

D. T. MASON TELLS HOW MANAGEMENT OF NATIONAL FORESTS IS CONTROLLED

Assistant Chief of Silviculture Explains to Students of the University of Montana How Government Service Uses Timber--An Interesting Talk.

"The Management of National Forest Lands," was the subject of an interesting lecture delivered yesterday morning before the students of the University of Montana by D. T. Mason, assistant chief of silviculture for district No. 1. Mr. Mason spoke as follows:

Nearly every time one picks up a newspaper or magazine these days some article in which the words "forest reserve" play a part meet the eye. While it is true that many of the more progressive writers have come to realize that the title "forest reserve" is no longer correct, as applied to the bodies of land which are now properly termed "national forests," many writers, and assuredly a large part of the general public, still regard these areas as being "forest reserves" in which, according to the common notion, immense bodies of timber are "locked up" from all use. One of the principal objects in changing the designation from "forest reserve" to "national forest" was to give these bodies of land their correct name, for they are not "forest reserves" in the sense that the timber belonging to the United States inside their boundaries is withheld from the use of the general public. The timber and other resources of the forest are, under restrictive regulations, for the conservative use of those who need them. The forests are truly "national forests." They belong to the whole people of the United States, and they are so managed by the forest service as to serve the best interests of the owners and the users, as well as the residents of the forests and the surrounding country.

In accordance with the custom of the federal government, pursued consistently for many years, the home-builder is aided by the forests, from the resources of which free permits are granted for the use of timber and wood. Ranchers, miners, schools, churches and co-operative societies are allowed to take timber from the forests for their own use. There are, of course, necessary restrictions placed upon the classes of persons and organizations to which free use permits for timber are issued, since the whole object in granting free use is to aid in the development of the community by helping those who cannot afford to buy the material they need, and who are actually by their personal efforts making homes and developing the land. Such permits are issued without delay on application to the local forest officer, who must, of course, decide whether or not the applicant is entitled to a permit. The amount which may be taken in this manner in any one year is limited to material valued at not more than \$20 for individuals and \$100 for schools, churches and non-commercial co-operative organizations, unless the circumstances in the particular case are exceptionally and peculiarly deserving. In such cases the supervisor's or district forester's approval must be secured. The method of handling timber obtained in this manner is subject to the same rules that apply to timber sales--that is, green timber must be marked for cutting, the brush must be disposed of properly, etc. During the past year on all of the national forests, approximately 31,000 free use permits were granted for \$168,000 worth of material.

The United States government is one of the largest timber merchants in the world. Many people have objected to the government going into the timber business, on the grounds that such action is overdrawn paternalism. The work of the forest service is of a paternal nature, but no more so than the reclamation service in constructing irrigation works, the treasury department in establishing light houses, or the war department in improving harbors. Much of the work of the forest service is of such a character that it cannot profitably be carried on by any individual, and must, therefore, if undertaken at all, be handled by the people as a whole, through their agents. Since the beneficial effects of forested watersheds in regulating stream flow are felt at a distance from the timber sources, the streams, private owners can scarcely be expected to take any interest in maintaining protection of the forests for the benefit of some other individual miles away. Private individuals and corporations, under the present system of taxing annually the timber crop which may be harvested only once in a century, cannot afford to hold land to be used continuously for a forest. Under the present discouraging system, the timber supply of the country is to be replenished as fast as the timber is used, the work must be done either by the state or federal government, which are not hampered by the methods of taxation now in vogue.

The sale of timber from the national forests is of advantage to both the forest user and the forest owner. If the timber of the forests could not be obtained by sale, if it were really, as many people think--locked up from all use, the government would be helping the big lumber companies to establish monopolies which would tend to crowd the small mill man out of business, and timber which is actually needed would be withheld from use. On the other hand, the owners of the forests, i. e., the whole people of the United States, are benefited by the sales of timber, because the sales are conducted as strictly commercial propositions, and serve to furnish a return to the people for their investment in the national forests. The sales are made and conducted in such a way that the condition of the forest in which they are made is actually improved by the removal of such timber as is cut.

Timber sales are divided into three distinct classes. The first includes sales made by the rangers of small amounts of timber valued at not more than \$50, which are made, approved and conducted with no more delay than is necessary to estimate the timber and mark it for cutting. The next class, including those sales which must be approved by the forest supervisor, involve amounts of timber worth more than \$50, but not more than the super-

visor has been authorized to sell. The third class of sales includes those which involve timber in greater amounts than the supervisor is authorized to sell, and when must be approved by the district forester. If a sale amounts to \$100 or more the timber must be advertised in compliance with the law, for a period of not less than 30 days.

