UNDERCLASSMEN

CLASS OF 1966

by BILL CURRIER

Back to school again. For most this means giving up an ax, marking crayon, or staff compass and going back to lectures, books, and homework. From the practical application of a fire supression crew in Idaho, or re-establishing sample plots in northern Maine, or running a campground in Massachusetts; back to the theoretical Forestry learned from books. Over the last three years, the books and lectures have decreased the number of people in our class, but this year the class has been increased by a number of transfer students from Vermont.

This year, with the majority of background courses behind us, we are starting to really get into the heart of Forestry. Now that we have reached this point, the wildlife students have become almost completely separated from forestry; going off into their own particular courses. Besides the split between forestry and wildlife, a split in the forestry courses is starting to develop; with each person going into one of the different sequences offered. The majority of people going into Utilization or Management. By the end of this year, each person will have decided not only into what sequence he is going, but also what particular field in that sequence he would like to work in.

The most important courses that we take this year are silvics and silviculture. Silvics deals with the life history of forest trees and the effect of environmental conditions upon the trees. The silvics lab., with the final report, is probably the most important application of the silvics lectures. All fall is spent obtaining data from a plot of land with everyone taking one particular stand for his report. Silviculture deals with the cultivation of forest stands. During the spring silviculture labs., we try to improve a forest stand by applying good silvicultural practices.

Two other courses of importance are plant physiology and soils. Plant physiology gives us a clearer understanding of the functions of plants; by the end of the course we realized that a plant is not only chlorophyll, water, carbon dioxide, and sunlight; but such things as enzymes, concentrations, pH, and physical conditions are also important. Forest soils gives us an understanding of the importance of soils on the growth and development of forest trees. When we combine silvics, silviculture, soils, and plant physiology; we start to get a better understanding of how complex a forest really is. A clear understanding of the complexity of a forest is one of the building blocks of forestry that we will use in our future lives.

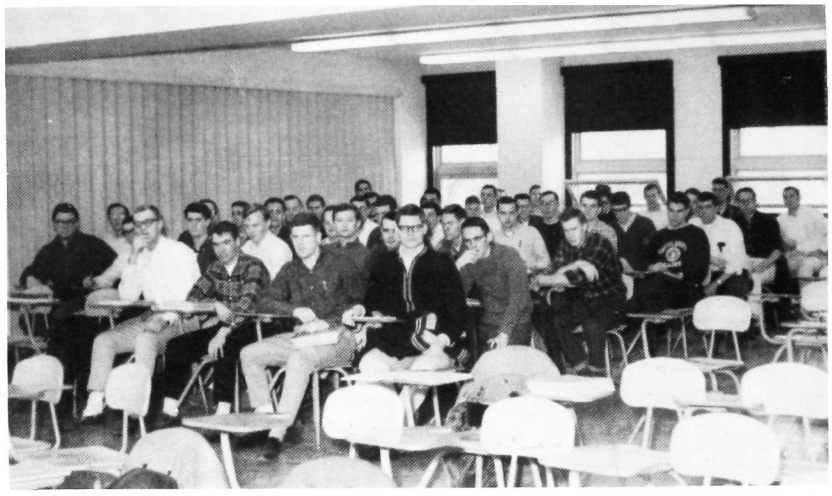
Fire control, wood identification, timber management, timber harvesting, and forest planting are some of the courses that are offered in the different sequences besides the other core courses. Along with these courses, there are a number of electives which we can choose depending upon our own interests. The suggested electives range from public relations to logic; besides other electives in other forestry sequences.

After finals are over in the spring, we leave on one of two trips; either silviculture or utilization, depending upon which sequence that we are in. The utilization trip visits different logging operations in New England and Canada. The silviculture trip visits different forests throughout New England observing the management of the stands. After we return from the trip, we go to Camp Robert I. Ashman, to join the wildlifers for eight weeks. The wildlifers have the camp a week for themselves while we are on our forestry trip. We have heard of the nice swamps and friendly mosquitoes, but we don't believe it to be that bad. At summer camp, besides the lecture, we will be in the field putting into use the material we have learned in class. We will be combining both practical and theorical knowledge to get a better understanding of forestry.

With the end of our Junior year rapidly coming to a close, we look ahead to our senior year and the question of our future, but we will answer this question and go on to make our futures in forestry and wildlife...

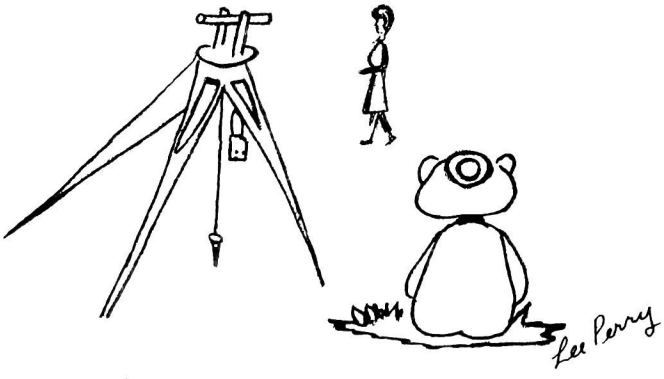
CLASS OF 1967

by DAVID HALE



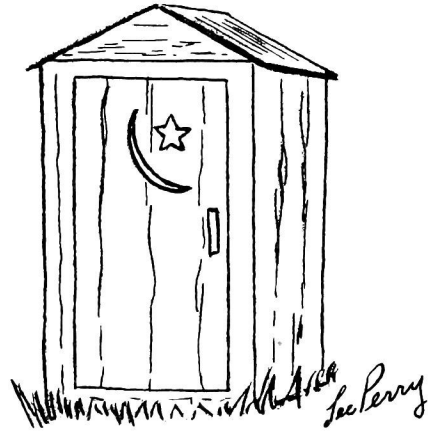
The remains of the freshman class of forestry students, plus a few transfers, have once again assembled in the halls of learning to settle down to a couple more semesters of absorbing knowledge.

Many of us find it easier to cope with our academic problems, but still tend to let them slide somewhat since we "know the ropes" and have discovered our limitations, after one year of forestry. After finishing this one year we all feel closer to our destination and are taking courses that are related to our particular line of study, which we have all been anxious to do. Our forest sampling and statistics course has enlightened us as to what kind of work we might encounter in our future job. Economics, which comes hard to some of us, gives us an insight to the economic situation of our country, its fundamental problems, and policy alternatives, which are very important to everyone as they affect us in our own everyday living.



" NEXT SIGHTING PLEASE "

On the other hand, we all found it fun trying out our transits and levels in our elementary surveying course. Even more fun was sighting in on "unidentifiable objects" walking across the Mall, and studying them until they passed out of sight—usually into Hart Hall. We did get down to business later and collected points for our customary maps of an area of the campus. The more devoted



" OF COURSE, WE TAKE PHYSICS "

students spent their Christmas vacation drawing their maps, while others spent a couple of "all nighters" trying like mad to finish before the deadline.

"It must be a dogberry!"

Dendrology was a time consuming course in which we learned the classification and nomenclature of many different plants, although some of us swear we will never look at another pine cone or acorn again.

Geology for engineers has a division for the foresters in which some of us have learned to identify different rocks, minerals, and their formations.

The wildlifers have found wildlife ecology an interesting course from which they learn the habitats of different animals, their habits, and limits of tolerance, and many other things. Although not an easy course, it is very practical for the future wildlifer.

After taking all the courses we are looking forward to another semester of economics, mensuration and statistics, along with physics, entomology, and speech.

Besides these mentioned courses, summer jobs also help us to prepare for the professional work we hope to be doing someday. Last summer a few of us worked in the western part of the United States wile others worked in their home states in National Forests or Parks. Whatever they did, they all can chalk up some experience and look forward to another summer of fun and relaxation before forestry summer camp rolls around (yes, we've heard!).

Many other activities account for the well-rounded forester here at Maine. These include the Woodsman's Team, "Hot Shots" Fire Crew, Rod and Gun Club, and the Forestry Club.

Whatever we learn, do, or experience this year will surely help us in the future, which we hope holds the best for all of us.

CLASS OF 1968

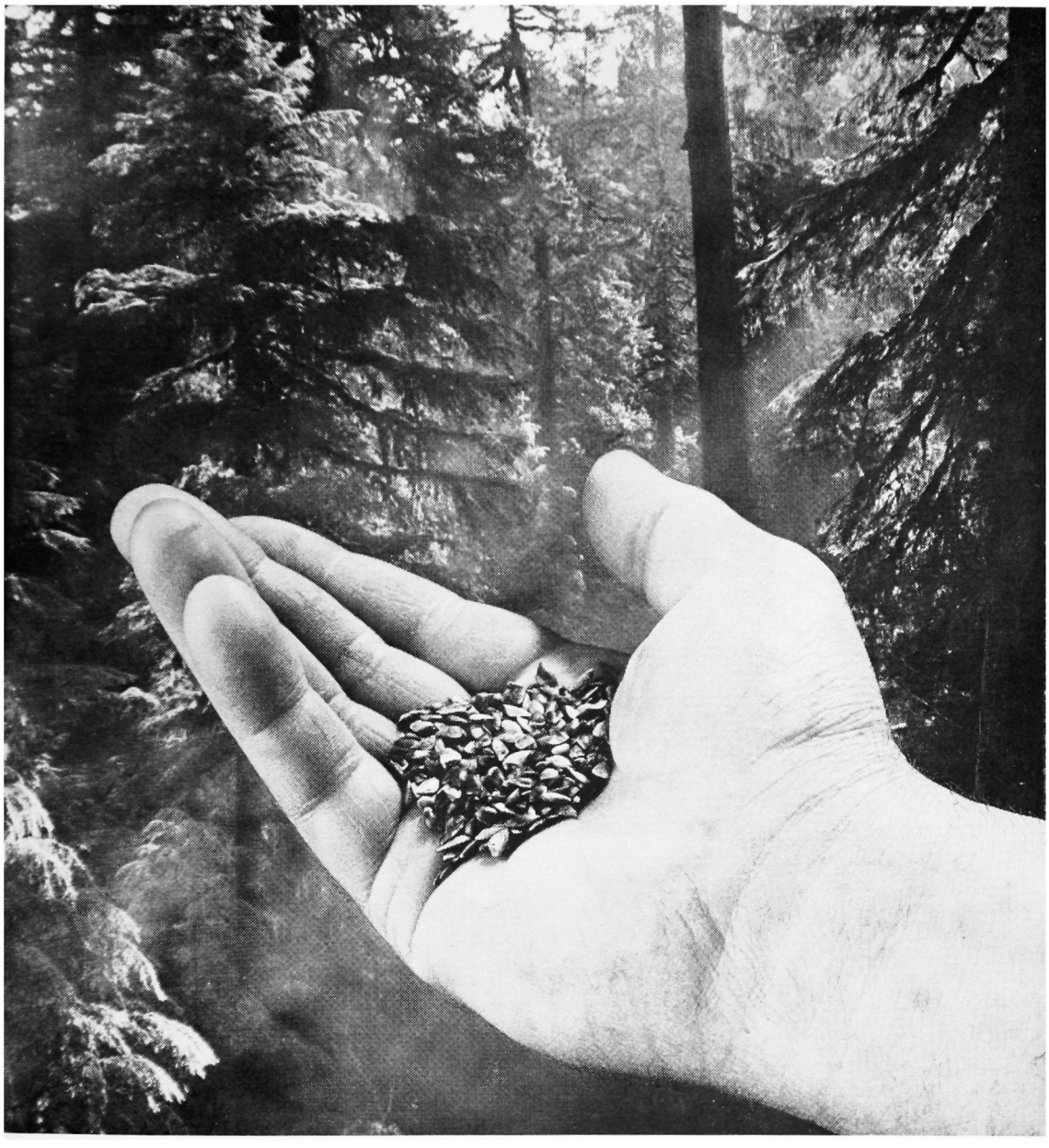
by DAVID REYNOLDS

Despite definitions of Forestry, wearing sneakers to lab, broken chains, misguided compasses, and getting lost in Lot A, the freshman class is still the biggest ever. Deering Hall is bulging at the seams and removal of large quantities of knowledge by the newcomers hasn't depleted the hot air any—in fact, it seems to have added to it.

