15c and 18c Kimono Flannels for 11c

Full assortment, light and dark colors, many with neat border designs that greatly improve upon the beauty of a kimono. The values stated are exact and are now on sale at, yard 11c

Ladies' and Children's 25c Fleece-Lined Hose 15c

Our own brand upon them is a guarantee of their reliability. The children's line is heavily ribbed, extra elastic; ladies' hose are double sole, double heel and toe; all sizes; now, pair 15c

Chances for Savings THAT ARE Worth While

Apron Ginghams 5c

A multitude of patterns in blue and brown checks; everyone knows that this is a very special price and is rarely ever offered. Good time to stock up; yard 5c

9c Calicoes at . . . 5c

These are a new order, just arrived. Our first lot did not last long, nor will these. The assortment is varied and we do not expect to have many left at, yard 5c

Wonderful Sale Men's Overcoats $18 and $20 Values for.. $12.50

Now, men, if there ever was a time and an opportunity for buying an overcoat, that time and opportunity awaits you. The weather is certainly extreme enough and the price is from $5 to $7.50 lower than you ever expected to pay. Our fame for selling good overcoats for little money at this time of the year is the pride of Missoula, and is watched for and waited for by the most discerning shoppers in the town. The time has again arrived, and we bid you welcome to choose from a great variety of patterns of good, full length coats, with all the good points of a $20 grade of merchandise. Our big Higgins avenue windows are resplendent in good bargains this week, and this is only one of them.
Good overcoats now cost you only $12.50

Unprecedented Sale Boys' Overcoats $6.50 and $12.50 Values.... $3.98

This is the lowest price ever offered in Missoula on overcoats for boys between the ages of 5 and 16 years. Best of all, the greatest quantity of these coats that we now offer at this unheard of price, is for boys at the age of 9 years and upward. The quality and workmanship of these coats are in no wise of a questionable character and in all sincerity there is not one but what sells regularly for $6.50 and some for $12 and $12.50. A safe average of the values of these coats is $9, which is considerably more than twice the special price. You may not see how we can make such an offer, but the least you can afford to do is to investigate. This is no exaggeration of value, but a bona fide bargain which we sincerely trust to your inspection $3.98

Men's Heavy Flannelette Shirts $1.00

We recommend these shirts at this time of season rather than lighter golf shirts. These are of fancy designs, in plaids and stripes, with a full assortment of colors. Other stores will charge you more but OUR PRICE is $1.00

Men's 75c Flannelette Nightrobes 69c

Made of very good quality of outing flannel, full length and roomy. There is not a thing skimpy about these nightgowns except the present special price. All sizes may be had and you can take your choice of several different colors for only 69c

Boys' Sweater Only 50c

Our boys' sweaters are now bunched in only two groups at attractive prices to close them out quickly. One group contains 75c and $1.00 values from which you may choose for 50c

The other group contains better qualities that sell regularly at $1.25 and $1.50; now only 85c

Dry Footwear for Everybody

Rubber Goods at Extra Special Prices

Specials for Ladies Misses and Children

Women's 2-buckle Arctics $1.50
Women's 3-buckle Arctics $2.00
Women's fleece-lined storm rubbers, pair ..... 85¢
Misses' fleece-lined storm rubbers, pair ..... 70¢
Children's fleece-lined storm rubbers, pair ..... 60¢
Women's storm rubbers ..... 60¢
Misses' 2-buckle Arctics, pair $1.25
Children's 2-buckle Arctics, pair $1.00
Misses' pebble leg rubber boots, pair $1.75

Specials for the Men and Boys

Men's sheepskin lined sox ..... 60¢
Men's 2-buckle Arctics $1.50
Men's 4-buckle Arctics $2.75
Men's cloth storm overshoes, per pair $1.50
Lumbermen's heavy low rubbers, two grades $2, $2.25
Men's extra heavy rolled edge sole rubbers, all duck, 8 inches high, per pair $3.00
Men's all duck, low one buckle rubbers, rolled edge sole, per pair $2.25
Men's "Square Deal" hip boots, best grade rubber, per pair $6.50
Men's snag proof rubber boots, per pair $5.00
Men's "Walrus" short rubber boots $4.00
Men's "Atlas" short rubber boots $3.50
Boys' light short rubber boots $3.00
Boys' "Storm King" high rubber boots $3.25
Youths' "Storm King" high rubber boots $2.50

Why Should the Little Ones Have Wet Feet?

