kill the most mosquitoes with one slap, other events included the two-man bucking, the one-man bucking in which "Marty" showed us what years of experience has gained him, also match split and log roll were on the agenda.

Lunch time finally greeted us in the form of beans and hot dogs. It was surprising indeed to find out that there wasn't any of that 'ol Booyaw left over. After that good lunch the appetizing event of tobacco spitting was scheduled, in which finally after many years of abstention, Drew Depudyt decided to give it a try. Poor Drew—went home that day looking kinda green for some reason. Afterwards the egg toss got underway where some found out that they weren't as agile as they thought. To clean off the egg—burling was presented. The river was cold but the burling was good. Keith Richmond beat all comers in this category. At the end of the day the final points were tallied showing the Sophomores in first place with the Juniors not far behind. Even tho the turn out was lower than expected . . . the people who managed to make it had a great time.

—Carol Buzzard

Another Tim Foss shot!
—David Engleman, Drew De Pudyt.
It's stuck!
—Tom Schultes, Keith.

Somebody's going to get wet.
—Mike, Tom.

Don't worry Doug, there's been worse.
—Doug Frederick.

You have to watch out for those falling eggs.
—Dave, Cam Betts.

This is no time to do a jig.
—Drew, Ed Drier.

I better spit before I bust.
—Doug, Drew and John.
VISITING SPEAKERS

One of the purposes of the Forestry Club is to promote professional forestry. This year the club again had several guest speakers give interesting talks at our social meetings.

Mr. David Balbough of the Michigan D.N.R. and manager of the Porcupine Mountain Wilderness State Park, talked about the diversified areas that have been set aside in it. Isle Royale was the subject at a talk given by park superintendent, Mr. Hugh Beattie. He talked about developed sites within the park and the number of people visiting Isle Royale each year. Mr. Matt Laitala, chairman of the Michigan Natural Resources Commission, presented his views of the management of natural resources, especially the management of forests for the future. The last of the year's speakers was Mr. Walt Papenfus of the American Plywood Association, whose talk centered around forestry practices and the plywood industry.

—Verna Trippel
This year the Engineering Show was revived and renamed "Tech Is..." It did not include the engineering departments but encompassed the University as a whole. Along with the many other departments, the foresters managed to make a showing. Although the Forestry Club has over a hundred members only a very small handful bothered to participate.

The Forestry Club demonstrated every hour a few conclave events which included the 2-man bucking and 1-man bucking. A display showing the rest of the usual conclave events was pictured in the Union Ballroom.

The Forest Techs, the Alberta branch of the Forestry Club, had a very comprehensive display showing the different aspects of a forester's job. They had several exhibits showing aerial photography equipment, tree grading techniques, general fire fighting equipment, an automatic slide presentation of Alberta and as a drawing point—they gave away pine and spruce seedlings. The Forest Techs outdid themselves indeed as was the general consensus. Perhaps the Forestry Club members should sit up and take notice...

—Carol Buzzard
The Alpha Eta Chapter of Xi Sigma Pi has seen another outstanding year in the realm of accomplishments. In November, twenty-one juniors and seniors—which included two female candidates—were initiated into the fraternity. The beginning of the new year, 1973, brought monumental changes to the leadership of Alpha Eta Chapter with the election of its first female officer, Elizabeth McFarland. Liz was elected Forester, a position vacated by the graduating Dick Kayser. Also at this time, Ken Ohlrogge was elected to the position of Associate Forester.

In April, the annual forestry symposium, planned and set up by the fraternity, centered on Environmental Impact Statements. Like last year's, the symposium was a success, drawing individuals from throughout the bi-state area. With the influx of women into the fraternity, Alpha Eta has voted that the wording in its Ritual of Initiation be reviewed and made applicable to all members who join. At the present time these changes are waiting National's approval. In May, the year was capped by the initiation of seven juniors and seniors, followed by a banquet attended by fraternity members, initiates, and members of the visiting SAF accreditation team.

—Jim Crompton
Alumni Directory

1940
EVERT BENTLEY, 20 Floyd Circle, Silver Bay, MN 55614. Land Engr Reserve Mining Co.
WILLIAM BORSUM, 1822 N. Appleton St., Appleton, WI 54911. Kimberly-Clark Corp.
CARL W. DANIELSON JR., 123 East Fifth Ave., Houghton, MI 49931. Ass’t Prof Mich Tech Inst. of Wood Research.
JAMES J. SMITH, 21 Kimberly Dr., Brockport, NY 14420.
HELMUTH M. STEINHILF, Box 222, Palmdale, CA 93551. Prof. Mich Tech. For. Dept.