The best way to give a definite idea of what a timber sale is like, is probably to discuss briefly a hypothetical case. Suppose John Brown, on the Bitter Root, owns a small sawmill. Since he has finished cutting all the timber on his own land, he must now go out of the sawmill business, buy privately owned timber or buy timber from the government. He does not care to dispose of his sawmill business; he has only a small amount of capital at his command, and he cannot afford to make the investment necessary to get control of a tract of privately owned timber, even if there is any for sale at a reasonable price, so his next move is to see what the government can do for him. He consults Forest Ranger Smith and finds that there is a body of mature timber on Lost Horse creek in which it is desirable that cutting be done for the sake of improving the stand.

In company with Ranger Smith, Brown goes to look at the Lost Horse creek timber. He finds there a stand that includes many merchantable dead and more or less defective trees which are now quite ripe and have practically stopped growing. There are also many middle-aged trees which are now merchantable, although still growing vigorously. When it is explained that only mature and over-mature trees will be marked for cutting, Brown is somewhat doubtful at first, but he is satisfied when he sees that such trees form the greater part of the merchantable stand.

Brown knows that if the sale is made to him he will be allowed to settle for the timber in small payments in advance of cutting, as the sale goes along, and that no large, long-time investment is necessary. He knows that the timber which he buys will not be subject to taxes, as would timber land which he might secure from a private owner. He has the further great advantage in having the government own the timber until he has actually cut it, so that any fire loss which may come about through accident during the sale will be the loss of the government and not his personal loss. In consideration of these points, national forest timber has a higher relative value to a logger than on patented land.

After due consideration Brown decides that he wants to buy 1,000,000 feet of the timber on Lost Horse creek to cut for the local market. He does not want to saw all of this timber in one year, but wants three years in which to remove it. He sends the ranger his formal application for the timber, which is based on the points already discussed with Ranger Smith, and is approximately in the form which the final contract will take if the sale is approved. Smith transmits Brown's application to the supervisor with a full report on the species, condition, size, amount and location of the timber, topography of the area and surrounding country, the cost of marketing the timber, the possibility of utilizing the tops for cordwood, and other points bearing on the sale, with recommendations in regard to the price and special terms under which the sale should be made. The report shows, among other things, that the timber applied for is only about one-sixth of all the timber on the Lost Horse creek watershed. It recommends that the timber be sold in the form of a series of small sales which will in turn remove the ripe timber from the watershed portions of the watershed until finally the whole has been cut over in about 20 years. The report goes on to state that if the watershed is handled in this way, the area cut over in the first sale will, through the growth of the middle-aged timber left on it, be ready 20 years from now for the sale of the timber then ripe. In this way the whole watershed of the creek may be worked over again and again in the indefinite future. The report is really a brief, tentative working plan. Accompanying the report is a map which shows clearly that the timber recommended for sale to Brown includes the whole of a natural logging unit--one of the branches of the main creek, and that no timber will be rendered relatively inaccessible by the removal of that mentioned in the application. The supervisor, after reviewing the papers carefully, and adding his recommendations, forwards them to the district forester for final approval. If the sale is approved, the timber is advertised for 30 days. At the end of that time the bids are opened, and if Brown is the highest bidder the sale is awarded to him.

As soon as the formal contract is executed, Brown is at liberty to begin operations. Of course, it is necessary before cutting begins on the area, to have the trees marked so that the fallers will know just which ones are to be cut and which are to be left. This marking is the most important work in connection with any sale, since on it depends on the nature of the future stand. Fifty years from now, when all other considerations in connection with the sale become insignificant, it will be important to find that the original marking on the Brown sale was done correctly in accordance with the principles of silviculture.

The work of actually designating the trees for cutting is, in important sales, and in the small ones also, as far as possible, done by men who have received technical training in the principles of forestry. The object of the marking is to leave the stand in the best possible condition silviculturally. This means that dead, defective and suppressed trees must be cut; the species of greater economic value must be favored under those of less value, so that the reproduction which comes about after the cutting will contain a higher percentage of the more valuable species than does the present stand. The marking should leave on the ground not only enough trees to

seed the area thoroughly, but also enough to form the basis of a second cut within a reasonable length of time, when timber will be much scarcer and more in demand than it is now. The stand must not be left so open that the wind will bring down the trees left for seed. On the other hand there must, of course, be enough timber designated for cutting to furnish the lumberman with an amount sufficient to make operation economical and profitable. There must be enough timber left on the area to protect the watershed satisfactorily since irrigation interests are very largely dependent on the forests which act as reservoirs on the headwaters of the streams furnishing the water supply.