We carry complete lines of rubbers and high rubber boots that insures them absolutely from exposure. Prices are very special now. Bring the youngsters in.

Women's $3.75 Mohair Waists Only $1.98

A pretty selection of mohair and nunsveiling waists is offered at this price. Backs and fronts are plaited, button trimmed and all have full-length sleeves. They are regular tailored waists and come in black, navy and brown; values in the lot worth up to $3.75; now $1.98

$7.50 Panama Skirts $3.98

From a rack of high-priced skirts we have picked out an assortment of nobby little walking skirts for little women that we will sell for $3.98. We have several $7.50 values among the lot. Colors are brown and navy, with a few mixed colors thrown in for variety. Think of buying neat little skirts for afternoon dress for only $3.98

Children's Bear Cloth Coats at Cost of Material

All our bearcloth coats for children are priced now to close them out entirely. Some are very close imitation to the grizzly bearskin and may be had now for only $3.75. A few plush velvet coats among the lot at the same price.

All $5.00 bearcloth coats, now $3.75
All $3.75 bearcloth coats, now $2.50

Men's Coat Sweaters

You will have some difficulty in our city in getting coat sweaters for men, at least, as fine as these. We have just received a brand new shipment that enables us to show complete sizes and colors at from ..... $3.50 to $6.00

Yarns Yarns

An enormous stock of yarns is responsible for these extremely low prices. In fact, we have an overstock, but we also have a wonderful variety. It would be safe to say that scarcely any shade is missing, while the staple colors abound. The brands are the best on the market so that these very special prices afford an excellent opportunity for considerable buying:

12 1-2c golden fleece Germantown, skein .... 9¢
12 1-2c Persian zephyr ..... 9¢
10c Angora Shetland floss, skein ..... 7¢
10c Berlin Saxony, skein ..... 7¢

Lace Curtain Specials--3d Floor

NOTTINGHAM CURTAINS.

All full width—2 1-2, 3, and 3 1-4 yards long.
75c Nottinghams, special at, pair ..... 53¢
$1.50 and $1.75 Nottinghams, special at, pair ..... 98¢
$2.00, $2.25 and $2.50 Nottinghams, special at, pair $1.50

OTHER CURTAINS AT HALF PRICE

One pair $4.50 novelty curtains, ecru, now, pair $2.25
Two pairs $6.00 novelty curtains, ecru, now, pair $3.00
Two pairs $6.00 mission curtains, white, now, pair $3.00
One pair $7.50 novelty curtains, white, now, pair $3.75
Two pairs $7.50 battenberg curtains, white, now, pair $3.75
One pair $8.00 novelty curtains, ecru, now, pair $4.00
One pair $12.00 Marie Antoinette curtains, now, pair $6.00
One pair $12.00 Brussels net curtains, now, pair $6.00
Two pairs $18.00 Marie Antoinette curtains, ecru, now, pair $9.00

Almost ½ Price — Closing Out Sale of FURS—FURS — Almost ½ Price

Below we quote the lowest prices ever yet quoted on nice scarfs and neckpieces during the whole winter. Sale includes handsome neckpieces and scarfs, long four-in-hand throws and rich trimmed cape effects, also single muffs as well as complete sets.

$3.75 coney neckpiece $1.75
$5 coney scarf $2.89
$5 four-in-hand $3.50
$9 heavy cape scarf $5.75
$6.50 imitation ermine scarfs, each $3.75
$7.50 heavy cape scarf $4.50

Women's Underwear Underpriced

75c union suits, fleeced lined, natural gray color; all sizes; special priced at ..... 69¢

Odd lots of 35c and 50c two-piece suits, in natural and peeler; good winter weight; garment .. 25¢

$1.50 white merino two-piece suits, one of the best grades made; now on sale, garment $1.00

Women's Handkerchief Special

A large variety of lawn, cambric, cross-bar Swisses and fancy colored checks and figures, hemstitched borders, in fact, a general line of genuine 10c handkerchiefs, now on sale for your choice at ..... 4 for 25¢

Another large variety of embroidery edge and hemstitched handkerchiefs, with embroidery, cross-bar and beaded designs; regular 25c and 35c qualities, now on sale for the first time; your choice of any ..... 3 for 50¢

D. J. DONOHUE CO.

FOREST MANAGEMENT IS EXPLAINED BY CHIEF OF SILVICULTURE COOPER

Manner in Which Affairs of Government Timber Lands Are Conducted Is Subject of Lecture Before Students of University of Montana---Third of Series.

