Michigan Tech Forester 1981

MICHIGAN TECHNOLOGICAL UNIVERSITY
This year started off slow as we had a small number of people turn out to work on this years yearbook. Having a couple of people who worked on the Forester last year and this year really helped. The Forester's Advisor, Dr. C. Richard Crowther, provided invaluable services by keeping the Forester moving when things seemed to get a little slow.

This year's staff were excellent in providing their time and services, as were everyone else who helped make this yearbook a complete success.

Michael A. Zeller
Editor
Department
The 1981 FORESTER SALUTES

Dr. Lawrence Rakestraw

Our Forester Salute this year goes to an "adopted" member of the Forestry Department faculty, Dr. Lawrence Rakestraw. Although a member of the Social Sciences Department, Dr. Rakestraw has taught courses in the Forestry Department for more than ten years.

This came about because Dr. Rakestraw is a member of a "rare breed" — he is a forest historian. His unusual combination of disciplines results from an early and continuing interest in forestry, an education in history, and the final melding of the two in his later career.

Larry was born in Carson, Washington, and grew up in Washougal, Washington. After graduating from high school, he worked in the local woolen mill until he had saved enough money for college. He attended Clark College at Vancouver, Washington, then a junior college. He then enrolled at Washington State College and later received a scholarship at the University of Wisconsin. He received his B.A. degree in 1938 and the M.A. degree in 1939, both in history.

While at Clark, Larry met Mary Watson, and the two were married in 1938. They have a son, James C., and a daughter, Nora (Mrs. Frank Foster).

In 1941, Larry accepted a fellowship at Washington State College. The next summer he took a job with the U.S. Forest Service, and was assigned to a fire suppression crew in the Gifford Pinchot (then the Columbia) National Forest. He later became a forest guard, and Mary took care of the telephone switchboard while he was in the field. They spent the next winter at a station of the Aircraft Warning Service on Red Mountain, part of the coast defense system. The following winter they were located at another AWS station on Kiona Mountain, another peak in the Cascades. Larry continued with the Forest Service during the war years and learned scaling and cruising.

At the end of World War II, Larry resumed his education at the University of Washington, where he continued graduate studies and did some teaching. He spent his summers with the Forest Service.

His professorial career began at Northern Montana College in 1949, while he continued work toward his doctorate in history at the University of Washington. His Ph.D. degree was granted in 1955, with his dissertation on A History of Forest Conservation in the Pacific Northwest, later published by Arno Press.
Dr. Rakestraw came to Michigan Tech in 1957, and has engaged in teaching courses in history since that time. He also has continued his research, and is author of many articles in the field of conservation history, especially connected with Isle Royale National Park. In recent years he was engaged to write the history of the Forest Service in Alaska, which was published by the Alaska State Historical Commission. He also is a member of the board of editors of Forest History magazine.

His interest in forestry drew Dr. Rakestraw into contact with Michigan Tech’s Forestry Department, and in the late 1960’s he found it possible to begin teaching a course in Forest History, in this department. He later added two more forestry courses, Forest History Seminar and The Federal Lands. Thus, his ties with this department and its faculty have grown stronger through the years.

When not engaged in teaching or research, Larry enjoys a number of recreational activities, including hiking, swimming, reading detective and science fiction, and writing light verse — not necessarily in that order. He also is in demand as a speaker, his discourses on a variety of topics being spiced with humorous anecdotes and enterjections of a subtle dry wit.

His affiliations include membership in Phi Alpha Theta and Xi Sigma Pi.

The field of forest history has been significantly enriched by Dr. Rakestraw’s interest, study and experience in both forestry and history. His association with the Forestry Department, its faculty and students, has formed a broadening element that constitutes a dimension found in few if any other schools of forestry in the nation. We enjoy this relationship and cherish the benefits it has brought to all foresters who have had the good fortune to meet and learn from this distinguished professor of history and forestry.
The retirement of Dr. Gene Hesterberg, Head of the Forestry Department since 1962, constituted the major event of the past year. Dr. Hesterberg's retirement was effective January 1, 1981. Highlights of his accomplishments as a faculty member and Department Head appear elsewhere in this issue. We wish him a long and happy retirement.

As an economy measure adopted by the University administration, no replacement for Dr. Hesterberg has been made. His many functions as Department Head and teacher have been taken over by Dean Eric A. Bourdo and members of the forestry faculty.

In recognition of his teaching efforts and contributions to forestry education, Dr. Hesterberg received Michigan Tech's Distinguished Teacher Award for 1980. This honor was given during the Fall Commencement ceremonies in November.

Dr. Bourdo received national recognition for his accomplishments this year. He was recipient of a 75th Anniversary Award presented by the U.S. Forest Service for outstanding contributions to the causes of forestry and conservation. This award was made in connection with the 75th anniversary of the Forest Service, which was established in 1905.

At the end of the 1979-80 school year, Dr. Allan Drew resigned from the forestry faculty and accepted a teaching position in the School of Forestry and Environmental Science, State University of New York, Syracuse. We wish him well in his new position.

I. D. Wijayaratne was added to the faculty of the Land Surveying section of the departmental faculty, last fall. He recently received a master's degree in geodesy from Ohio State University, and holds the rank of Instructor.

Dr. Martin Jurgensen has been on leave of absence this year, having received a senior postdoctoral fellowship awarded by the New Zealand National Advisory Council. He engaged in soils research in New Zealand.

Replacing Dr. Jurgensen during the fall and winter quarters was Dr. Michael Larsen, who is a staff member of the Center for Forest Mycology Research, Forest Products Laboratory, U.S. Forest Service, Madison, Wisconsin.

Dr. John Kotar, who joined the faculty in 1979, has been promoted to the rank of Assistant Professor, and Glenn Mroz, formerly a Faculty Assistant, was advanced to Instructor. David Andersen, Faculty Assistant, accepted a position as coordinator of a new program in logging and sawmill safety, and now is stationed at the Ford Forestry Center. Irvin Ziemer, Faculty Assistant, was advanced to the rank of Visiting Instructor.