An unusually large percentage of us seem to be going into Wildlife studies, but perhaps this is only because of the forestry curricula's Eg-12 requirement. Most of us with the patient help of our advisors have staked out some sort of academic plan to follow.

It is not unusual, as we found out, for visions of handsome green uniforms and fire towers to change to fingers freezing on abney levels and mittens hooked in diameter tapes. The "realities of field work", however, have not been all gruesome. There is a certain companionship felt to your truckmates as your posterior tissues are battered on the roads of the University Forest and some compassion beneath the hilarious laughter for the poor lab partner whose lower leg disappears into the sewerage brook that runs through Lot C. The quiet winter afternoons, too, when only the chatter of red squirrels and the multi-toned cried of DBH penetrate the snow-covered pines, are a source of some inspiration. They also make you somewhat glad to get back to the civilized part of campus.

We now have a start, the beginnings of long professional careers. We have no fear of the future but the next round of prelims, and they will quickly pass, as will we. Some of us will have our first experience this summer, but we all have plans to work hard and return in the fall with more under our hardhats. The more we do, the more we want to do!



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A LOOK AROUND THE FOREST

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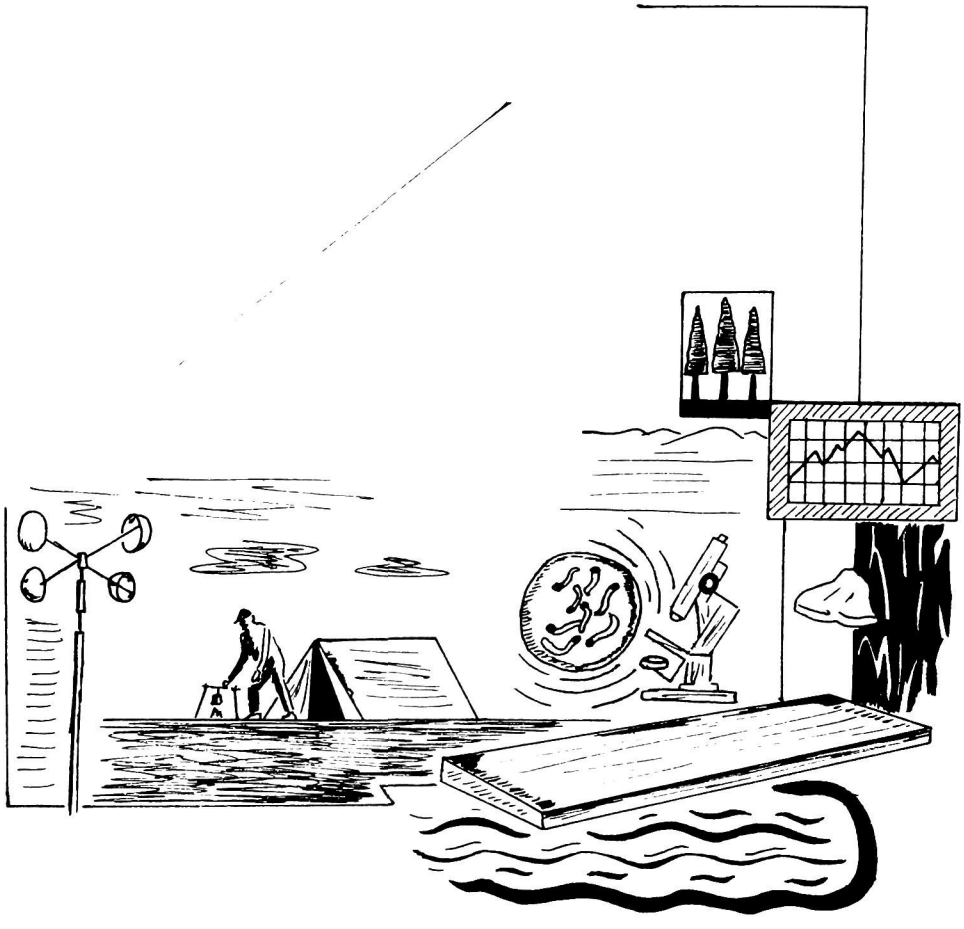
Pulpwood?

A casual stroll

WATER AND FORESTRY



Forest Watershed Management In The Northeast

by ROBERT S. PIERCE
Research Forester
Northeastern Forest Experiment Station
Forest Service, U.S. Dept. of Agriculture
Laconia, N. H.

"GOVERNOR OKAYS RAINMAKER FOR WATER-HUNGRY STATE." A headline like this could be expected in the arid West, but certainly not in the Northeast where water is plentiful. But such headlines did appear last fall when the State of New Hampshire, with the Governor's approval, hired a professional cloud-seeding expert to help alleviate the drought.

Northeasterners generally assume that they have adequate precipitation well distributed the year round. Long-term averages show that the amount of rain and/or snow is rather even for each month. And the average yearly totals look good, varying from about 32 inches along Lake Erie and the Champlain Valley to more than 50 inches in some mountainous regions and along the seacost.

Why then does the Northeast suffer occasionally from lack of water? An obvious answer is that averages don't tell the whole story. It's much like a person with one foot in hot water and the other foot in ice water. On the average he should be comfortable!

Forest Water-Resource Problems

Floods at times and droughts at other times cause inequities in the distribution of our water supplies. Last November Concord, New Hampshire, had a 9-inch precipitation deficit, which started in May (September rainfall was 11 percent of normal), whereas in the previous year November rainfall was 182 percent of normal.

Although erratic precipitation can present difficulties, a more serious problem exists in the distribution of surface streamflow. For instance, in northern New York and New England there are four periods that show wide contrasts in stream levels. These contrasting periods are accentuated in regions where snow accumulates all winter. From December through early March little to no snowmelt occurs during the snowpack buildup. Thus at this time no water enters the soil. Without soil-moisture recharge, streamflow cannot be sustained and therefore gradually recedes to low levels. (fig. 1).

In March and April, when the snowpack melts and possibly combines with spring rains, about one-third of the yearly runoff can flush off the watershed in several weeks —or several hours if conditions are ripe. This flood potential exists every year.

After the spring runoff period, streamflow again recedes to minimum flows in August and September. Less than 1 percent of the yearly total may trickle off the watershed during these months.

Water quality is also affected by these low flows. Pollutants dumped into streams at this time can negate virtually all uses of the water.

When transpiration ceases at leaf fall, soils are once more recharged with moisture

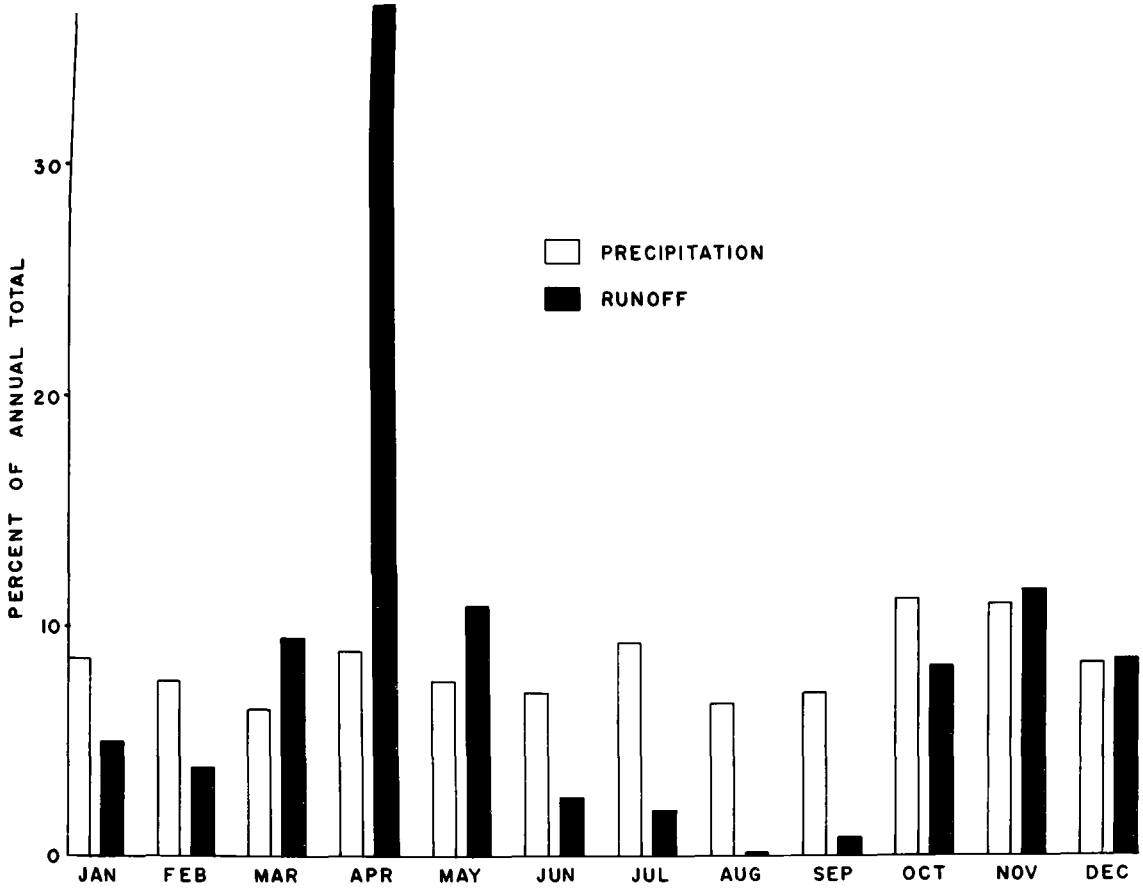


Figure 1.—Annual distribution of precipitation and runoff on Hubbard Brook Experimental Forest, West Thornton, New Hampshire. These patterns are characteristic of areas having annual snowpacks and shallow soils with low soil-moisture storage.

from the fall rains and again contribute substantial portions of this water to streamflow. Surprisingly, for the White Mountain area, the fall periods have historically accounted for about the same number of devastating floods as the spring periods associated with both rain and snow melt.