The third in the series of popular lectures by members of the forestry staff was given at the regular official convocation of the state university yesterday at 11:30 o'clock. A. W. Cooper, chief of silviculture, was the lecturer, and his subject was "The Management of National Forest Timber Lands, Estimates and Working Plans." He spoke as follows:

Forest management, as its name implies, is that phase of forest work dealing with the management of forestry. In this sense, it is the practice of forestry as distinguished from the investigative side of the work. We have taken from the European foresters a number of names for the different aspects of forest work, which are often confusing, and seldom intelligible, to the layman. For example the two most commonly used are the words "Silvics" and "Silviculture." Silvics is the science which deals with the growth and propogation of forests. In considers trees largely in their relation to one another, and to the forest as a whole. Silviculture is the practice of the principles of silvics, and may be compared with agriculture, since it denotes the raising and handling of forest crops, just as the latter denotes the raising and handling of field crops. Forest management and silviculture are thus almost synonymous. Silviculture, however, includes the planting and establishment of new forests, while in this country management has been somewhat narrowed in its meaning and is used to cover the handling of already existing forests, including their improvement and the marketing of the forest crop.

Forest management naturally differentiates itself into two parts—the preparation of plans of management and the carrying out of these plans, as represented by the sale, protection and actual removal of the timber. It is the purpose of this lecture to deal merely with the former.

A plan of management for any forest is commonly termed a working plan. It may be either very detailed and extensive in character, or broad and comprehensive. Generally speaking, it includes an estimate of the timber on the forest, a classification of the forest area by types of different classes of timber growth, a determination of the rate of growth of the several tree species, and from that, of the forest as a whole; a timber map showing the location and accessibility of the different types of forest, and a careful plan for marking the timber, removing it, and protecting the forest from fire, insect and fungus damage—in brief, a complete policy for managing the forest in such a way that the yearly cut will not exceed the yearly growth, and that cutting may tend to improve the character of the forest itself, keeping in mind at the same time the practical aspects, of removing the timber which are determined by lumbering.

Working plans for national forests in the United States must necessarily be very general at the outset, since a very large area has been placed under management at short notice, and the means for handling it are at best limited. Furthermore, the study and practice of forestry in this country are both so recent that we are just beginning to learn the characteristics of our forest trees and what can be done with the forests themselves.

On the national forests, the first and most essential step has been to obtain, as rapidly as possible, rough estimates of the actual quantity of timber on each forest, in order to base upon these estimates some tentative policy for limiting the amount of timber sold within the bounds of safety, i. e., the object has been to secure such information as was necessary to avoid making inroads on the growing capital of the forest. Along with this there has been a continued effort to improve the methods of removing timber where timber is sold—the object being always to secure an adequate new growth, by natural means, of the more valuable tree species.

The process of estimating and securing reliable estimates on the different forests is consequently the initial step in the plan of management, and the work is so fundamental and important that some of the methods of obtaining estimates are worth considering. Generally speaking, estimates fall into two classes—those that are general and those that are more detailed, although there are all graduations between these. The estimates for national forests have necessarily been of the first class, since it was impossible to obtain for immediate use a very detailed estimate for perhaps 1,000,000 acres of forest land, involving 8,000,000,000 or 10,000,000,000 feet of merchantable timber. The methods of obtaining these estimates have in consequence been in most cases very rough, oftentimes an entire watershed has been estimated ocularly by a man riding through once on horseback. It will readily be understood that estimates of this sort are often more deserving of the name of guesses than estimates, and their value has been chiefly in the facts that they have been conservative and have furnished a starting point for more careful work.

The usual method of obtaining an estimate for a forest, where it is desired to have the estimate within reasonable bounds of accuracy, is by a rough reconnaissance of the principal bodies of timber. The estimator follows up some creek or stream, stopping every now and then to count the trees, say on a circle of one-quarter of an acre. He estimates the amount of timber in these sample plots, and from these obtains a sample acre for the different types or classes of stand. From his map he then roughly estimates the area covered by each type on the watershed, and by applying the average acre to the whole area of each type, arrives at a fairly good estimate of the amount of timber on the watershed. On some cases, where the portion of the area has already been carefully estimated, it is of great assistance, as it provides a comparison or check upon the estimator.