With all these many opposing forces to harmonize, the man actually doing the marking has no easy task. However, by carefully studying each tree and each group of trees as the work proceeds, he usually gets a good result, so that the lumberman gets the larger trees, which, of course, are the ones he wants most for saw logs, the more numerous smaller trees are left to protect the watershed, and many medium-sized trees, although merchantable now, are left to seed up the openings, and, since they are the ones which are growing most thrifflly, are the best to leave as the basis for the next crop.

In the original examination of the area at the time the timber is estimated, the forest officer has observed many points which require attention in the form of formal contract. The size of the timber and the nature of the ground indicate to him to what height the stumps may be economically cut by the purchaser, while at the same time the maximum amount of timber is set for the area. The officer also determines from the character of the trees themselves to what diameter in the top they may best be utilized. He also makes observations which show him what method should be used in disposing of the limbs, tops and other debris which will result from the cutting.

Next to the marking, it is most important to secure close utilization of all of the timber cut. In the old days when stumpage was worth practically nothing at all, it was common to let the abundant timber rot in the woods. This does not, of course, include the additional receipts for grazing and special uses. In other words, the Deer Lodge national forest, which has been under administration now for less than two and one-half years, is already producing the counties in which it is located more than seven-tenths of the revenue which could be collected as taxes if the land were owned privately. Furthermore, it must be borne in mind that the taxes secured from rough timber land of this character, if privately owned, would constantly tend to become less as the forests were cut off without provision for regeneration or protection from fires. On the other hand, the receipts from timber sales and other sources of revenue, will, under the management of the forest service, constantly increase with the advance in stumpage prices, with the full utilization of the annual growth of the forest and with the planting of areas now barren of trees.

It is firmly believed that this national forest will, within a few years, be producing for the state a larger revenue return than would the same land if subject to taxation. And, finally, it must be remembered that the financial benefits are almost insignificant compared with the benefits secured to the community by the guarantee of a perpetual, though limited, timber supply, and by the protection afforded irrigation interests through the maintenance of the mountain forests.

meeting it was unanimously agreed that the states should pass laws making proper brush disposal compulsory. It is now up to the state legislatures, for it is obviously impossible to expect a lumberman on his own initiative to add 50 cents per 1,000 feet, say, to the cost of his logging to provide for proper brush disposal, when his competitor is leaving a dangerous slash.

On national forest sales the brush is always so handled that the fire danger is reduced to a minimum. The actual work of disposing of the debris must, of course, vary with the nature of the stand and the objects to be attained. In dense stands where the timber is easily affected by fire, and where there is little danger from brush, the brush is piled and burned at some safe season of the year, frequently when the piles are covered with snow, so that no damage will result. In open stands of timber where the fire danger is slight, such as in yellow pine, where it occurs in arid regions, the brush is merely piled without burning it, since under such conditions it is an advantage to keep the brush on the ground for the benefit of the slash where the rather open piles will tend to seedlings in their first few years.

In view of previous statements in this paper in regard to taxation, it is interesting to see whether or not the state is receiving anything from the national forests to take the place of the taxes which might be collected if the forest land had passed into the hands of private individuals. The Deer Lodge national forest has an area of approximately 1,600,000 acres of government land in Deer Lodge, Silver Bow, Jefferson and Granite counties. This land, if taxable, would produce a revenue for the counties and state of about \$2,500 annually. During the past six months \$47,188.82 worth of timber was cut and scaled on the Deer Lodge. Of this amount, 25 per cent will be paid to the state, to be divided among the four counties to use for school and road purposes.

At this rate the sale of timber alone is bringing to the state \$2,500 annually from this one national forest. This does not, of course, include the additional receipts for grazing and special uses. In other words, the Deer Lodge national forest, which has been under administration now for less than two and one-half years, is already producing the counties in which it is located more than seven-tenths of the revenue which could be collected as taxes if the land were owned privately. Furthermore, it must be borne in mind that the taxes secured from rough timber land of this character, if privately owned, would constantly tend to become less as the forests were cut off without provision for regeneration or protection from fires. On the other hand, the receipts from timber sales and other sources of revenue, will, under the management of the forest service, constantly increase with the advance in stumpage prices, with the full utilization of the annual growth of the forest and with the planting of areas now barren of trees.

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A CONFESSION.