Regions having shallow soils, sandy texture, and steep terrain may show marked contrasts in streamflow during any of the four periods because of limited opportunity for the soils to detain or retain water.

Indications are that by 1980 our needs for water will double. Anticipation of these demands has prompted searches for increased water supplies through many means—desalting sea water, cloud seeding, re-use of treated sewage effluent, discovery of new groundwater aquifers, construction of more dams and reservoirs, and reduction or elimination of stream pollution.

Because streamflow is the major water source in the Northeast, continued investigation is necessary for improving our knowledge of the interrelated factors that produce this streamflow. Also, because all the major rivers in the Northeast have forested headwaters, it is important that intensive research be conducted in these source areas.

Forest Watershed Research Under Way

The importance of forests to streamflow was recognized in the Northeast as early as 1913 by the U. S. Geological Survey, in a study conducted in New Hampshire. Since that time, except for a few studies at scattered locations, little or no forest-watershed research was conducted in the Northeast until the late 1940s and early 1950s. At this time two research units were established by the U. S. Forest Service to work specifically on forest-watershed problems. In the late 1950s and early 1960s several additional

units were set up—two more by the U. S. Forest Service, one by Pennsylvania State University, and one by Syracuse University.

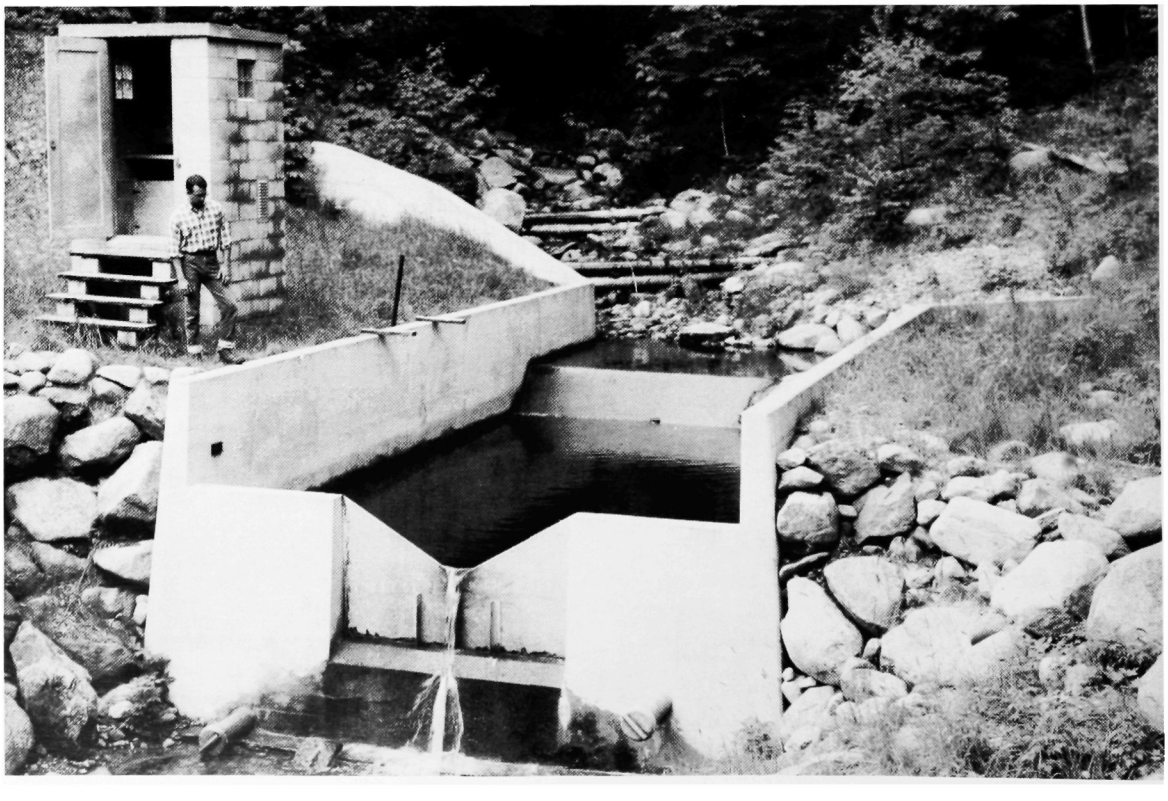
Because most of the forest-watershed research in the Northeast is conducted by the U.S. Forest Service or in cooperation with it, the following discussion concerns primarily the research programs of the Forest Service.

The Northeastern Forest Experiment Station, with headquarters at Upper Darby, Pa., has established forest - watershed - research projects at Laconia, N. H.; New Lisbon, N. J.; Syracuse, N. Y.; and Parsons, W. Va. These projects are part of a nationwide program to determine ways to increase water yields; to improve the timing and distribution of streamflow; to rehabilitate damaged watersheds; and to provide adequate protection to soil and water resources during the course of multiple use for timber production, recreation, wildlife, and grazing.

Forest - watershed - management research now in progress by the Laconia unit is conducted mainly at the Hubbard Brook Experimental Forest in the White Mountains of New Hampshire. Here seven stream-gaging stations measure streamflow from forested watersheds ranging in size from 30 to 190 acres. These undisturbed watersheds are now being calibrated; that is, equations are being developed, based on several years' record, for predicting the flow of one watershed from the flow of another.

Two of these watersheds will be ready for treatment next winter. One treatment is being designed to determine what maximum summer flows can be achieved by near elimination of transpiration, and what maximum spring flows can be achieved from snowmelt. The other is to determine if the snowmelt period can be lengthened or if snowmelt can be more evenly distributed by strip cutting. A third watershed, also calibrated, will remain untreated as a control for checking on the performance of the other two (fig. 2).

Figure 2.—Measurement of streamflow from experimental watersheds above this stream-gaging station helps us understand the behavior of watersheds and the factors that influence it.



Future watershed treatments that influence the use of water by vegetation, soil-moisture storage, and accumulation of rain and snow will be tried as soon as the other watersheds are calibrated—a period involving about 5 to 7 years.

Recent results from one study[1] show that streamflow from a 30-acre Hubbard Brook watershed responds closely to the flow from 18 other watersheds averaging 45,632 acres in northern New England for all seasons of the year. This bolsters the prospects of using streamflow information from small experimental watersheds to predict streamflow on much larger watersheds. This is one of the ultimate purposes of watershed research —tying together research information from plots and experimental watersheds so that land managers can predict how streamflow will respond if they treat the land in a certain manner.

Other work under way at Hubbard Brook includes research in soil-moisture accumulation and depletion, determining the heat energy required for evaportranspiration processes, and determining how manipulation of vegetation affects humus conditions and water quality (fig. 3).

Watershed research at other Forest Service locations in the Northeast involves work at:

- New Lisbon, N. J., in cooperation with various municipalities in conducting investigations for improving water yields on watersheds supplying large cities—for example, Baltimore, Md., and Newark, N. J.—and stream-gaging studies in cooperation with schools and other agencies (12 such gaging stations are in operation).

- Parsons, W. Va., in water-yield improvement in the northern Appalachian Mountains to increase low summer flows and to decrease flood flows from rainfall and combined rain and snow melt (9 experimen-

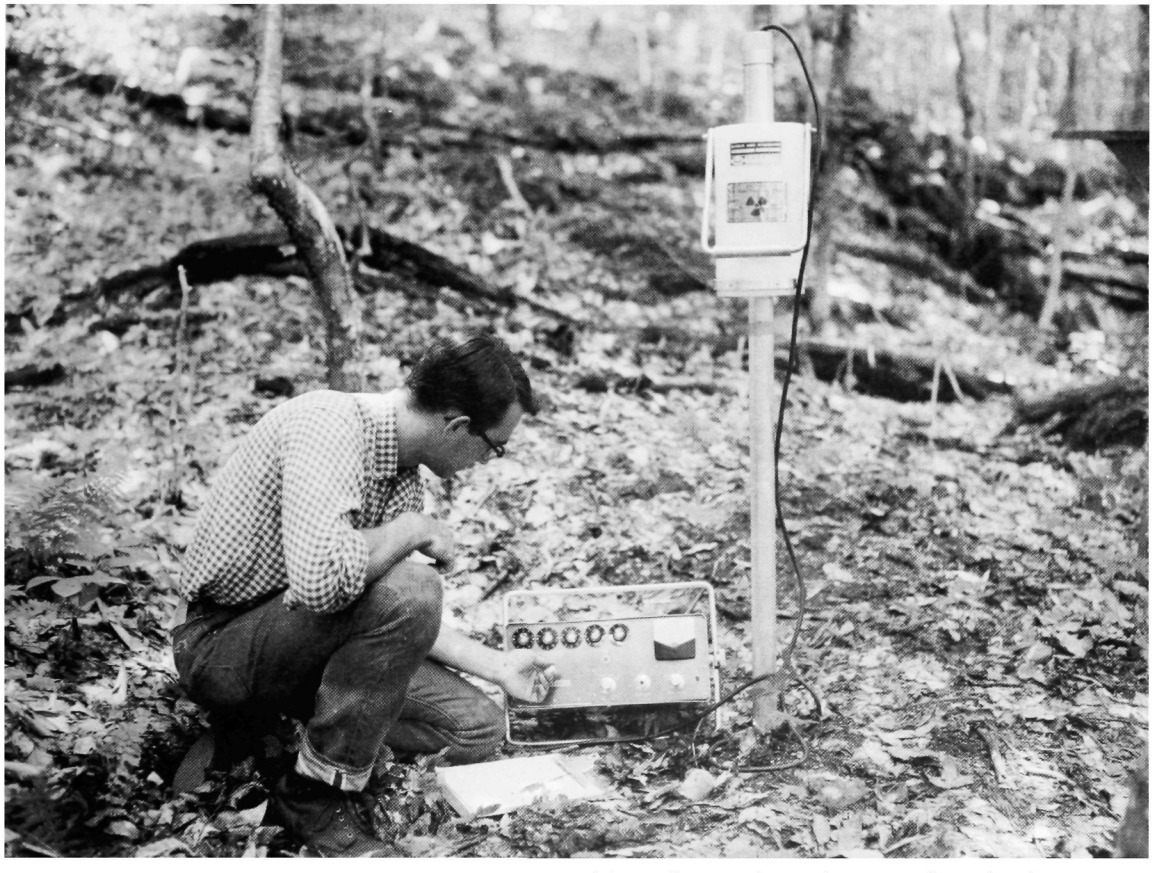


Figure 3.—Soil moisture measurements with this nuclear probe assist researchers in determining the role that soils play in contributing water for streamflow.

[1] Northeastern Forest Experiment Station. ANNUAL REPORT, 1963. U. S. Forest Serv. Northeast. Forest Expt. Sta., 110 pp., illus., 1964. Upper Darby, Pa.

tal watersheds are in operation, 6 of these have been treated and the results from 4 treatments have been published).[2]

- Syracuse University at Syracuse, N. Y., conducting investigations in upper New York State on the influence of forest regrowth on streamflow, and studying the fundamentals of snow accumulation and melt.