Assistant Professor James Armstrong has received the Ph.D. degree from SUNY, Syracuse. His field is environmental resource engineering.
Among faculty activities this year, Dr. Margaret Herman presented several talks at meetings and on television, concerning re-introduction of the pine marten into the Upper Peninsula of Michigan. She also gave three lectures at Humboldt State University, Eureka, California, and spoke at the Michigan Academy of Science, Arts and Letters in March. Her article on pine marten appeared in *Restoration and Management Notes*, in March. She also spoke on studies involving the trumpeter swan in Washington and the spruce grouse in Montana.

Dr. C. Richard Crowther

Dr. Roswell Miller is a contributing author of the Forest Fire chapter which will appear in the second edition of the Forestry Handbook, now in preparation. He also serves as a manuscript reviewer for articles submitted for publication in the Journal of Forestry.

Dr. Richard Crowther presented a talk at the National Conference on Park and Grounds Management, in Orlando, Florida, last November. He was named chairman of the Forestry Section, Michigan Academy of Science, Arts and Letters, for 1981-82, and also reviews manuscripts for the *Journal of Forestry*. 
News from Michigan Tech —
Hesterberg Retires

Dr. Gene A. Hesterberg, Head of the Forestry Department at Michigan Tech, retired from his position on the Michigan Tech faculty Dec. 31, 1980.

Dr. Hesterberg joined the faculty of the Forestry Department in 1948. He was appointed head of the department in 1962, following the retirement of Prof. U. J. Noblet.

Under the guidance of Dr. Hesterberg, the department regained accreditation by the SAF, and obtained a new building in 1967. The departmental faculty grew from six to twenty members, a graduate program was initiated, research activities were greatly expanded, and student enrollment more than tripled.

Two new curricula were added in recent years. The department now offers majors in forestry, wood and fiber utilization, and land surveying.

Honors earned by Dr. Hesterberg are a citation by the Michigan Academy of Science, Arts and Letters and outstanding contributions to conservation research and teaching, and Clair M. Donovan Award presented by Michigan Tech for outstanding service to the University and community, and the University’s Outstanding Teacher Award for 1980.


(l-r) Gene Hesterberg, Judy Hesterberg, Mary Frantti, Chuck Hein
He has been active in many professional and community affairs, including the Society of American Foresters, the Timber Producers Association, the Michigan Board of Registration for Foresters, and the Lake Linden Board of Education. He established and continues to enlarge a school forest for the Lake Linden school system.

Dr. Hesterberg also owns a sawmill and Silver Forests, a managed timberland operation aggregating several thousand acres. In addition, he for many years engaged in forestry consulting and surveying for numerous industrial and private land owners.

Throughout his career at Michigan Tech, his classroom and laboratory instruction spanned a wide range of subjects, primarily in the fields of forest pathology, wildlife management, dendrology, and urban forestry.
Dr. Eric A. Bourdo, Jr.
Dean, School of Forestry
B.S. Michigan Tech. Univ.
M.S. Univ. of Michigan
Ph.D. Univ. of Michigan

Gerald M. Allan
Instructor
B.S. Michigan Tech. Univ.
M.S. Michigan Tech. Univ.

Dr. Gene A. Hesterberg
Head, Dept. of Forestry
B.S. Purdue Univ.
M.S. Univ. of Michigan
Ph.D. Univ. of Michigan

David E. Andersen
Faculty Assistant
B.S. Michigan Tech. Univ.
M.S. Michigan Tech. Univ.

Dr. James P. Armstrong
Assistant Professor
B.S. Pennsylvania State Univ.
M.S. State Univ. of New York, Syracuse
Ph.D. State Univ. of New York, Syracuse
Dr. Lindo J. Bartelli
Adjunct Professor
B.S. Michigan State Univ.
M.S. Michigan State Univ.
Ph.D. Univ. of Illinois

Dennis A. Baril
Forestry Aide
A.A.S. Michigan Tech. Univ.

Johann Bruhn
Instructor
B.S. Utah State Univ.
M.S. Univ. of Michigan

Charles E. Hein
Assistant Professor
B.S. Michigan Tech. Univ.
M.S. Michigan Tech. Univ.

Dr. C. Richard Crowther
Professor
B.S. Iowa State Univ.
M.S. Iowa State Univ.
Ph.D. Univ. of Michigan
Dr. Margaret F. Herman
Instructor
B.A. Colorado College
M.S. Washington State Univ.
Ph.D. Univ. of Montana

Dr. Michael J. Larsen
Adjunct Associate Professor
B.S. State Univ. of N.Y., Syracuse
M.S. State Univ. of N.Y., Syracuse
Ph.D. State Univ. of N.Y., Syracuse

Dr. John Kotar
Faculty Assistant
B.S. Univ. of Wisconsin
M.S. Univ. of Minnesota
Ph.D. Univ. of Washington

Dr. Yuan-Zong Lai
Associate Professor
B.S. National Taiwan Univ.
M.S. Univ. of Washington
Ph.D. Univ. of Washington

James Meteer
Professor
B. S. University of Michigan
M. F. University of Michigan
Glenn D. Mroz  
Teaching Assistant  
B.S. Michigan Tech. Univ.  
M.S. Michigan Tech. Univ.

Robert J. Ross  
Faculty Assistant  
B.S. Michigan Tech. Univ.

Dr. Roswell K. Miller  
Associate Professor  
B.S. Syracuse Univ.  
M.S. Syracuse Univ.  
Ph.D. Univ. of Michigan

Robert L. Sajdak  
Assistant Professor  
B.S. Michigan Tech. Univ.  
M.S. Univ. of Minnesota
Irwin R. Ziemer  
Faculty Assistant  
B.S. Michigan Tech. Univ.