There is a department in the American Magazine which grows more and more interesting every month. It is called "The Pilgrim's Scrip," and it is made up of letters, comments and confessions from readers of the magazine. Really extraordinary things appear in it from time to time--letters that fairly strip the hearts of the writers bare--as, for example, the following confession of a tramp, written in verse:

We huddled in the mission,
For it was cold outside,
An' listened to the preacher
Tell of the Crucified;
Without, a sleety drizzle

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Cut deep each ragged form,
An' so we stood the talkin'
For shelter from the storm,
They sang of God an' angels
An' things I stopped believin'
An' heav'n's eternal joy,
When I was yet a boy;
They spoke of good and evil
An' offered savin' grace--
An' some showed love for mankind
A-shinin' in the face;
But some their graft was workin'
Th' same as me an' you,
What was we urg'n on us
But what he believed was true,
We sank an' dozed, an' listened,
But only feared, us men,
The hour, when service over,
We'd have to mooch again,
An' walk the icy pavements,
An' breast the snowstorm gray,
Till the sluiceway was opened
An' there was hints of day;
So when they called out "sinner,
Won't you come?" I came,
But in my face was pallor,
An' in my heart was shame--
An' so, forgive me, Jesus,
For mockin' of Thy name;
For I was cold an' hungry--
They gave me grub an' bed
After I kneeled there with them
An' many prayers were said,
An' so, forgive me, Jesus,
I didn't mean no harm
An' outside it was zero,
An' inside it was warm,
Yes! I was cold an' hungry,
An' oh, thou Crucified,
Thou friend of all the lowly,
Forgive the lie I led.

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See Sheridan's Great Ride

It is the morning of April 12, 1861, a day destined to be fraught with action, the result of which would cause the greatest civil strife the world has ever known.

A ball is in progress at the winter home of the Ellinghams, a Virginia family noted for its hospitality and famed for its patriotism and wealth since early Colonial days. Robert Ellingham and Captain Kerchival West had been classmates at West Point and are now both officers in Colonel Thoburn's regiment of the U. S. Regular Army stationed at Charleston. Beauregard had already sent his famous message to Major Anderson, "I shall open fire in one hour," and the inhabitants of Charleston had gathered in the gray twilight of the morning to witness the bombardment.

As our story opens Ellingham and West are discussing the probability of war. Ellingham, a hot, impetuous Southerner, has just remarked that if war does come he will join the Confederacy, to which West quietly answers, "I hope to God, Robert, we may never meet in battle." Their Colonel arrives with an order from Washington commanding all officers who are to prove loyal to the government to report to Colonel Lyon at St. Louis and dismemberment of the regiment begins.

Robert's beautiful sister, Gertrude, is in love with Robert's friend, Kerchival West, but West has a rival, Edward Thornton, a dissolute resident of Charleston and a rabid Secessionist. It is also in love with Gertrude and during the opening scene he attempts to force his attentions on the distracted girl. She repulses him and he, becoming enraged, so far forgets himself as to take her in his arms, saying, "If it was the Northern soldier, West, who held you I suppose you would not object." West enters the room and overhears the remark. "Excuse me, Miss Ellingham, if you will kindly retire I think I can answer Mr. Thornton's remark to his entire satisfaction." The girl, knowing Thornton's reputation, leaves the room in fear and trepidation, and as she disappears Thornton turns to leave. He is halted by the cool voice of West. "Mr. Thornton, you are a contemptible coward." Words such as these to a man of Thornton's nature can lead to but one result, a duel, and he turns to West and strikes him in the face with his heavy riding glove. Before the affair can go farther several of the male guests enter the room and separate the rivals. A duel is quickly arranged and Gertrude, seeing Thornton and his friends leave the house, returns to Kerchival to express her regrets. "Miss Ellingham, I may never see you again, for, as you know, my duty will call me to the defense of the Union, while you will no doubt return to your home in the Shenandoah Valley. But before we part I must tell you that I love you and always shall. If I live may I return to you after the war is over? Can I ever hope to win your love?" The brave girl, placed between love and duty, hesitates. At that moment there is the sudden boom of a distant gun, a slow, bright line of fire in the sky--Beauregard has kept his word, his shell breaks upon the fort, Major Anderson opens fire on the shore batteries, and the inevitable has happened--war with all its horrors has come to the American people. The girl decides, "No, no, I am a Southern woman. We are enemies." She sinks sobbing to her knees. West turns despairing from the woman he loves to go and avenge the insult Thornton has offered her.

Our next scene shows the Botanical Gardens at Charleston, where the duel takes place. Thornton is wounded, but not seriously, and West generously offers his hand in pardon. "No, damn you, we will meet again. You have marked me for life, but my turn will come."