There are some promising approaches in forest-watershed-management research on the problem of disproportionate streamflow distribution. Research in the Northeast and elsewhere in the Nation is directed along the following lines:

Increasing Water Yields

To increase surface streamflow supplies, there are two major possibilities: reduce transpiration and increase available precipitation. Some of the transpiration-reduction experiments are designed to: (1) develop acceptable sprays for application to leaf surfaces to cause stomatal closure; and (2) develop forest cutting systems to reduce the transpiration draft.

Experiments for increasing effective precipitation are designed to: (1) reduce the canopy by removing individual trees, or remove the canopy completely in blocks or strips to lessen or eliminate interception; and (2) determine and encourage the growth of species having low interception characteristics.

Decreasing Water Yields

Research efforts to reduce flood runoff are being made to: (1) find species having high interception characteristics; (2) determine and encourage the growth of trees, shrubs, grasses or combinations of them that can best allow snowmelt at differential rates and times; and (3) find ways of increasing soil moisture storage through encouragement or introduction of favorable species or by applying special land treatments.

Coordinate Forest-Management Plans

Multiple-use management of our forest lands in the Northeast is rapidly becoming commonplace. No longer can tracts be managed solely for timber production. Recreation, wildlife, and water are becoming as important as timber.

The importance of water originating on our forest lands cannot be overlooked. Ever-increasing pressures will be placed on these lands to produce cheap, clear water for use by industry, agriculture, and our growing metropolitan areas. Forest-management plans must be revised to coordinate watershed-management practices when research finds that certain desired water yields can be effected by vegetative manipulation or other measures.

[2] Reinhart, K. G., A. R. Eschner, and G. R. Trimble, Jr. EFFECT ON STREAMFLOW OF FOUR FOREST PRACTICES IN THE MOUNTAINS OF WEST VIRGINIA. U. S. Forest Serv. Res. Paper NE-1, 79 pp., illus., 1963. Northeast. Forest Expt. Sta., Upper Darby, Pa.

Foresters And Water – Companions In The Growth Of The West

by JOHN D. SCHULTZ
Asst. Professor
Utah State University
Logan, Utah

Water in the western United States, as in most other regions of the world, is truly the essence of life. Outside of arid or semi-arid areas, however, people may not appreciate just how fully all life depends on water with an ever-increasing growth of population in nearly all parts of the United States, not much time will pass before it is recognized everywhere that the one primary element—the key to the future—is water itself.

Life Magazine, several years ago, portrayed the 22 major water resource regions of the United States on a big, colored two-page map. Here it was pointed out that only a few of these regions were presently experiencing severe water shortages. But, within only a few short years, several seemingly water-rich regions were expected to feel the pinch of too little water to support a burgeoning population, industrial expansion, or agricultural needs for water.

People sometimes think of the beautiful mountainous areas of the western United States as sites perpetually laden with a blanket of snow that keeps the cool mountain waters flowing. This is true in only a few places for the winter snowpack has usually melted by mid-summer. Man's demands for water must be satisfied either from reservoirs that have trapped the rapid snowmelt waters of the spring season or from the small streams which continue to yield water as it seeps down through the soil mantle.

Except for the high mountain areas, the West is very dry and it experiences the greatest evaporative forces in this country. The lower areas surrounding mountain ranges sometimes receive as little as 5 or 6 inches of annual precipitation. With the notable exception of the Pacific Coastal forests, only in the high elevations are amounts from 30 to 60 inches found annually; and as much as 80 or 90 percent of that amount often occurs as snow. It is true, as has been said, that the mountains of the West are humid islands surrounded by an arid sea.

Numerous schemes have been advanced as to how additional water supplies might be provided to supply the growth needs of metropolitan, industrial, and agricultural areas. Some involve vast engineering and reclamation projects designed to divert existing water supplies from areas of low demand to those where it is more urgently needed. Redistribution of Colorado River water and that of its tributaries is one such example. Projects involving this water supply are already in progress. The North American Water Plan, whereby water might be brought to the States from Alaska and Canada, may sound far-fetched but it is seriously contemplated. Likewise, the artificial seeding of clouds to bring about a release of water over areas in dire need not only is a possibility but is practiced on a limited scale. And, a huge share of our Federal water research dollars is being poured into developing procedures for desalinizing sea water.

In the midst of all these expensive and grandiose schemes you may, perhaps, ask "How can a forester possibly fit into any part of this water business?" Regardless of how feasible any or all of these projects may

become, the fact still stands that the major share of usable water delivered for man's use in stream channels comes either from forested lands or lands over which forest has a regulating influence on water yield. In fact, most forests exist where they are because of their intimate relation to the climate of the area. Although forests do influence the microclimate of areas, their existence is a function of the overall macroclimate and not vice-versa.

Publications of the U. S. Senate Select Committee on National Water Resources refer to schemes already mentioned, but they also solidly emphasize that more efficient on-the-ground use of existing water supplies offers greater potential for increasing our supply of water in the immediate future. This is where the management of water-yielding lands falls directly back in the laps of foresters and other land managers. Several specific instances are mentioned in these governmental reports, and many have been the take-off point from which forestry research projects have been launched.

Because of the uniquely high potential evapotranspiration that exists in the West, activities which can result in reductions of transpiration and evaporation losses are most promising. The conversion of vegetation on some sites from deep-rooted to shallow-rooted species may permit greater water yields from such areas. This simply means that less moisture would be required to recharge a depleted soil mantle under shallow-rooted plants and the excess precipitation might be available as runoff. Similarly, some plants just naturally are capable of transpiring more water than others under similar climatic and site conditions. Replacing them with their counterparts which use less water might conceivably influence water yields.

Reductions in water use may be obtained without a conversion of vegetation at all. Perhaps various thinning or harvesting techniques can be developed for some species so that less water is used. Research is presently in progress on this subject dealing with such species as ponderosa pine, aspen, pinyon pine and juniper, and oak brush throughout the Rockly Mountain States. The closure of tree stomata to reduce transpiration temporarily will be attempted by means of recently developed foliar sprays. Sprays that will defoliate and thus eliminate transpiration during the height of the potential evapotranspiration season are also to be used.

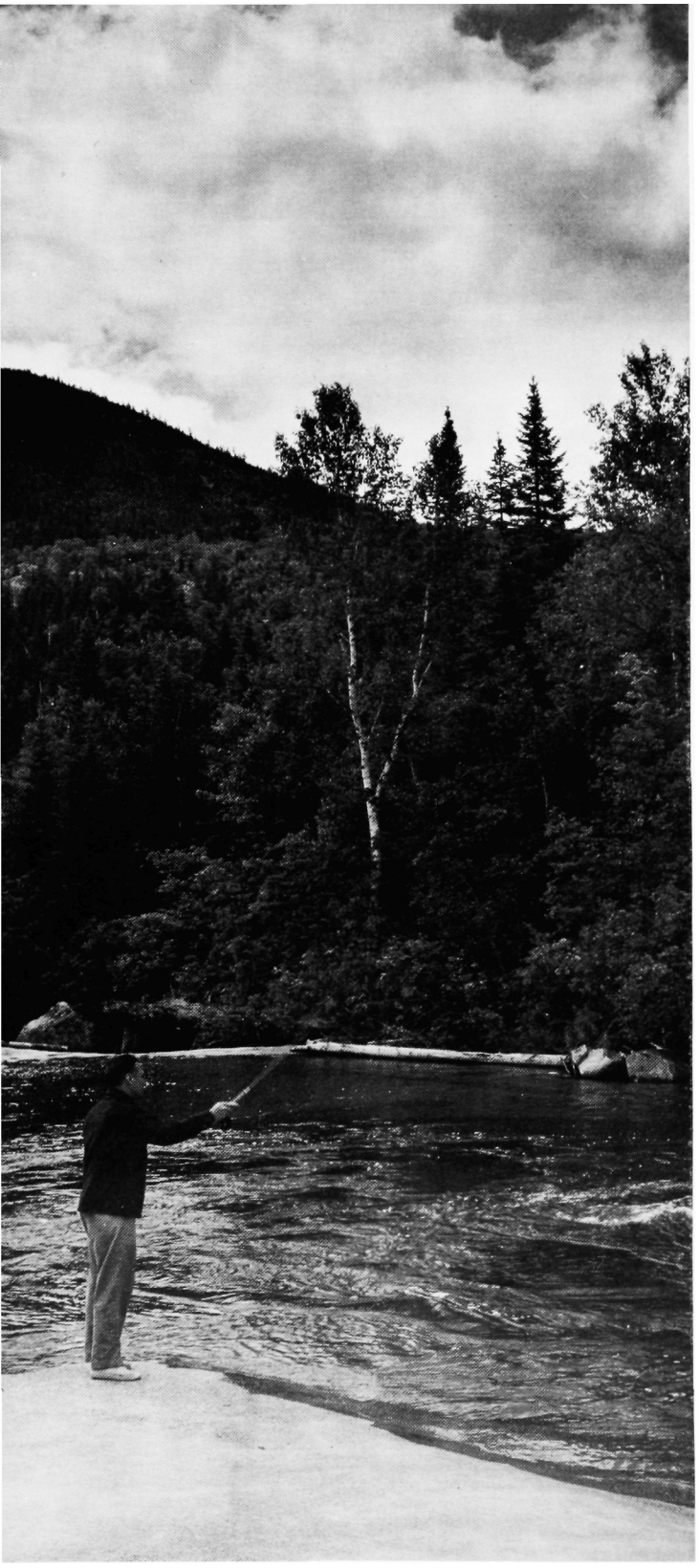
Management of high montane and subalpine forests to affect snow accumulation and the subsequent patterns of snowmelt also offers potential for better regulation of the precipitation that reaches an area. Various cutting patterns have been shown to affect snow accumulation and to accelerate or delay snow melt in the spring or early summer. In parts of the West where excessive precipitation is a problem, forest and watershed management to effect better storage conditions for water in the soil or to hold it in snowpacks on the soil surface is mandatory. Sometimes the timing of water yield is equally as important as its quantity. This is particularly true when and where artificial storage facilities are inadequate, either through being too small, too few in number, or being already filled to capacity when an additional water supply reaches them. The timing of snowmelt delivery in these areas is critical, and any procedure that can delay the melt period or spread it over a longer period will be helpful in solving excess water problems.

Another facet of forest and watershed management in the West is that involving water quality. Water laden with sediment from mountain lands renders the lives of reservoirs too short. Forestry, in some instances, will involve the management of protection forests where no use is permitted that will disturb the water-regulating nature of the land and vegetation. But, where a market for wood products exists, logging will inevitably take place. When the chips are down, however, and it becomes a matter of providing clear, usable water from mountain watersheds, you can be sure that logging operations will not be permitted unless they can be conducted in a way that will not result in sedimentation of streams. The construction of logging roads and skid trails has, in the past, contributed overwhelmingly to the amount of stream sediment that follows logging operations. Control over this problem is a real challenge facing foresters and logging engineers in mountainous terrain.