Deborah L. Brulla  
Typist

Verna J. Berner  
Executive Secretary  
Dean's Office

Mary Frantti  
Administrative Aide

Carol B. Isola  
Typist
Kevan C. Buck  
Forest Management

John R. Cassidy  
Forest Management

David C. Carroll  
Forest Management

Ronald F. Church  
Forest Management

Bradley S. Cramer  
Land Surveying

Carol A. DeBacker  
Wood and Fiber Utilization

Jeffrey M. DeMatteis  
Forest Management

Eugene F. Desposito  
Forest Management

Robert A. Ebeling  
Forest Management
Patricia L. Ellis  
Soils

Balazs S. Elody  
Wildlife Ecology

Jane A. Frambach  
Conservation

Kenneth A. Fritsch  
Wildlife Ecology

Timothy P. Gahl  
Forest Management

Marc L. Gillette  
Conservation

Robert J. Gilreath  
Forest Management

Craig L. Gooding  
Recreation Resource Management

Kathy S. Hayton  
Urban Forestry
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Masters Graduates not Pictured

James E. Ferris

Cynthia L. Robertson

Curtis R. Stebic

Masters Graduates
Dean's Reception for Graduates
Forestry Technicians

Row 1 Steve Hendricks, Chuck Burr, Dave Breedlove, Bridget Bourdeau, Andrew McNichols
Row 2 Eric Forsberg, Stan Padyjasek, Sue Bennett, Art Strom, Scott Edwards

Row 1 Mark Fanghn, John Retzky, Mary Graham, Vianna Myles, Bantam McCutcheon, Tom Becia
Row 2 Jim Engel, Keith Farrell, Joe Schroeder, Todd Herbert, Chuck Franks, Steve Augen, Mary Feenstra
Row 3 Paul Pastemak, Bob McFaden, Jim Brouwer, Bob Lokker, Randy Knisely, Barry Ritter, Donald Skidmore, Jim Turnquist
Dean's Award

Ralf Grisard and Craig Gooding were recipients of the Dean's Award for 1981. Both Ralf and Craig majored in Forestry.

Ralf, who graduated in November, 1980, was one of the principal organizers and first president of the Michigan Tech student chapter of the Society of American Foresters. He was active in many other student affairs and organizations, and played a leading role in last year's student efforts to prevent a threatened move to convert the Forestry Conference Room to uses which would have made it unavailable as a student study area. His grade point average was 3.83.

Craig was an active member of Xi Sigma Pi, honorary forestry society, and served as coordinator of that organization's coffee and doughnut sales in the Forestry building during the past year. He also tutored students having academic difficulties and participated in student government. Craig graduated in May, 1981, with a grade point average of 3.50.

The Forester congratulates these men on their outstanding records in scholarship, leadership and citizenship.
Tech Forester Drummond Wins Scholarship

William C. Drummond, forestry junior, was recently named the winner of the first place, $1,000 prize in the sixth annual Northeastern Loggers' Association Scholarship contest for four-year forestry schools.

The contest is open to juniors in 21 four-year forestry programs and 18 two-year forestry schools in the 25 states of the "Northern Region" as designated by the U.S. Forest Service. The Northeastern Loggers' Association is comprised of members from all facets of the forest industry.

Drummond is a native of Detroit who loves to travel. He and his wife, Adria, a native of Holland, have traveled extensively in Europe, Africa, and the Mid-east. Since transferring credits from Wayne State and Northern Michigan Universities to begin his forestry studies at Michigan Tech as a sophomore, Bill has earned a 3.72 grade point average. His current option is Forest Management.

The scholarship award was based upon scholastic and work experience, and upon the quality of an illustrated essay on this year's topic of "Innovations That Will Extend the Forest Resource."

This is the fourth year in a row that Michigan Tech has had a winner in this scholarship contest. Associate Professor, Dr. Roswell Miller, who teaches Forest Engineering and Timber Harvesting, has coaxed his students into entering the contest and has coordinated the selection of the two entrants from the Forestry Department each year. Three firsts and one second place scholarships totaling $3,500 have been awarded our students.
End of An Era

It was a weekend that will long be remembered by hundreds of alumni, students, faculty, and friends of Michigan Tech's Forestry Department. It was the End of An Era — an event marking the eventful past of a young, developing school of forestry as it grew to its present nationally recognized stature and prominence, and of the four men who played key roles in the department’s beginnings and later development.

The four men whose careers were dedicated to the advancement of forestry at Michigan Tech, and whose departure signaled the End of An Era, were Professors Emeritus U. J. (Bert) Noblet, Vernon W. Johnson, H. M. (Hammer) Steinhilb, and Dr. Gene A. Hesterberg.

This memorable event took place on Friday and Saturday, May 9 and 10, 1980. It began with a “beer and brats” picnic held at the Forestry Club’s Otter River Camp on Friday evening. More than 200 alumni, students, faculty, and friends converged on the camp for an evening of good food, good spirits, and fellowship. Live music and dancing (lumberjack style) culminated the night’s revelry. Arrangements were made by the Forestry Club and the Wildlife Society, whose members also prepared and served the supper.

The following day’s activities began at 10 a.m. with a number of forestry field events, which were carried on near the Forestry Building. Included were sawing, chopping, pulpstick tossing, log rolling, and tobacco spitting. Participants included alumni, friends, faculty, and students. These events were set up and supervised by the Forestry Club. A pasty lunch, served in the Forestry Building, was arranged and served by the Soils Club. Members of the Wildlife Society also helped in guiding visitors through the Forestry Building before and after the lunch period.

A banquet held at the Memorial Union, beginning with a social hour, climaxed the weekend. More than 300 persons were in attendance to enjoy the get-together, an excellent dinner, and the following program:

David M. (Mac) Frimodig, ’50, recently retired after a long career with the Michigan Department of Natural Resources, was master of ceremonies. He

Nothing to this sawing wood!
A chance for old friends to meet

called on several alumni to review their recollections of past associations with the honored guest. Speakers included Judd Bentley, a classmate of Prof. Steinhilb and member of the first forestry graduating class in 1940; John Atkin, '41; Glen Weinberg, '42; Joe Calabro, '51; Douglas Scheuneman, '65; Bernard Carr, '66; and Ralph Duftef, '66. Reminiscences also were told by Professor Emeritus Kiril Spiroff, longtime member of the geology faculty. Jeff Noble, president of the Forestry Club, spoke in behalf of the student body.

Each of the honored faculty received awards and gifts, which included plaques of cherry wood, on which were mounted hand-lettered parchments reviewing their careers. The Forestry Club presented each with a large picture depicting a forest scene. A cake, representing a log deck, was made by Betty Wegiel.