There are almost as many ways of estimating timber as there are estimators, but the greater part of the variation is in the minor details. One man simply counts the trees of each diameter, and from a volume table obtains the contents in board feet, while another may estimate the number of logs in each tree, and from this determine its contents. Estimates are often made by forties, i. e., the 40-acre subdivisions of mile-square sections. The estimator starts from a known point and paces the distance across the 40, tallying or estimating the trees as he goes. He may do this on a strip of a given width, say four rods, and thus obtain a percentage of the 40, from which he figures the entire stand on the 40 acres. Many old cruisers, however, estimate largely from experience. After pacing across a 40 or quarter-section once or twice, they say they have "seen" so much timber, and from this has come the expression common in many parts of the country of terming timber cruisers or estimators "land-lookers," and the process itself "looking."

The forest service has, from the beginning, used for purposes of careful estimate what is known as the strip system. By this method all trees on a strip are actually measured by calipers, for their diameters, and tallied according to diameter and species. The usual method of doing this work is by means of three or four-men crews. In the case of the three-men crew, one man runs the compass course, drags the chain for measuring the distance, and tallies the trees, while the other two measure the diameter of each tree in a strip 33 feet on each side of the chain. The area is thus actually measured off, and 10 chains of 66 feet, with a strip of 66 feet in width are equivalent to an acre. Usually the tract of land to be estimated in this way is gridironed, i. e., a crew starts from a fixed station on one border of the tract and runs a line directly across it, returning on a line parallel to the first, and one-quarter or one-half mile distant from the first line. The distance between these parallel strips varies according to the care that is considered advisable in making the estimate. In this way, from 2½ to 5 per cent of the timbered area may be actually measured.

A great advantage of the strip system is that it also provides a basis for a map, since all streams, roads and other prominent features of the topography are noted, together with their distance from the point of departure. Changes of type in a forest, and the boundary of each, may also be obtained in this way. After the completion of the field work, an average acre is calculated for each type. This shows the number of trees for each diameter of each species, and the contents in board feet are obtained from volume tables. The areas of each type are usually plotted on a map, and the average acre for each applied to the whole. This method of estimating is considered one of the most accurate in use. It has, however, its distinct disadvantages, as its accuracy depends to some extent on the uniform character of the forest. It is entirely possible, for example, for the strips to run through the best timber, leaving it between, areas where the stand is smaller, or open areas due to burns or other causes. When this is the case, the average acre is really above the average, and an over-estimate results, and the strip system is most accurate on extensive areas unless very carefully used.

Another good method of estimating is by taking sample areas, carefully selected throughout the forest, measuring the trees both for height and diameter and computing the stand on the entire area from these sample lots.

I have spoken several times of volume tables, and perhaps a word of explanation as to the character of these will not be out of place. Volume tables are usually made from the actual measurement or "scaling" of a large number of felled trees of different diameters. From these an average is obtained for each diameter and the whole constitutes a volume table. Some tables show the contents of trees for different heights, as well as for different diameters, and are by far more accurate. It will be readily seen that the accuracy of a volume table is of the greatest importance in accurate estimating, where volume tables are used. In many cases a timber estimator constructs a rough set of volume tables for use on the particular tract he is to estimate. Such tables, though rough, are usually very good in the locality for which they are made.

Summed up briefly, estimating is, after all, largely a matter of judgment, and no purely mechanical and at the same time practical method for computing the amount of timber in any stand, that will entirely eliminate personal judgment can be devised. The strip system, already described, comes perhaps as near this as any, but a merely mechanical use of this, as of any other system, will often lead to a large per cent of error. In estimating areas where it is proposed to sell the timber the estimate is almost always very detailed, and is usually obtained by the strip method.

As I have already stated, this estimate is the foundation of any working plan. Working plans are, however, of two sorts—general working plans covering an entire forest or portion of a forest and working plans for specific sale areas. The latter include an estimate map and a plan for marking the timber, providing for close utilization and regulations governing the sale, and are, properly speaking, a part of the regular timber sale work.