Thus it can readily be seen that forest land management cannot be left out of the water resource picture for the future. The need for and the place for foresters in this picture becomes clearer all the time.

Watershed Management Grows in Importance

Watershed management in the West has become the concern of all users of the land and particularly those professional people like foresters and range managers who have responsibility for regulating land use. Nearly all projects undertaken by our large land-managing agencies such as the U. S. Forest Service and the Bureau of Land Management involve, in one way or another, a definite concern for the interplay between soil, vegetation, and climate. While the field of watershed management has sometimes been termed "the care and management of steep slopes," this tends to restrict it to mountainous lands only. The earlier reference to soil, plants, and climate is more nearly correct because this is what is embraced by all branches of land management and its professions everywhere.



Evidence of the increasing interest in the subject area now known as watershed management can be found by looking toward the forestry schools of the West. Virtually all of the western schools currently offer some course work in forest and range hydrology, forest influences, and watershed management. Some even have watershed management departments or units, and some have watershed curricula within their existing forest management or range management departments. The advent of the McIntire-Stennis Cooperative Forestry Research Act of 1962 and the newly-implemented Water Resources Research Act (Anderson Bill) have enabled forestry schools to create staff positions dealing with watershed management. By no means is this curriculum expansion limited to the West. Several forestry schools in the East have climbed on the bandwagon and begun programs dealing specifically with forestry and water resources. This is not to belittle the programs that have been under way in the past under a different guise, but watershed management may now be said to have "come of age."

Some people believe that watershed management is a separate field by itself. Others look upon it as a special concern of the already existing land management programs of forestry, range management, and conservation. In the latter programs, a basic forestry or range management education is obtained with special emphasis being placed on additional course work in soils, geology, mathematics, and hydrology. Whatever the nature of the college training, it can now be recognized that water developments in the West, particularly, are closely related to forest and range management and that people trained in these disciplines will have a lot to say about the future of the West.

Water And Forestry In Hawaii

by PAUL DUFFEY
U. S. Forest Service

Water and forestry in Hawaii may seem to be a rather foreign subject for an article in the "Maine Forester." Perhaps it is; But as foresters we should have some knowledge of our nation's forest resources and Hawaii is definitely an integral part of this nation though it may seem remote or foreign to many. Further, one or more of you may have an opportunity to work there. If you do, take it. I did and enjoyed every minute of my 4-year stay.

Hawaii's forests are unique among the forests of the United States. Their potential is great. Consequently work is exciting and it requires some major changes in the thinking of most foresters experienced on the mainland. In the remainder of this article I hope to show how Hawaiian forests differ from those on the mainland and to describe forestry problems and potentials with emphasis on water production.

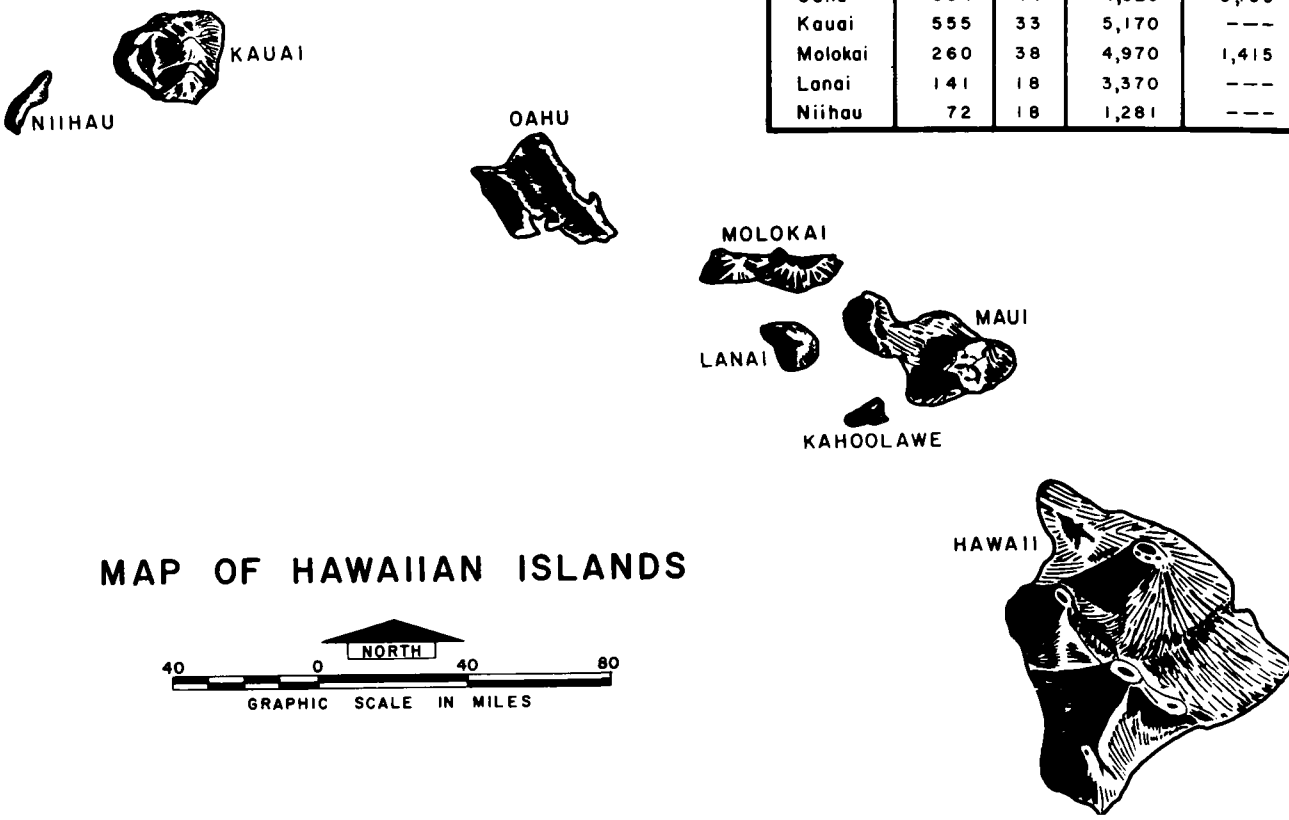
A quick look at Hawaii's position on the world map presents several surprises to many. I have found many people to be surprised to learn that Hawaii is not just a single island a short distance off the California coast line, but is actually a group of islands over 2000 miles out in the Pacific. It is the southern-most state in the Union and the only state in the tropics. Hawaii lies at the same latitude as Cuba 18° to 22½° north latitude. Though Hawaii lies a great distance out in the Pacific, it cannot claim the distinction of being the western-most state in the union. That distinction belongs to Alaska.

The state of Hawaii lies at the southeast end of the Hawaiian archipeligo, a chain of volcanic islands stretching for about 1800 miles from northwest to southeast across the Pacific. The peak of the volcanic activity that formed these islands is estimated by geologists to have occurred from 100 million to just a few million years ago. The earliest activity formed the northwestern part of the chain. The point of volcanic activity moved southeastward. Now the only activity is on the Island of Hawaii at the southeast tip of the chain. Eruptions occur frequently in Kilauea crater and surrounding areas. During some eruptions, lava flows extend to the ocean and thereby add to the land area of the state. Within this rather small state we can find land nearly 100 million years old or just a few minutes old.

But while land formation is taking place in one area, erosion is removing land in another. The old islands at the northwest end of the chain have been worn down to where some are now only shoals, coral reefs, or remnants of lava rock. Except for Midway Island, a naval base, these islands are uninhabited. Most are part of a national bird refuge administered by the U. S. Fish and Wildilfe Service.

The state of Hawaii is made up of eight larger islands at southwest end of the chain (see map). These major islands are the newer islands. Consequently erosion has not cut these down to bare remnants. On all of these islands, except the 3 smaller ones of Lanai, Kahoolawe, and Niihau, mountains reach 4000 feet or more in elevation. On Maui, Mt. Haleakala reaches 10,000 feet above sea level; and on Hawaii, Mauna Loa and Mauna Kea reach to near 14,000 feet. On these major islands, pineapple and sugar cane are grown at lower elevation where the soil is suitable. Forest or range land cover the poorer soil at lower elevations and most of the land at higher elevations, except on Maui and Hawaii where at elevations over 7000 feet the climate is too dry to support a forest cover.

ISLAND NAMES	AREA (SQ. MILES)	MAX LENGTH (MILES)	HIGHEST MOUNTAIN PEAK (FEET)	2ND HIGHEST MOUNTAIN PEAK (FEET)
Hawaii	4,030	93	13,784	13,680
Maui	728	48	10,025	5,788
Oahu	604	44	4,025	3,150
Kauai	555	33	5,170	---
Molokai	260	38	4,970	1,415
Lanai	141	18	3,370	---
Niihau	72	18	1,281	---



MAP OF HAWAIIAN ISLANDS

Now this introduces the subject of Hawaii's climate - probably the most delightful and the most interesting in the world. Though Hawaii lies within the tropics, the climate generally is not the hot, humid climate generally is not the hot humid climate that might be expected. Hawaii is air conditioned, so to speak, by the northeast tradewinds. These winds, blowing in from the North Pacific, are relatively cool and moist. Further, since Hawaii is so far removed from any large land mass, extreme temperatures that often build up over such land areas do not influence Hawaii's climate directly. As a result, temperatures in Hawaii are generally moderate. Extreme values that have been recorded are 100°F in the driest part of several of the islands and 13°F at about 11,000 foot elevation on Mauna Kea on Hawaii. But, except for a limited area in dry parts of the island temperatures above 90°F are unsual and, except for elevations over 2,000 feet, temperatures below 55°F are rare. Below 2000 feet the mean temperature for the period May to September is 73° to 78°F and for October to April, 70° to 75°F. During the summer and winter the average daily temperature range at lower elevation is only about 15°.

Homes are neither air-conditioned nor heated. However, as is expected, temperatures at higher elevations have greater daily range due to cooler nights. Even at the highest elevations, temperatures below freezing are rare.

These same tradewinds that air-condition the islands also carry the state's precious water supply. Rainfall in the ocean surrounding the islands is estimated to be 25 to 30 inches per year not much different

than annual precipitation in Maine. In a warm area like Hawaii 30 inches of rain is not enough to sustain vigorous plant life since transpiration and evaporation rates are high. It certainly would not be enough to support a vigorous economy, which is greatly dependent on sugar can production. In some areas on the island of Oahu as much as 16 feet or 192 inches of water are applied annually to sugar cane. Due primarily to the large amounts of water used in irrigation of cane, per capita water use in Hawaii is nearly double the rate on the mainland. The need for a dependable water supply is great.

Fortunately, the tradewinds blow, and blow steadily. The winds are moist and as they blow against the mountain slopes of the major islands they are forced up and cooled. The moisture condenses forming clouds and rainfall. Most of Hawaii's water supply is provided by this orographic rainfall. The clouds hang on the mountains day in and day out. Lower and middle windward slopes (northeast slopes) of the higher mountains and summit areas of lower mountains (2000 to 5000 feet in elevation) receive from 150 to 450 inches of rain annually. However, on the upper slopes of higher mountains rainfall decreases rapidly to less than 20 inches at 10,000 feet or higher. The tradewinds are only about 6000 feet deep. Before they are forced to high elevations by the mountains, they part and blow around the high mountains. Therefore, the rainfall pattern is low rainfall at the base of the mountains which is generally the coastline; high rainfall between 2000 and 5000 feet levels; and decreasing rainfall at higher elevations.