The End of An Era observance was conceived by Charles Eshbach, University photographer, a former forestry student and graduate of the Forestry Tech program. Prof. Bob Sajdak and Charlie were co-chairmen of the event.

Professor Emeritus Noblet is the founder of forestry education at Michigan Tech and served as Head of the Forestry Department from its inception in 1936 until his retirement in 1962. Professor Emeritus Johnson joined the faculty in 1939 and served until his retirement in 1977. Professor Emeritus Steinhilb, a member of the first forestry graduating class in 1940, joined the faculty in 1945 and retired in December, 1979. A long-time faculty advisor of the MTU Forestry Club, he is the only person ever made a life member of the Forestry Club.

Dr. Hesterberg became a faculty member in 1948, and succeeded Professor Noblet as department head in 1962. He continued in this capacity until his retirement in December, 1980.

All of these men received Michigan Tech's Distinguished Teacher Award, an honor granted annually to one outstanding member of the MTU faculty. Together they accounted for most of the achievements gained by the Forestry Department during the 45-year span from its humble beginnings to the present time.
As everyone is aware, the ills of the automobile industry, as well as inflation in general, have had an especially severe impact on the economy of Michigan. The inevitable result has been painful belt tightening among all state supported institutions. The state's universities have not been spared; and the situation at Michigan Tech was exacerbated by an increase in enrollment in spite of an early summer cut-off on acceptance of prospective new students.

Neither the Forestry Department nor the Ford Forestry Center has escaped severe budget cuts. The Center particularly has sought greater outside support through contracts and grants. Reflecting back on past financial crises which Michigan has weathered, however, provides assurance that this one too shall pass; and it is heartening to contemplate a brighter future while accepting the difficulties of the present.

The Peat Resource estimation in Michigan project is progressing well. Interruption of work in late 1980 while waiting for 1980-81 funds set the time-table back a bit, but work is again being pursued. A direct out-growth is a proposal by the City of Gladstone to study the feasibility of retrofitting its 6 megawatt power plant for direct combustion of a portion of the estimated 10 quads of peat energy which lie near the city. In two more years the whole state will have been surveyed, if federal budget cuts do not contravene, and we shall be able to report the peat-energy reserves with an expected 15 percent confidence level.

The CROFS (Cooperative Research on Forest Soils) organization has authorized study of forest sites in relation to growth response. The vast accumulation of Ford Forestry Center data relating soil type to C.F.I. (Continuous Forest Inventory) information will be the base for this study. Completion of this work should enable us to stipulate the forest growth potential of forest soils in the same way crop growth potential has been expressed for agricultural soils.

The Governor's Forestry Conference was held at Michigan Tech in October, 1980. By any measure it was a very successful conference. In his 1981 State-of-the-State message, Governor Milliken directed that the recommendations of the conference be implemented; and his statements concerning the place of forestry in diversifying Michigan's economy were heartening to those who have long worked to establish the importance of forestry and the forest industry in rural Michigan.

Field demonstrations during the Conference accented mechanization in harvesting. A highly successful commercial harvest of a half mile of roadside timber south of Painesdale has resulted in implementation by the Michigan Department of Transportation of commercial harvest on highway rights-of-way in both east and west portions of the Upper Peninsula. This action follows the recommendation proceeding from Michigan Tech's classification of roadside timber in the Upper Peninsula.

At the end of 1980, Dr. Gene Hesterberg retired as head of the Forestry Department. His retirement leaves a vacuum, since it will be hard to replace his 33 years of experience, more than 20 years of it as department head.

On December 31, 1981, I plan to terminate 35 years association with forestry at Michigan Tech. The future thus will lie in the hands of a younger generation — a generation in whom I have every confidence will elevate forestry at Tech to a level of special excellence is has been progressing toward and will in the future surely reach.
Features
The Fuels From Biomass Program: Research at Michigan Tech

If you try to find Robert Sajdak around when he is not teaching, you may not have an easy time doing so. Since June 1, 1978, he and some of his co-workers have been busy in a research project known to many as the Fuels From Biomass Program.

With Bob Sajdak calling the shots as the project manager, he has the help of his co-investigators. From June 1, 1978 - March 1, 1979 the help has consisted of: Yuan-Zong Lai, Martin F. Jurgensen, Helmuth M. Steinhilb, and Donald L. Schwandt.

With the retirement of a few of the professors, Glen Mroz, new to the faculty staff at MTU, joined in.

The forest resources in the Upper Peninsula of Michigan provide researchers with a unique opportunity in their involvement with the Fuels From Biomass Program.

The most common of forest types is the northern hardwood type; the main components of which are maple. Over half of this forest type is classified as poletimber, with 5"-11" diameters and is under 40 years of age. Many of these hardwoods are in poor condition and are in need of some silvicultural treatment.

The object of this research program is to determine the feasibility of converting existing pole-sized stands into biomass/energy plantations.

The research program is organized into six major parts which include; plantation establishment and evaluation, growth potential of black locust, (Robinia pseudoacacia L.) nitrogen-fixation studies, biomass of natural stands, characterization of biomass, and energy input/output.

In their research study, three forested sites, representing high, medium, and low maple productivity levels, were selected and treatment plots were established on each site. Treatment plots were fertilized with various combinations of nitrogen, potassium, and sodium. Foliage from selected fertilized and control plots was collected in the early fall and preliminary results indicate appreciable uptake of the added fertilizers.
The study areas were commercially clearcut in the early fall. The purpose of the clearcutting or harvest operation is to develop sprout stands which will be managed as energy plantations.

Information from this study provided an estimation of harvestable dry ton equivalent biomass on each site. The low site productivity approaches 1 dry ton equivalent per year while the high site productivity approaches 2 dry ton equivalent per year. The harvesting study indicates that in converting even the poorest northern hardwood stands, sufficient biomass quantities may be present which would make a significant contribution to the costs of plantation establishment. The study also indicates the need for additional work to determine productivity and development of young maple stands as a comparison to more intensively managed biomass plantations.
Biomass sampling of young sprout and seedling stands have been started, the purpose being to provide information on the development and productivity of the young natural maple stands. This information is needed to determine the optimum rotation age of northern hardwood biomass plantations. Such information is also needed to determine management strategies if biomass fuel is to be obtained as a secondary product of northern hardwood stands. This study involves the determination of aboveground biomass of stump roots of different ages, the distribution of the biomass components of...
Cleaning up after a clearcut

stump sprouts as well as the specific gravity and heat of combustion of these components. Seasonal variation of the moisture content in the sprouts is also recorded.