1941
JOHN H. ATKIN, 1901 Tamarisk Dr., East Lansing, MI 48823. Land Appraiser Mich. D.N.R.
ROBERT G. BAHRMAN, Route 3 Box 232, Petoskey, MI 49770. Consult. Forester, Self Employed.

1942
RUDOLPH BRATETICH, 3556 Wedge St., Calumet, MI 49913. Mich. Dept. of Soc. Serv.
ALLEN H. HEINIKEN, 1101 Waukasi, Negomine, MI 48866. Mining Engr., Cleveland-Cliffs Inc. Co.
RALPH G. SWANSON, 1125 15th St. South, Wisconsin Rapids, WI 54494. Supt., Central Wis. Area Consolidated Papers, Inc.
GLEN L. WEINBERG, 511 Brompton Place, Chicago, IL 60657. Asst to Pres., Royal Continental Box Co.

1943
FRANK E. BLAKE, 49 Sparrow, Campervilleville, IL 60110. Sales Agent, Self Employed.
ALLEN H. HOELLER, 6370 Fort Road Ste 2, Birch Run, MI 48415. Staff Forester, Mich. D.N.R.
GEORGE J. JUETEN, 1040 St. Rock, Roseville, MI 48066.
FREDERICK J. ROGERS, 871 Wisconsin River Ave., Port Edwards, WI 54469. Forester, Self Employed.

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1946
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1947
ADRIAN J. DEVENEND, Route 6, Hayward, WI 54843. Univ. of Wis., Brooks Bldg.

1948
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HARRY N. WAGNER, Box 146, Romeo, MI 48063. Design Engr., Reed City Tool & Die Corp.

1949
EDWIN F. ANDERSON, 2511 Lincoln St., Eugene, OR 97405. Area Sales Mgr., Monsanto Co.
EDWARD J. FABER, 131 N. Jefferson, Verona, WI 53593. Dir. of Real Estate, Wis. D.N.R.
DONALD J. FISHER, Box 192, Bergland, MI 49900.
EDWIN J. FOSS, 851 Charles Ave., Alma, MI 48801.
REV. CLAIR G. JENNINGS, 5025 Harriet Ave., S., Minneapolis, MN 55419. Minister, King of Glory Luth. Ch.
HOWARD J. MARELA, Box 89, South Range, MI 49963. Teacher, Cripple Creek Voc. Sch.
ARTHUR T. MAKI, 1440 Eucled Ave., Klamath Falls, OR 97601. Woods Mgr., Weyerhaeuser Co.
WILLIAM A. TODD, 424 E. Arch St., Marquette, MI 49855. Pres., Longyear Co.

1950
WILLIAM E. BALMER, 3070 Sexton Woods Dr., Chalmette, GA 30005. For. U.S.P.S.
LYLE W. BARDEN, 813 Colorado, Alpena, MI 49707. Staff For., Abtibhi Corp.
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EDMUND J. ECKERT, Indian River, MI 49749.
HAROLD E. HOLME, 4710 N. 74th St., Milwaukee, WI 53218. Inside Sales, U.S. Plywood-Champion Inc.
RUSSELL A. JOHNSON, 1640 Spring St., Medford, OR 97501. Timer Mgr., Bur. of Land Mgmt.
JOHN M. KEENER, Box 450, Madison, WI 53701. Wis. D.N.R.
CLYDE A. KNAPP, 11655 N. Wauwatosa RD W, Mequon, WI 53029. Land Adjust. Staff Of, U.S.P.S.
MILTON J. KREIG, 4102 Greenbrook Lane, Plymouth, MI 48170. Contact Rep., Gen Motors Corp. Fisher Body Div.
ROGER D. MCCONNELL, 533 1/2 River St., Snonogas, MI 49835. First Natl Bank.
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PAUL T. RECCHI, 106 Pine St., Hancock, MI 49930. Businessman.
RAYMOND C. ST.ONGE, Box 156, 96 Birch Shores, Trout Lake, MI 49792. Cons. Of, Mich. D.N.R.
ARTHUR R. ZEMSKE, 8300 Noid Ave., Minneapolis, MN 55428.
1954

JAY W. BASTIAN, 10925 Countryside Dr., Grand Ledge, MI 48837. Mich. Dept. of State Hwys.
RICHARD E. BEARDSTRUP, Box 237, Harbor Springs, MI 49740. Atwell-Hicks, Inc.
WALTER R. CLARK, 318 Nth St., St. Maries, ID 83861. Channel Lumber Co.
GUNTHER E. FRANKENSTEIN, Hillcrest Dr., Lebanon, NH 03766. Research Civil Engr., U. S. Army.
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