Leeward areas (southwest coast) of all the islands are also relatively dry. The reason for this is that the winds are dried while passing over the mountains and not enough moisture is left to produce rain. The only significant amounts of rain in the southwest parts of each island occur during non-tradewind weather. This usually takes place in the winter months. Frontal systems move in from the northwest, or low pressure systems move in from the equatorial areas. Both systems produce intense rains over all the islands, frequently causing floods. However, this non-tradewind weather occurs a small percentage of the time and does not produce near the amount of rain produced by the tradewinds.

These unusual rainfall patterns produce great differences in annual rainfall over short distances. For example: on Mt. Waialeale, on the island of Kauai, average annual rainfall is 461 inches. That is right, it is the wettest spot in the world! In one year 600 inches of rain were recorded here. Less than 15 miles to the southwest at Waimea annual rainfall is 20 inches. The rainfall gradient between these two points is 30 inches per mile. Similar examples can be cited.

Another interesting aspect of the precipitation pattern is the phenomenon called fog drip. Fog drip is the term used to describe the process in which clouds move through a tree canopy, or other vegetation. Moisture condenses on the cooler leaves. Gradually larger drops of water form and drop to the ground. This fog drip has been measured in several places notably the redwood fog belt in northern California but only on limited areas. In Hawaii the possibility of this process contributing greatly to the water supply is good. Clouds are driven by tradewinds through extensive forest areas. In one location on the island of Lanai fog drip has been measured. For a period of three years rain gauges in the open caught only 50 inches of rain per year; under a nearby stand of Norfolk Island pine (*Araucaria excelea*, a softwood introduced to Hawaii) rain gauges caught about 130 inches of water per year. The difference in catch is attributed to fog drip.

Watersheds on the Island of Oahu in Acbien.

The discussion to this point has dealt with the climate and geology. This has been necessary to set the stage for a description of Hawaii's forestry problems and potentials.

Wood was the first important item of commerce exported from Hawaii. Soon after the British sea captain and explorer, James Cook, discovered the islands in 1778, sandalwood was harvested and exported to China. This fragrant wood brought great wealth to the Hawaiian islands the kings and high chiefs. During the height of the sandalwood trade, 1810 to 1830, shipments for some years probably exceeded 1500 tons. But by 1831, commercial supplies of sandalwood were exhausted and shipments ceased.

During this early period and on into the 1900's the forests supplied fuel wood for households and industry. Sugar mills used large quantities. Nearly all wood used for construction and other purposes was imported and is still imported today. Only limited efforts have been made to exploit Hawaii's timber resources. In 1907, a mill was set up at Pahoa on the island of Hawaii with a daily capacity of 2500 railroad ties. Most of the ties were sawn from ohia (*Mitrosideros polymorpha*). Ties were exported to California. A fire that wiped out this mill in 1913 caused shutdown of the operation. Since then timber exploitation has been confined to cutting and exporting small quantities of koa (*Acacia koa*) lumber and veneer flitches, mostly to Japan. The bulk of the timber cut is used locally for furniture, craft, and construction use. But local production amounts to only one percent of the total volume of wood used in the state.

In recent years local annual production has been less than one million board feet; imports have been nearly 100 million feet, mostly redwood and Douglas-fir from the Pacific Northwest. There is an obvious need for wood products in Hawaii, a need of which local timber supplies only a small part.

The question then arises can Hawaii's forest supply more timber? The answer is a definite yes—the forest potential is tremendous. Studies of forest growth in early experimental plantings of introduced tree species have yielded some eye-opening results. Some examples of growth of commonly planted, introduced hardwoods are: *Eucalyptus robusta* produced 130 thousand board feet per acre by age 38 years; *Eycalyptus saligna*, 94 thousand feet, age 30 years; *Froxinus uhdei*, 38 thousand feet, age 32 years; and *Toona ciliata*, 29 thousand feet, age 25 years. These figures are from better-than-average sites not the best. The stands were not managed. Over a wide range of sites and planted species, the average annual plantation growth has ranged from 500 to 1500 board feet per acre. Management could increase this.

Little is known about growth of the native forest trees most of which is koa and

ohia. Attempts to plant these have failed. Trees, except for a few introduced pines planted at high elevations, do not produce annual rings from which age can be determined. Growth rates can only be measured in plantations for which planting dates are known. Such plantations of native species are not available. However, the native species appear to grow much slower than introduced species. Further, ohia which is the predominant native forest type produces a dense wood difficult to work. Koa is difficult to regenerate. Reliance for timber species will probably be placed on the fast growing, introduced hardwoods that produce more useful woods. At the present, plantations of commercial species cover only 21,000 acres. Potential commercial forest land covers 2 million acres, most of which is now scrubby ohia or pasture land. Hawaii forests range from dry savannah-type to jungle like rain forests.

The next question should perhaps be: why isn't more timber being cut? A quick look at Hawaii's forest history can answer this question. In 1778 when Cook discovered Hawaii, forests are reported to have covered a much greater area than now. This is undoubtedly true. But Captain Cook, and later visitors and settlers, let cattle, goats, and sheep run wild. The Hawaiian chiefs placed a tabu on killing these animals. Without any control, such as predators, the animals multiplied rapidly and foraged for food to the mountain summits. Many acres of land were denuded. This, along with clearing for agriculture, left large areas of bare soil exposed to the intense rains. Erosion and flooding became widespread.

Many of the island leaders were alarmed by this damage to the soil and water. In the 1890's a Board of Agriculture and Forestry was set up to promote conservation of soil and water. In the early 1900's forest reserves were created both on public and private land. The reserves were fenced. Cattle, goats, and sheep were eliminated or greatly reduced, Tree planting was started. The plantations for which growth rates were quoted earlier in this article were planted to protect the watershed, not to produce timber. The CCC program gave a big boost to the tree planting program in 1930's. After World War II, tree planting was neglected. This early devastation and the resulting effort to prevent it has led to reluctance by many leaders to cut trees for timber. Much of the planting was done in high rainfall areas. There lies some of the best timber producing land, but these high rainfall areas are the water producing areas. The water supply is all important and must be protected. The island leaders believed a forest covered was the best protection. But, in the mid 1950's, some of the island leaders took another look at the forested watershed. Could this land be converted to agricultural land or sub-divisions without damaging the water? Could this land provide the basis for a timber industry and still supply water? To get answers to these questions the legislature at that time the territorial legislature - appropriated funds for a forest survey to be conducted by the Division of Forestry and the U. S. Forest Service. At the same time funds were set up for a tree planting program. Shortly after, funds were appropriated to start a research program a cooperative effort by state Division of Forestry and the U. S. Forest Service. The first two research positions were assigned to watershed problems. Since then research programs have been started in silviculture, wood utilization and marketing. Research emphasis has remained on watershed management. Other changes can be seen.

The state Chamber of Commerce sponsors an annual timber conference. A Hawaii Section of the Society of American Foresters was chartered in 1964. The Hawaii Division of Forestry has added personnel and prepared a multiple use plan for state forest land.

The thinking now by many private landowners and public officials is that much of the watershed can produce wood as well as water satisfactorily if management is guided by a strong research program. Exploitation of the timber supply has not increased greatly as yet, but the day should come. The potential cannot be ignored.

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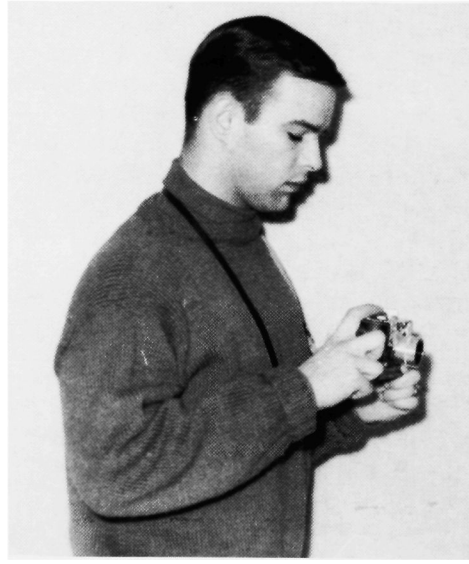

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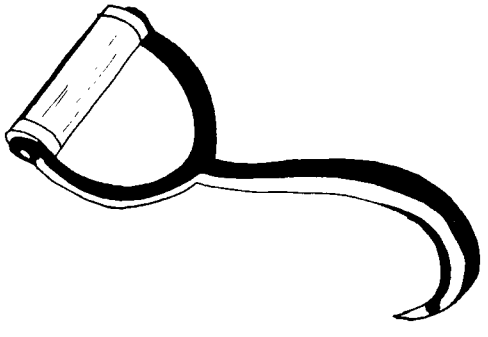


The University Of Maine Forestry – Wildlife Alumni Association

by ROBERT I. ASHMAN

For many years some of the alumni, including members of the forestry teaching staff at the University, had been interested in forming an association and in 1950 at the national meeting of the Society of American Foresters in Washington, D.C., Maine Alumni and faculty met at dinner and discussed the matter. For several reasons nothing concrete was accomplished.

The story of our present association is best told by quoting from the circular letter sent out to alumni whose addresses we knew:

University of Maine Forestry
Wildlife Alumni Association Organized

"On Friday, March 13, at the winter meeting of the New England Section, Society of American Foresters, sixty University of Maine forestry alumni met at breakfast.

"At the meeting the alumni decided to form an association which would include all forestry and wildlife graduates and all former students who are interested. Mr. Nutting appointed a steering committee from among those attending.

"The committee was charged with the task of taking such action as might be necessary for the creation and organization of a Forestry and Wildlife Alumni Association.

"In an informal way the Department, and more recently the School, have attempted to keep in touch with alumni, but information is by no means complete. We are proud of our alumni. In competition with forestry and wildlife graduates from schools all over our country they have become leaders in national, state, and private organizations and in forestry and wildlife education. Others have used the broad forestry or wildlife curriculum as a stepping stone to careers in engineering, law, medicine, teaching, and business.

"We feel that the Association will strengthen ties among the alumni, the School of Forestry, and the University of Maine. There is a mutual obligation. Alumni should assist in every way possible the development and improvement of the School of Forestry and the school should keep alumni informed of affairs in the School and circulate news of the activities of members.

"The ideas of the steering committee were discussed with President Elliott, Dean W. C. Libby of Agriculture, and T. Russell Woolley, Executive Director of the Alumni Association. They gave us enthusiastic backing.

"The steering committee then drew up a set of by-laws and nominated a slate of officers and members of the advisory council.

"These were presented by Austin Wilkins to the alumni attending the annual Forestry-Wildlife supper on April 15 and were approved.