Special mention should be made of the support given to Bob Sajdak and company by: the Michigan Department of Natural Resources, the U.S. Forest Service, Champion International Corporation, and the Mead Corporation.
Michigan Tech was the scene of a conference titled "More Jobs Through Forestry," called by Michigan Governor William Milliken, Sept. 25 and 26, 1980. Also in attendance were Minnesota's governor, Albert Quie, and Wisconsin Governor Lee Dreyfuss.

Many speakers, representing industry, government, education, research and other groups interested in forests and forestry, addressed the conference sessions.

Greater investment in promoting forest productivity and utilization was recommended. These proposals included promoting better forest regeneration, more intensive hardwood management, increased research at Michigan's forestry schools, an increase in Department of Natural Resources public assistance programs, and establishment of a new state office of forestry.

Other proposals were for implementation of a forest improvement district bill. Since passed by the Michigan Legislature, establishment of a study group to check state and federal regulations involving industrial expansion, revision of the Commercial Forest Act, a task force to examine worker compensation laws, and better definition of the roles of people working in service programs with private landowners.

The conference was called a learning experience for those in government. "You've laid down a challenge for us," commented William F. McLaughlin, director of the Michigan Commerce Department.

Conference participants also toured several Copper Country logging sites and watched demonstrations of logging equipment.
President Stein points out the importance of forestry to Governor Milliken.

Three governors — Dreyfuss of Wisconsin, Quie of Minnesota, and Milliken of Michigan — converse in a forest setting.
TOPWOOD HARVESTING — 
WASTE NOT, WANT NOT!

Nels S. Christopherson
Research Mechanical Engineer
Forest Service — USDA
North Central Forest Experiment Station
Forestry Sciences Laboratory
Houghton, Michigan

The energy crisis that emerged in the 1970’s, and continues, has forced the United States to consider alternatives to fossil fuels. One renewable source of energy that lies wholly within the borders of the U.S. is wood. Fortunately, the U.S. has always had an oversupply of wood. Unfortunately, this has led to some very wasteful practices. Even though using all available wood would not solve the U.S. energy problems, every little bit counts. Further, the waste of wood is becoming less and less tolerable with an environmentally minded public.

Forest Service scientists have determined that after commercial sawtimber harvesting in a northern hardwood stand, between 40 and 50 percent of a tree’s weight above the stump is left in the forest as residue. For example, the average topwood residue weight from a 21-inch dbh sugar maple tree is about 2,000 pounds. If this single top were recovered for energy, it would be equivalent to one 42-gallon barrel of oil. Viewed on a national scale, it becomes apparent that an enormous resource is being wasted.

In the eastern United States, it is estimated that 50 million dry tons of residue in the form of tops and limbs remain after harvesting each year.

At present the logging industry has only two alternatives to recover this topwood. The simplest is to just skid the tops out intact from stump side where they are typically left. Due to the large bulky nature of the tops, this is an inefficient use of skidders and also causes considerable damage to the remaining trees — it is especially severe if recovery is done during the spring and summer months when bark is loose. The handling and reduction of tops to a size acceptable for chipping is also a problem since some limbs are too large to be crushed or folded back by chipper crushing rolls.

Another possible method of recovery is by manual chainsawing to delimb the tops and then bunching for subsequent skidding. This practice is unacceptable due to the prohibitive cost and the extreme safety hazards present when working around large tops and limbs.

Realizing the need for a mechanized solution to the topwood recovery problem, personnel from the U.S. Forest Service North Central Forest Experiment Station have conducted preliminary research studies to determine the viability and cost effectiveness of such an approach. This work has taken place at the Forestry Sciences Lab located on the campus of Michigan Technological University. The research has consisted of the design, fabrication, and testing of two experimental mechanical topwood harvesters with results being reported. An improved version is currently being built with testing planned for next summer.
The basic design concept incorporated in the earlier prototypes was a highly maneuverable shear/grapple device mounted on a knuckle boom which was attached to a rubber-tired, articulated carrier vehicle. Using "joystick" type control levers, the operator could position the cutter head on a limb, hold it securely with the grapple, and actuate the shearing mechanism for delimming. While still being held, the severed limb would then be placed appropriately next to the butt of the top to facilitate skidding. With all large limbs severed and positioned, a grapple skidder would follow and gather the compacted top and limbs and skid them to a central landing for chipping. This concept, which proved feasible enough to warrant further research, pointed out several shortcomings that will be corrected in the prototype under construction.

This prototype will feature a heavier, more powerful, and more stable tracked carrier vehicle along with a combination knuckle boom with telescopic tip to which the cutter head is attached. The cutter head/grapple will employ an auger-type cutting device rather than a shear as in past prototypes. An inverted clam bunk grapple will be rear mounted on the same carrier vehicle to also permit skidding of the compacted tops and limbs. These principal design features are expected to make the concept of mechanical topwood harvesting attractive both from technical and economical viewpoints.

The new experimental topwood harvester will undergo preliminary field testing in mixed hardwood stands to insure technical adequacy of the device. It will later be shipped to the Tennessee Valley Authority for 2 years of extensive testing and demonstration in the recovery of tops and limbs for energy wood. This extended period of testing will allow actual production figures to be obtained for various site conditions.

The mandate to eliminate the needless waste of wood fiber after commercial saw log harvesting operations is clear. As such, Forest Service scientists are dedicated to the concept of residue recovery and contend that the availability of a device such as the topwood harvester described will help encourage both equipment manufacturers and the logging industry to include topwood harvesting in their future operations. Further research will help identify other approaches to topwood recovery.
Ford Forestry Center

Few people are fully aware of the locations and acreages of the forested land owned by MTU and administered by the Ford Forestry Center. Although many individuals realize that the community of Alberta is located within some 3,520 acres of University land, few have knowledge of five other University owned parcels (totalling 1,013 acres) located within five Western Upper Peninsula counties.