The large general working plans are the basis for a timber sale policy for any given forest, portion of a forest or group of forests. It is the aim of the forest service to obtain as rapidly as possible complete and rather detailed working plans for all of the national forests. Before this can be done, however, much information will have to be collected and a large amount of field work undertaken. In the meantime a sale policy is established for every forest, which is based on the estimate for that forest and the estimated present and future demand for different classes of material in the market to which the forest is tributary. This is, perhaps, the simplest or roughest sort of working plan, and sonsists only of a rough estimate upon which is based a restriction upon the annual cut and certain minimum prices upon different classes of material. Where, however, the local demand is already great and the supply on the national forest is limited, more careful plans have already been made. The estimate is made more detailed, the annual cut strictly limited and, in some instances, sales to all but the local market discouraged.

In restricting the amount of timber to be cut from any forest or group of forests, it is necessary to know two things: First, the stand of timber now on the forest, which may be termed the interest on the capital stock. A conservative business man will always avoid, if possible, entrenching his capital, and will, so far as he is able, increase it. In just the same way a conservative forest policy avoids cutting into the capital stock and confines itself to the interest, which is represented by the annual increase through growth. Such a forest policy also goes a step further, and aims to increase the growing stock by improving the forest, so that the rate of growth is increased, and by the establishment, either naturally or artificially, of new forest areas. An accurate knowledge of the rate of growth of any forest must be based upon a careful study of the individual stands and types which compose it, and upon a series of measurements from which the annual growth of each species can be accurately determined.

The national forests have not, however, been under forest management for a long enough period to have anything like the necessary data on which to base an estimate. For the present, therefore, it is assumed that the annual rate of growth, or, in other words, the interest on the capital stock is 1 per cent. This is, of course, a very conservative figure for most localities. The only region in which, so far as I know, a careful study has been made of the rate of growth for an entire region, is in the spruce timber of Maine. Figures obtained there show that the rate of growth was 3 per cent, i. e., that over the entire forest the stand increased 3 per cent in volume annually from growth. This amount can probably be greatly increased, since thrifty, well-managed stands of timber grow more rapidly, while in old, mature and over-mature stands the increase is largely offset by the deterioration of the mature trees. This is the condition usually found in the virgin forest, and the average virgin timber is, from the forester's standpoint, an uneconomic affair, since, as it stands, it is practically unproductive. In handling such a forest the first step is to remove the mature and overmature trees, or make what is termed an improvement cutting.

From what has been said, it will be seen that future management on the national forests must aim first to secure accurate data with regard to the supply of timber now on hand, the rate at which the forests are increasing by growth, and the best methods of increasing the rate of growth. As this information is obtained, it will be possible to establish a more definite and well defined forest policy, and this in turn will be applied, in its details, not so much to an entire forest, as to specific stands of timber.

Along with this improvement in management will also go studies to determine what character of timber is best suited, both from the forester's and from the local market standpoint, to each locality; also what class of material it will be most desirable to raise in given localities. The management of any forest will then shape itself along such lines as to meet the market demand within the limits of its capacity for producing. For this purpose, forests will be divided into working units, a working unit being determined largely by the natural topographical features of the region, the uniform character of the timber and the uniformity of market conditions which bear directly on the management of the forest. For each of these working units we will have a working plan. This plan may, in some cases, be but a portion of a larger working plan which may embrace an entire group of forests, all of which supply the same market.

As a concrete illustration of this, we may have a certain locality where the chief demand is for railroad ties, and where the class of timber growing there is well suited for railroad ties. In such a locality we shall eventually seek to grow this class of material chiefly, cutting the timber when it reaches tie size on some system that will provide for a continuous tie supply. This, in technical language, will mean utilizing the timber on a shorter rotation, rotation meaning the length of time it takes to raise trees from the seedling to the time of marketing them, or the length of time it takes to cut over the entire area included in a working plan before starting to cut it over again. In other localities the aim of the management may be to raise saw timber.

This may all appear to be looking a long way into the future, but no plans of management for the present can be of any lasting value unless we keep the future in mind, for to do this is the essence of forest management.

Much that I have outlined will, of necessity, come about very slowly, for any forest policy must, of necessity, be shaped, to a large degree, by market conditions, and these, like forest management itself, are in a formative period. Much also must be learned before we can shape our ends intelligently, and the gaining of this knowledge must form a, by no means insignificant, portion of the work of the forest system.

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