Officers for the year are as follows:

President R. I. Ashman, Augusta
First Vice President Malcolm W. Coulter, Orono
Second Vice President G. S. Wheeler, Laconia, N.H.
Secretary-Treasurer Fred E. Holt, Augusta

Members of the Advisory Council:

David H. Hanaburgh, '32, Buchanan, N. Y.
Kenneth W. Hodgdon, '41, Augusta
John T. Maines, '40, Bangor
A. D. Nutting, '27, Orono
L. C. Rawson, '29, Boston
Ronald T. Speers, '49, Augusta
Austin H. Wilkins, '26, Augusta
Morris R. Wing, '42, Chisholm

"The officers and members of the Advisory Council constitute the Executive Committee."

There was general agreement that to get the Association off to a good start a newsletter on a more ambitious scale than formerly should go out to all alumni. The first pre-requisite was a complete revision of our alumni mailing list. This had already been started. Bot Elliott, 1950, of the St. Regis Paper Company, Jacksonville, Florida, had several hundred attractive New Year's cards prepared early last winter and 300 were mailed before January 1. Returns were gratifying but by no means complete. However, we were able to correct some addresses and the new University Alumni Directory was a great help in completing our mailing list.

The idea of a newsletter is not new. In the early thirties when our alumni body was still comparatively small, mimeographed newsletters were issued at intervals. Covers showing woodland scenes were blueprinted on our new machine by C.W.L. Chapman, its custodian. Later alumni news was included in the reactivated Maine Forester, but few alumni were interested at the price which it was necessary to charge.

Newsletters were issued from time to time in recent years, but because of a better mailing list, as mentioned above, assistance by the General Alumni Association, and especially the cooperation of the Maine Forest Service, we feel that we have done better this time. It should be understood, however, that the letter was really made by the alumni who sent in news items and contributions to cover the cost of publication and mailing of 940 copies.

To you undergraduates: There are many interesting case histories in the newsletter and you may want to read it through. You will see what our alumni are doing. Most of them enjoy their work and they are doing sufficiently well financially to send their children to college - if they want to go. You will also note that many with forestry and wildlife training have gone into other occupations and made good.

Naturally, in any of these letters, a great deal is left unsaid. Many of our alumni, either before or after entering Maine, were in the armed forces and in most cases they do not mention their military service. Of the class graduating in 1943 25 percent were killed in action and losses were heavy in all classes whose members were of military age. Many others were wounded and many, including some of the wounded, were prisoners of war. A volume describing the experiences of our veterans would make very interesting reading.

Many of our alumni have attained to positions of prominence in our own and other professions. The work of others is largely unpublicized and their exploits unsung, but they have been doing the work of the world nevertheless. My own opinion is that men and women devoting their lives to the wise use of our natural resources, inside or outside the profession, are the salt of the earth. Men with the training given in the forestry curricula, because they realize the restrictions imposed by economics on conservation activities, are more capable of advancing the movement than are untrained laymen.

We know that you are all interested in the geographical distribution of our alumni. Of the approximately 300 listed in our newsletter, all of whom replied to our questionnaire or were reported by other alumni, distribution is as follows: Maine leads with 94 and, strangely enough, we didn't have complete returns from alumni working in the state; then came California, New Hampshire, New Jersey, Oregon, Pennsylvania, and Virginia (mostly employed in D.C.) in a six-way tie. Washington, Michigan, Georgia, Vermont and Connecticut in a five-way tie; West Virginia, Wisconsin, Florida and Colorado; North Carolina; Texas, Ohio, Illinois; Rhode Island, Maryland, Kentucky, Alaska; In-

diana, North Dakota, South Dakota, Idaho, Montana, Wyoming; Iowa, Kansas, Arkansas, Arizona; Okinawa (part-time teacher, University of Md. Pacific), Malaya; Manitoba. Thirty-four states are represented.

Sixteen men are listed who were awarded graduate degrees in Wildlife Conservation at Maine, but did undergraduate work elsewhere. New York and Maine lead in the number of these men employed. Then follow Alaska, California, Illinois, Michigan, New Hampshire, North Carolina, Rhode Island and Vermont. One is working in the province of New Brunswick and another in Ottawa, Canada.

As a result of our newsletter, additional information is trickling in. In our next issue we hope to have a nearly complete list of alumni with addresses and the jobs on which they are working. We will include a digest of suggestions listed under the questionnaire heading "I believe this association can be most effective by:"

Because of the far-flung distribution of our alumni, a newsletter is the only effective means of reaching everybody. However, there are other methods some of which have been in use since the first class was graduated in 1906. One of these is through personal correspondence with one or more members of the teaching staff. If the man receiving the letter will note any new information on the file card in the office, it will become a matter of record. In replying to your letter he will tell you what is new in the School. Now that you have an Alumni Association you can, as you have been doing, address your correspondence to the president, secretary, or editor of the newsletter. One of the officers, of course, may be the editor, as at present.

Another is a personal call at the office for a chat when you are on campus. Be sure that someone notes any change in status on your file card.

It has long been a custom of the department, and later of the school, to hold alumni breakfasts or dinners at professional meetings. Students are invited to attend and will get acquainted with a few alumni and learn to recognize others by sight. Naturally, except for the regional section meetings, attendance is small and usually limited to those who live nearby or have adequate funds for travel. However, at least one member of the teaching staff or an officer of the Association or Advisory Council will be present at professional forestry and wildlife meetings.

Another possibility which the writer has been considering is the holding of local meetings. This has also been suggested by alumni in New Jersey. The Regional Forester of the U. S. Forest Service in Portland, Oregon has offered to smooth the way to contacts with alumni in the Northwest. This would, of course, be feasible only if some officer or member of the Advisory Council were taking a trip in the region.

Now, what can students in the School of Forestry do? My idea is that they can help by organizing during the senior year with a secretary who is willing to keep in touch with members after graduations. Granted such organizations tend to fall apart after a few years, they can be of great help between graduation and the period when nearly everybody has settled down into marriage and a more or less permanent job. Then we can keep in touch with you.

Another suggestion is that seniors supply the Association with a complete class list with addresses and, when known, the job on which you will be working after graduation. If you will be unemployed, please so state. This information will be of value to all of us.

Good luck!

XI SIGMA PI

by FREDERICK BURNETT

Xi Sigma Pi is the national forestry honor fraternity. The organization started as a local fraternity at the University of Washington on November 24, 1908 and became a national fraternity in 1915. Gamma chapter at the University of Maine, the third chapter to be added to the fraternity was founded in 1917.

More chapters are continually being added to the fraternity at the various forestry schools through out the country. Presently there are 23 active chapters and one inactive chapter. Three chapters have been added recently and one is presently in the process of being added. Chapters may be established at any institution of learning offering a complete curriculum in forestry provided that this curriculum is equivalent to the usual curriculum in forestry.

The objectives of Xi Sigma Pi "are to secure and maintain a high level of scholarship in forestry education, to work for the upbuilding of forestry and to promote fraternal relations among earnest workers engaged in forestry activities."

The fraternity has helped link together student and faculty members with a common interest in forestry not only at an individual university level but it has joined foresters from all parts of the country together. The fraternity honors the students who do well scholastically and show an interest in forestry. In addition the members must also have a character and personality which is desirable for a professional career in forestry or wildlife. The fraternity hopes to stimulate interest in forestry and to stimulate closer relations between students and also between students and faculty.

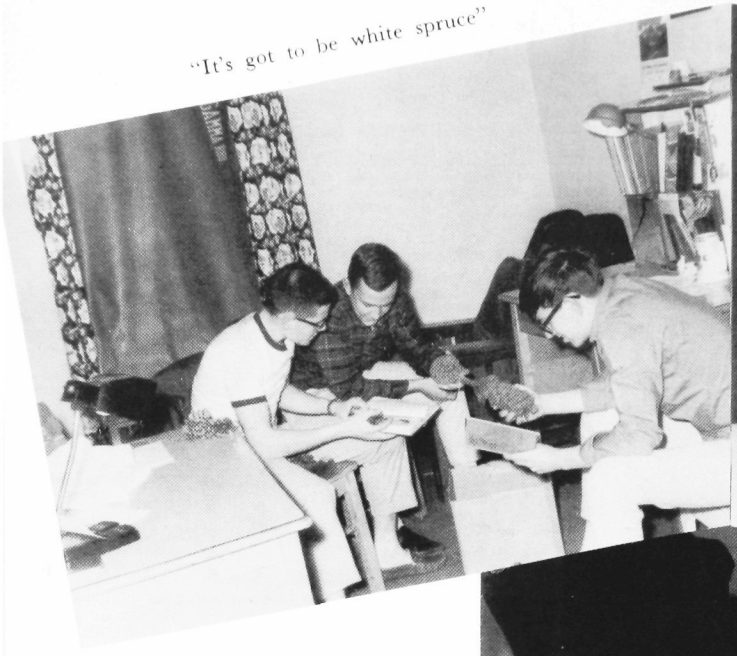
The membership of the fraternity is made up of student members, graduate students and faculty members in forestry and wildlife. The student to be eligible for membership must be in the upper twenty-five percent of his class scholastically and have completed at least two and one half years in the forestry or wildlife curriculum. He must also have ambition, interest, personality and a good character. Scholastic standing in itself is not enough.

Gamma Chapter has two major activities during the academic year. The annual Christmas Tree Sale and the annual Forestry-Wildlife Banquet. The members of Xi Sigma Pi were given permission to cut trees on the Penobscot Development Companies land in Milford and on the University of Maine Forest. This year's Christmas Tree Sale was the best we have had. The number of trees sold was nearly double that of previous years.

The annual banquet in the spring brings all forestry and wildlife students and the faculty together. Each year there is a nationally known speaker in either forestry or wildlife. Awards are presented to outstanding freshmen, sophomores and juniors. The banquet has a large attendance each year.

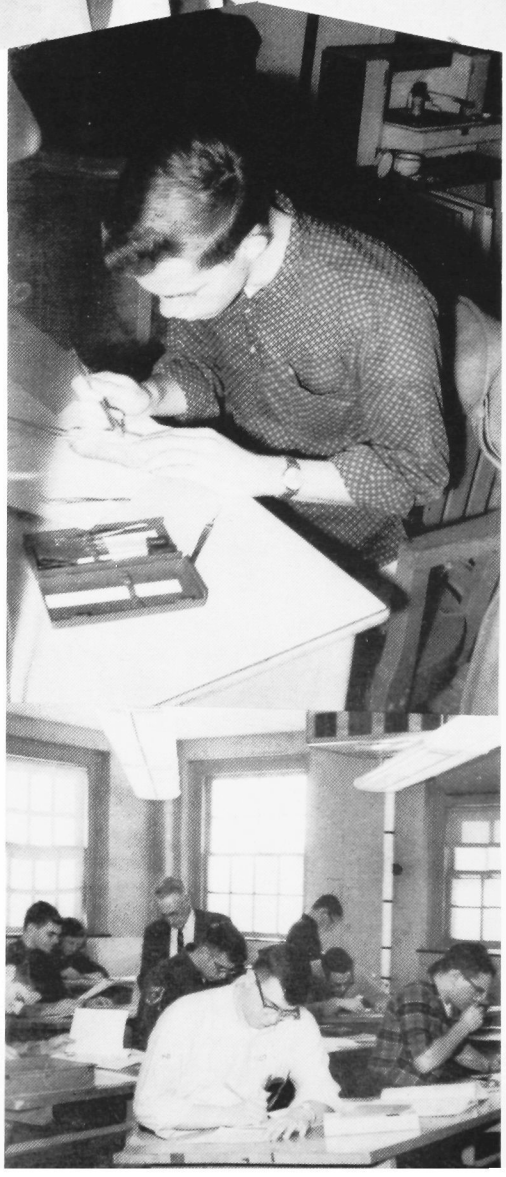
The officers of Xi Sigma Pi are elected the last meeting of the school year. This year's officers are Forester, Neil Hanson; Associate Forester, Donald Archer; Secretary-Fiscal Agent, Fred Burnett; and Ranger, Richard Riding.