The Randall Forest: Section 4, T48N-R29W

On December 3, 1953, Clarence B. and Emily P. Randall, of Winnetka, Illinois, gave to the Michigan College of Mining and Technology a 233 acre parcel of forested land situated on the western shore of Log Lake in Marquette County. Most of the land area of the tract is occupied by old-growth northern hardwoods: yellow birch, sugar maple, red maple and hemlock, in order of importance. Hemlock is virtually absent from the northern part of the tract, largely due to the occurrence of fires during the pine logging period.

The Randall Forest lies in the plateau highlands of western Marquette County. Minimum elevation is 1,702 feet above sea level at the surface of Log Lake. The land itself is hilly, with a maximum elevation slightly in excess of 1,800 feet. Rock outcrops and boulders are common.

An attractive feature of the Randall Forest is its frontage on Log Lake. The 200 acre lake is surrounded by rocky outcrops and has several islands at its north end. There is no development of its shoreline at the present time.

Although a large portion of the tract remains to date in an undisturbed state, a 70 acre portion of the property is being used to develop techniques for yellow birch regeneration. In 1967, three levels of selective cutting, with and without subsequent mechanical scarification, were conducted in the previously uncut study area in an attempt to regenerate yellow birch. This first attempt failed due to the aggressive establishment of beaked hazel and sugar and red maple and because of the general infertility of the soil.

In 1976, however, a survey was made of the habitat which favored old-growth yellow birch occurring within the study area. This work included characterization of groundflora and seedlings and saplings. This was followed by the installation of a system of 50 foot wide clearcut strips. The development of yellow birch regeneration and other associated vegetation has been monitored annually since 1977. The next step is to initiate fertilization trails.
The Dow Wilderness Tract: Sections 13 & 14, T58N-R30W
In 1973, the Dow Wilderness Tract was donated to MTU through the benevolence of the Herbert H. Dow Foundation. The tract is approximately 300 acres in size and is located in the north-central part of Keweenaw County. The Montreal River, flowing easterly, approximately bisects the level to gently rolling property. The large size of tree species including maple, elm, white spruce, white pine, balsam fir, yellow birch, white birch and northern white cedar, attest to the lack of logging disturbance in many areas of the tract. South of the Montreal River and east of the Lac LaBelle Road one is impressed with the size of some of the larger trees — sugar maple and elm 30 inches, yellow birch up to 36 inches and white birch in the 24 inch size class. Some of the larger remaining white pine, white spruce and cedar on the Keweenaw Peninsula remain undisturbed among the hardwoods. One particular white pine measured almost 48 inches in diameter.

The tract has a variety of plant associations in both the timbered overstory as well as in the herbaceous understory. The presence of the Montreal River and its many associated beaver ponds offer an excellent opportunity to observe a continuum of vegetative communities on a moisture gradient. Where aspect and soil changes delineate communities, ecotones are more abrupt and communities are more discrete.

The Dow Wilderness tract, from the standpoint of its physiognomy, i.e., the topography, elevation and geologic substrate, is representative of the Keweenaw Peninsula. This fact, in conjunction with the assurance that the area will remain undisturbed, makes possible the collection of baseline data pertaining to the plant and animal life there. From the baseline data, we obtain a standard (control) by which changes in the land around it can be compared.

A first step in understanding the functioning of a community is an inventory of its participants (Robinson, 19751). Most data collected from within the Dow Wilderness Tract to date have been within this inventory framework. Trees, lichens, mammals, birds, reptiles and amphibians have been qualitatively and quantitatively sampled for the basic purpose of determining species presence and abundance. In addition, work has been begun on identifying and quantifying environmental factors such as water chemistry (of the Montreal River) and soils. Slope and aspect has also been measured for the 34 permanent 1/5 acre study plots.

Section 2, T49N-R34W
This 320 (half-section) parcel is located approximately 2 miles northwest of Alberta. This property was acquired from the Michigan Department of Natural Resources during the late 1950’s in order to increase the diversity of forest types available for research on University lands. Located near the northeastern corner of the Baraga Plains, the soils of the parcel are derived from waterworked sand deposited on a post-glacial lake bench. The area supports a transition forest that changes from predominately jack pine, white birch and aspen on the west to low quality northern hardwood on the east.

Several provenance studies have been established, including range-wide and Upper Peninsula-wide plantations of white spruce, white pine, and a six seed source plantation of Japanese larch. Currently, study plans are being developed for the establishment of intensive culture plantations. The primary objective of such studies would be to determine economic and biologic implication of various soil management treatments required to grow specific fiber crops.

The Prickett Dam Tract: Section 9, T50N-R35W
The name of this tract should be the “Prickett Dam Road Tract” since Prickett Dam is several miles from this 120 acre parcel. Located in Houghton County approximately 2 miles south of Michigan Highway 38, the area was acquired in the 1940’s. The forest is second and third growth. The cutting and fire history of the forest plus variability of soil drainage has resulted in a mixed stand of aspen, spruce, birch, swamp conifers and northern hardwoods.

Initially the tract was utilized by the Forestry Department for student field trips. However, due to its distance from campus, use of the property decreased. A study of aspen regeneration in what has been called “Triploid” genetic stock was initiated in 1950. This study also involved the assessment of the impact of heavy deer browsing on the regeneration.

The Mass Tract: Section 23, T50N-R38W
The 40 acre Mass Tract was acquired in the early 1960’s by exchange with the Forest Service of a former CCC Camp, a site which at one time served as the Forestry Department’s summer camp.

The Mass Tract, located in Ontonagon County near the Firesteel River, managed as a farm woodlot. Currently, four kinds of farm woodlot cuttings have been installed on the property.
The Widmair House

On a cold snowy day...