Who Studies?



"It's got to be white spruce"

"Wait 'til he sees this"



"I think it was heartburn"

"Another hour?"

FORESTRY WIVES' CLUB

by MRS. MARILYN COLLOM

The University of Maine Forestry Wives' Club consists of wives whose husbands are either students or faculty members in the School of Forestry. The club has been a member of the National Forestry Student Wives' Association for the past two years. In the past our programs have been selected with the purpose of acquainting the wives with the field of forestry and pointing out their part in this vast field, but because of the lack of student wives this year, we have tended toward social meetings and meetings which we thought would be of interest to those who did attend.

In November, 1964 we began the year with a get-acquainted meeting. In December we had our Christmas meeting with Mrs. Frank Beyer demonstrating how to make "scrubbers" for Christmas gifts. Our January meeting included the election of officers for the spring semester as well as a wonderful presentation by Mrs. Peggy Schomaker entitled "My Life Among the Natives." Dr. Schomaker showed slides and told of some of her adventures while living on a Firestone Rubber Plantation in Liberia, West Africa. In February the meeting was held in the home of Mrs. Dorothy Griffin with Mrs. Gregory Baker presenting the program which was entitled: "Dye Pots, Wool Batts and Passementerie." In March the meeting was held at the home of Mrs. A. D. Nutting Mrs. Nutting showed slides and related some of her experiences while in Mexico.

During the month of April we plan to join our husbands and attend the Annual Forestry Banquet. In May we will bring the year to a close with the election of officers and game night.

This year we have approximately 20 active members and 15 honorary members. The elected officers are: President—Marilyn Collom; Vice President—Heather Wimble; Secretary-Treasurer—Peggy Daniels; Hostess Chairman—Donna Burnett; Program Chairman—Paula Hanson; Faculty Advisor —Mrs. A. D. Nutting.

The Forestry Wives' Club has been an active club on campus for many years now, and we hope it will continue to be so in the years to come. To do this we need more wives who are willing to contribute some new ideas and a small amount of effort. We urge all active members to seek out and invite new members to our club. It is with regret, but with our best wishes, that we bid our senior wives farewell.

MAINE FORESTRY CLUB

by MARSHALL ASHLEY, *President*

The Maine Forestry Club has seen another year; a year of interesting speakers and good progress by our woodsmen's team.

The woodsmen's team did excellent in the two contests in which it participated this year. The "A" team placed second in the competition at West Point, New York, losing first place by a very narrow margin. At the University of New Brunswick the boys did even better. They won the cross cut and bucksaw events and returned home possessor of a trophy, which they can keep if they win these events again for the next two years. Good luck boys!

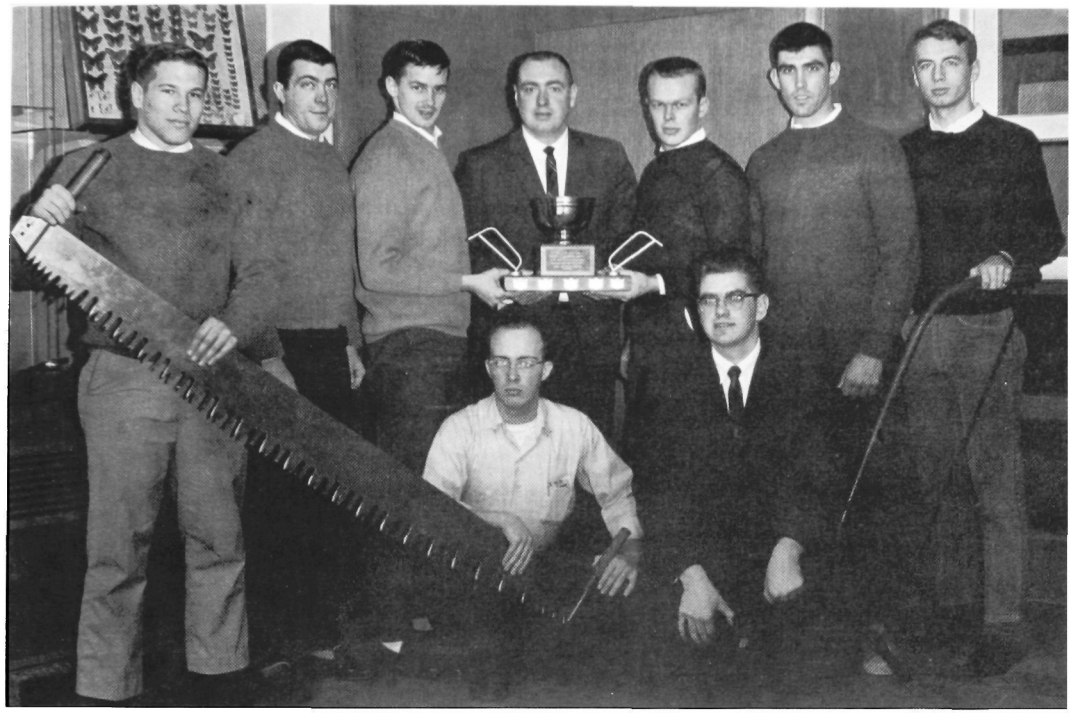
This year saw many interesting speakers on our program. John Maines, Vice President of Woodlands, of the Great Northern Paper Company and Chairman of the New England Section of the Society of American Foresters spoke on the importance of the S. A. F. to us as foresters. Hal Klaber of Scott Paper Company spoke on the management of Scott lands. Director Nutting spoke upon one of the most newsworthy forestry topics of the year, the Allagash. Dr. Shoemacker of our forestry staff spoke on his experiences at a rubber plantation in Liberia. Austin Wilkens, State Forest Commissioner, spoke on the State Forest Service organization. Dr. Harold Young spoke on the experiences which he had while in Norway last year. Cliff Swensen of Pingree Timberlands spoke on the management of Pingree lands. Mr. Swensen said that he plans to prune yellow birch to obtain veneer quality logs; Believable? Mr. Willard Whyte of the Maine Forest Service presented certificates to Prof. Randall's Hotshot crew at another meeting.

Newly elected officers for the year are: Gary Morse, President; Jim Robbins, Vice President; Dave Reynolds, Treasurer; and Jim Conners, Secretary.

In closing, I wish to thank all those who supported the Forestry Club this past year. I hope that the future years will be as enjoyable as this one was.

THE WOODSMEN'S TEAM

by RICHARD T. RIDING



Front row left to right: Jim Collom (Chaperone), Lee Stover (Alt.)
Back row: Mike Dunn, Jim May, Bill Hooper (Capt.), Dr. Corcoran (Advisor), Dick Riding (Capt.), Lee Whitely, Rick Phinney.

Under the guidance of Dr. Corcoran, faculty advisor, the Woodsmen's Team has expanded its activities to include three meets, The Annual Intercollegiate Woodsmen's Weekend, The Logger's Jamboree—at the University of Massachusetts, and the Annual International Intercollegiate Woodsmen's Meet—at the University of New Brunswick.

Last spring the Annual Intercollegiate Woodsmen's Weekend, a competition which started in 1947, was held at West Point Military Academy in West Point, New York. It was a record for participation as nine schools entered sixteen teams in the competition. The University of Maine, represented by two teams, placed fourth and tenth in the overall competition. The previous year Maine held down two of the last three places so the squad's improvement is outstanding. Both teams were particularly strong in felling, buck sawing, and cross cut sawing. They also showed potential in splitting, pack board racing, and canoeing. Taditionally the competition consists of fourteen events including bait casting, fly casting, log rolling, pulp throwing, fire building, felling, cross cut sawing, buck sawing, speed chopping, splitting, pack board race, one man canoe, two man canoe, and canoe portage.

The two teams at West Point included:

Bill Hooper (Capt.)
Jim Davenport
Mike Dunn
Rick Phinney
Walt Seaha
Lee Whitely

Gary Morse (Capt.)
Alan Chandler
Jim Collom
Leigh Hoar
Lee Stover
Aaron Whitcomb

Dick Riding (Mgr.)

Maine exhibited its growing potential with a second place finish at the Logger's Jamboree at the University of Massachusetts last fall. A second place finish, by only four hundreths of a minute, in the pack board race cost Maine the championship and a trophy. Seven teams were competing for this trophy. Of eleven events Maine placed first in cross cut sawing, buck sawing, speed chopping, and pulp throwing for distance. The other events were log rolling, pulp throwing for accuracy, scoot loading, fire building, splitting, and a pack board race.

The following team members went to the University of Massachusetts:

Bill Hooper (Capt.)
Jim May
Rick Phinney
Lee Whitely
Dick Riding (Alt.)

Another competition staged last fall was the Second Annual International Intercollegiate Woodsmen's Meet at the University of New Brunswick in Fredriction, New Brunswick. Although the two teams representing the University of Maine were plagued by bad luck as ropes came off twitching logs and speed chopping axes broke under the strain of competition, they managed to snag fourth and sixth place. The "A" Team won the combined cross cut and buck sawing events and they were rewarded for their efforts by a trophy donated by Munnson Limited of Canada. The canoeing event, dominated by the University of Maine in the previous contest, was called off. Gary Morse and Carl Weber, the first team to attempt crossing the Saint John River, capsized in rough water on their return trip and the river was judged too dangerous for further attempts and the event was cancelled.

The team members who traveled to Canada included:

Bill Hooper Co-Capt.
Dick Riding Co-Capt.
Mike Dunn
Jim May
Rick Phinney
Lee Whitely

Gary Morse Capt.
Gordon Bell
Dave Edelman
Don Poulson
Carl Weber
Joe Wiley

Alternates
Bill Boehner
Lee Stover

Preparation for and participation in these meets requires the support of many people. The Woodsmen's Team appreciates the encouragement, efforts, and support of Director Nutting, Dr. Corcoran, Mr. Taylor, Prof. Beyer, Prof. Plummer, and the entire Forestry Club.

This spring the Woodsmen's Team will again enter the Intercollegiate Woodsmen's Weekend Competition. They will travel to Nichols College in Webster, Massachusetts to see if they can kindle a hot enough fire to snap Paul Smith College's eight year winning streak.

"Well, I'm ready to start the race"

"I hope this one goes further"

"I still think a gas stove is better"

"Now all we need is a canoe"

"The log, not your leg!"

"Now pull on your side"