In the summer of 1979, Michigan Tech bought a house and four lots for the purpose of joining the main campus with the lands occupied by the Forestry Department and the Student Development Complex. This house, named after its previous owner, was offered to the Forestry Department for use as the headquarters of the land surveying curriculum. Being in need of more office space, the department accepted the offer and began plans to move people down to the house. During Christmas break of 1979, after some remodeling, Dr. Roswell Miller, instructors Gerald Allen and I. D. Wijayeratne, and several forestry graduate students moved into the facility. The remodeling consisted of modernizing the kitchen and bathroom facilities, improving the lighting and heating systems, and changing the plush, flowered bedrooms into plush, flowered offices; just the right atmosphere for land surveyors. Future plans call for further remodeling and expansion of the house along with the construction of a campus substation for the U.P. Power Company on one of the lots. The addition of this building to the Forestry Department is a great plus, not only to Michigan Tech forestry, but most importantly, to the expansion of student educational opportunities at Michigan Tech.

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Activities
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Innovative Integration of Forest Management Practices and Forest Products Technology

The Sponsors

This symposium on "Innovative Integration of Forest Management Practices and Forest Products Technology" is one of an annual series of programs sponsored by The Alpha Eta Chapter of Xi Sigma Pi, national forestry honor society, at Michigan Technological University. Its membership is comprised of students and faculty of the Forestry curriculum at the University.

These symposia are designed to elicit discussion on current and controversial issues among the general public, forestry students, faculty and practicing foresters alike.

Xi Sigma Pi welcomes you to this meeting of professional persons with common concerns.

The 1980 Resources Planning Act Assessment has projected that future demands for forest products will outstrip supplies at present levels of reforestation and management. Demand for wood products and pulpwood alone are projected to more than double in the next 50 years. The major strategies for increasing wood supplies to offset future demands involve utilization research, intensive culture, and improved forest protection and overall management techniques. These strategies may significantly alter the nature of our forest resource. We are in an era of rapid transition. We must insure a meaningful and innovative future for our forest industries.
Summer Camp

The GOOD "OLD" DAYS
The "New Generation"
Another Year For The
Forestry Club

The Forestry Club had a very successful year in 1980-81. There was good overall participation by the members, and plenty of activities to keep us busy.

The officers for the year were — Dave Carroll, Chief Forester; Dan Malueg, Assistant Chief Forester; Bill Hubbard, Secretary; Heidi Pfosch, Treasurer; Jeff DeMatteis, Camp Committee Chairman; and Dr. Roswell Miller as the Club’s faculty advisor.

During fall term, the Club had a wide variety of activities to keep us from being too studious. Two pulp cuts helped us prepare for the expenses of Winter Carnival, Booyaw and the Spring Bowling Bash. Then there was Fall Camp Day. Due to poor weather conditions, the woodshed wasn’t filled. Not to worry though, the freezing weather didn’t keep the Chief Forester from his traditional swim in the Otter River.

The Copper Harbor Octoberfest gave us a chance to take-on the local community in cross-cut sawing. The lack of a saw kerf caused some slow times and a lot of upset competitors. Hopefully we have that problem under control for next year.

There was also a Conclave between Main Campus and Alberta during the fall term. We did not send a team to Missouri due to the poor economic times. The overall winner was the Main Campus. This was a good time for everyone and resulted in the loss of one keg of “Miller High Life”.

Bob Slater knows...
Winter term found the Club joining with Xi Sigma Pi, the Soils Club, and the Wildlife Society to form the MTU Foresters. We improved to second place overall in Class C. First place was missed by only 1.5 points. Our statue took third place overall, Tom Potter took first in the “New Beard Contest”, Mike Zeller took first in the “New Mustache and Goatee Contest”, and Tom Potter and Mark Jamieson combined to take second place in the snowshoe relay. It was a lot of fun, but also lots of work. Thanks to those who helped out.

Checking out the “Redwoods”

Spring term finds us with little snow and prospects look good for a third pulp cut. Hopefully we will also be able to plant 4,000 red pine to help reforest some Quincy Mining Company land in Ripley. The Booyaw has Dr. John Kotar to speak on his mountain climbing experiences in the Andes. This should prove to be a successful evening. The annual spring bowling party will find the students hard pressed to beat the faculty, but we’ll give it a try.

That about sums up the past and future events for 1980-81. I have enjoyed the year and wish the Club good times for the coming year.
The Otter River Camp was the scene of numerous activities in the past year. Along with the normal weekend group of Foresters there were some special events held at the cabin.

The Beer and Brats Night last spring brought a lot of people out to camp, and provided an opportunity for students, former students, faculty and their friends to spend some time together, meet other people and talk to old friends. Thanks should be given to all who helped make it a success.

Fall Camp Day was a day of good intentions and determination, with determination getting most of the work done. Due to the determination of the few who turned out, both bridges were put back in working order. Good intentions, however, resulted in some damage to a certain Chief Forester's truck. Well at least the tree didn't go to waste. It was later burned in the newly polished fireplace and provided an excellent fire.

In October the Foresters from Alberta and Houghton campus held a conclave at the camp. The turnout was excellent, and the competition was good natured. Each team won some key events and all in attendance had a good time.

Aside from these special events, the cabin is a place for friends to go and get away from school and enjoy the pleasures that the forest has to offer.
The Alpha Eta Chapter of Xi Sigma Pi, a national forestry honor society, is now in its twelfth year at Michigan Tech. The objectives of this society are: to maintain a high standard of scholarship in forest resources management education, to work for the enforcement of the forest management profession, and to promote a fraternal spirit among those engaged in activities related to forest resources.

Membership in the society is determined by high academic achievement. But along with this comes a keen interest in the profession of forestry, the happenings within the forestry department, and the happenings within the community. This is well illustrated by some of this year's activities such as symposium, clean-up of the historical Copper Harbor Cemetery, and the ever popular coffee and doughnut sale.

The annual symposium was once again a big success. Titled "Innovative Integration of Forest Management Practices and Forest Products Technology", it addressed some of the strategies in management and utilization needed to meet the increasing demand for wood and wood products. Funding came from the pulp cuts, tree planting, coffee and doughnut sales, and a grant from Student Council.

Initiations followed by a banquet dinner were held in both the spring and fall terms, bringing in a total of 53 new members. It was another good year for Xi Sigma Pi, and with a larger membership and increased participation, it should be an even better next year.

Forester: Patrick O'Brien
Associate Forester: Randy Hayman
Fiscal Agent: Tom Potter
Ranger: George Shabel
Faculty Advisor: Johann Bruhn
Michigan Tech Student Chapter
Society of American Foresters

Major emphasis was given to the problem of forestry graduate placement in professional employment, by the MTU student chapter of the Society of American Foresters. The effort got under way during the fall quarter when an open meeting featured presentations by Douglas Rappley, MTU placement director; Steve Vanek, assistant placement director; Dr. Eric Bourdo, Dean of Forestry and Wood Products, and William Veeser, vice president of Upper Peninsula Power Company.

Three speakers representing the Michigan Department of Natural Resources were sponsored by the chapter, during the winter quarter. They were Matt Laitala, chairman of the Michigan Natural Resources Commission; Howard Tanner, director of the DNR, and Bob Hied, pest management specialist for the DNR.

Many of the chapter members also attended meetings of the Wisconsin-Michigan Section, SAF, and the Upper Peninsula Chapter, SAF.

Officers for 1980-81 were Ken Higle, chairman; Joe Langkawel, vice chairman; Dave Sampson, secretary-treasurer, and Gene Desposito, program coordinator.
Forest Products Research Society

1980-81 Officers
Chairman - Carol DeBacker
Vice Chairman - William Lange
Secretary-Treasurer - Monica Wojdak
Membership Chairman - Lorenza Mueller

The Forest Products Research Society, MTU Student Chapter is an organization for any student interested in the forest products industry. Student chapter members are official members of this professional society and all dues are paid to the society based in Madison, WI. Student chapter members raise money, usually through pulp cuts, participate in carnival activities, and sponsor guest speakers. Student members also travel to section meetings in the fall of each year. These meetings are excellent exposure to people in the industry. All student members receive the society's journal "Forest Products Journal" and receive discounts on other technical publications and meeting registration fees.
The Michigan Tech Wildlife Society is a student chapter of the National Wildlife Society. Major functions of the club are to inform students of wildlife techniques and studies in the wildlife field. This is made possible through various lectures by faculty members or outside guest lecturers, held on the second Tuesday of every month.

Michigan Tech Wildlife Society members also carry out various club activities. In the fall of the school year the society holds an annual "Run for Wildlife," and in the spring there is the "Wildlife Smorgasboard" which is a feast of wild game donated to the club from area hunters. Other activities are the wildlife conclave and a new bird banding operation to start in the fall of 1981.

The student chapter of the internationally known Wildlife Society hosted their first "Run for Wildlife" this past fall. In an attempt to raise funds for wildlife related projects within and around the community, the Wildlife Society held a footrace on what turned out to be a miserably wet autumn morning. Despite the onslaught of howling winds from the north off the Portage Canal, and the blundering snows, those dedicated runners trekked on for one cause or another.

Society members, along with dozens of local merchants sponsoring with prizes, managed to pull it off. The fall of '81 will see the second annual "Run for Wildlife" and hopefully "ol' mom" will give them a break next time by blessing contestants with radiant sunshine.
Soils Club Digs in for Another Good Year

Soil's Club business started early this year. In August, several members of the club assisted in registration and organization of a Forest Soils Workshop in Baraga. This workshop was sponsored by the Soil Conservation Society of America. Papers were presented and afternoons were devoted to area field trips. Later in August, two members attended the International Meeting of the SCSA in Dearborn. It was an excellent opportunity to exchange ideas with students and meet potential employers from various parts of the country. During our stay we also visited a successful muck-farm and toured the sights of Detroit. With the start of the school year, one of our main objectives was to increase our membership. Starting with five members, we worked our way to approximately twenty. Our first meeting brought Dr. Lindo Bartelli and Fred Kekko, District Soil Conservationist, to speak on job possibilities in soils and the procedures for filing federal job applications. The highlight for fall quarter was a trip to Southern Ohio for an American Society of Agronomy Soil Judging Contest. It was the first year our club participated in such an event and we did surprisingly well, one team coming in sixth in a field of 19 teams with primarily agricultural backgrounds. We proved that foresters could compete on their level and made a name for MTU. Winter quarter brought Winter Carnival which the Soil's Club participated wholeheartedly. Our one-nighter statue did not place but a good time was had by all. In March, Dr. Bartelli gave a fascinating slide presentation on the people and soils of the Soviet Union. Spring also brought a talk by Walt Summers, a MTU graduate and now Dickinson County district Soil Conservationist. Tree planting began as soon as the weather warmed up and we then prepared ourselves for the highlight of spring quarter, our second soil judging meet, held in Platteville, Wis. in late April.
The Douglass Houghton Student Chapter of the American Congress on Surveying and Mapping has reached its second year of existence. Leading the twenty-member organization, composed of faculty members and students, this year are: Chairman John Matonich, Vice-Chairman John Maloney, and Secretary-Treasurer Rena Lautzenheiser as well as a five-member Board of Directors. Faculty advisor to the group is Chuck Hein.

Speakers at the well-attended meetings included representatives from instrument companies, the Chapter's contact member, John Smallwood; a student with surveying experience gained while working in Alaska for the Bureau of Land Management, and a lawyer.

Considering projects, the Chapter has begun working on the establishment of an EDM test range in Houghton County. The test range will be available for use by surveying and engineering firms from the Upper Peninsula and Wisconsin. Using the test range, the firms will be able to adjust their EDMs.

Another long-term project is the expansion of the surveying library. The library is a collection of reference materials and books available to students as assistance with current classes in addition to preparing for the state registration examination.

In preparation for the March convention of the Michigan Society of Registered Land Surveyors, the Chapter compiled resumes of members into a Resume Booklet to be distributed to prospective employers attending the function. The Chapter was well represented at the Convention held in Dearborn.

Anticipated projects include tutoring sessions for students enrolled in introductory surveying classes.

On the lighter side of the Chapter's activities was the posting of a solid victory over the foresters in a game of snowshoe softball, hopefully just the beginning of inter-club activities in the Forestry Department.
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