IN THE SHENANDOAH VALLEY, OCTOBER 19, 1864.
Four years later our next scene opens at the home of the Ellinghams, 12 miles from Winchester. A regiment of Union cavalry, under the command of Colonel Kerchival West, are quartered on the Ellingham plantation. A scout, disguised as an aged farmer, steals up to the gate and leaves two letters for Gertrude. One a secret dispatch addressed to Captain Edward Thornton of the Confederate Secret Service, which she is asked to deliver, and which she determines to do. The other is from her friend, Miss Thoburn, at Washington, telling Gertrude of West's assignment to duty in the Valley and wondering if she and West will meet. "You know, Gertrude, you told me in Charleston that you loved him."

A meeting between the lovers follows. Then we see the brave girl deliver the dispatch to Thornton, only to be arrested with him and brought back to face Colonel West as prisoners of war. The girl is paroled but Thornton is searched and the dispatch found upon him. Realizing that his fate is sealed he determines to avenge himself upon West. Seizing a drawn saber from one of the guards, he slashes at West, slightly wounding him, then makes a dash for freedom. He is followed by Sergeant Barket, West's favorite orderly, and shot by him just as we see a detachment of Confederate cavalry charge and capture a Union battery. This is one of the most thrilling reproductions of grim visaged war ever produced in motion pictures.

Our next six scenes reproduce in rapid succession historical incidents of one of the world's greatest battles. General Jubal Early, in command of the Confederate forces in the Shenandoah Valley, learns through his secret services that Sheridan is away from his army, having been called to Washington. He quickly decides to surprise the Union forces on Cedar Creek. Their leader being away will render them easy prey, and so it proves. Thoburn's position, on the extreme right, is attacked just at daylight. The surprise is complete. His position is turned in an instant, and within two hours from the firing of the first shot Sheridan's entire magnificent army is streaming back on the pike towards Winchester. Sheridan has, however, returned, and stopped over night at Winchester Tavern. As he finishes his breakfast a scout from Custer's cavalry rides up with the intelligence that three heavy firings in the direction of Cedar Creek, and Sheridan starts on his famous ride, destined to be an epoch-making event in American history. We see Sheridan and his entire staff, with foam-flecked horses, drawing nearer and nearer to the scene of battle. At last they reach a mass of stragglers, who, wounded and bleeding, are struggling to the rear.

Pond, in his history of the Civil War, thus tersely describes the effect of Sheridan's ride:

"Far, far in the rear was heard cheer after cheer. Reinforcements are coming," flies from lip to lip among the retreating soldiers. Not reinforcements but a host of General Phil Sheridan, the most beloved leader of men our great war produced."

"Turn back, boys, we'll lick 'em yet," he yelled as he dashed by, and his potent personality turned defeat to victory, for every soldier able to handle a gun followed little Phil. Quick, sharp, decisive orders. Mounted officers flying here and there with them soon brought order out of chaos, and the Confederate forces who, two hours before were streaming over the battlefield of Cedar Creek a conquering legion, found themselves face to face with a foe reformed into a victorious, unconquerable army, and all the result for man's love for leasurship. The confidence of the Army of the Potomac in Phil Sheridan amounted to an absolute belief in his infallibility. He was their hero, and with him to lead them not a man in the army believed there was such a word as fail.

Our next scene, "After the Battle," finds a hospital corps, under a white flag, sent by General Thoburn at the request of Miss Ellingham, to search for the body of Colonel Kerchival West. No words of ours will help this scene. Its action truly speaks louder than words.

We next see the wounded colonel in an old church which has been converted into a hospital, there being nursed back to health and strength by his Southern sweetheart. Love, the great conqueror, has wiped out sectional feeling, and her woman's heart belongs to her lover and not to her country.

Six months later peace has been declared and Gertrude and Kerchival are united. The war is over and they are now preparing to leave for General Thoburn's home in Washington.

LIVING THE BATTLE OVER--THE REUNION.
We are then privileged to witness a scene which, in 1865, was being enacted in almost every city in this great country--the bringing together of the living members of the disrupted families. Our old sergeant has called to pay his respects to his colonel, and is at once asked to again rehearse for them the stirring scenes of the battle of Cedar Creek, and to tell them where he last saw the missing colonel--Kerchival West. Barket sets up a battery of teacups and lays out the nimble battlefield for the guests. But in his excitement at the recollection of General Sheridan's arrival he sweeps over the teacup battery like a whirlwind, much to the disgust of old Margery, the guardian of the children. "Never mind, Barket," laughs the general. "Tell us where you last saw Colonel West." "The standard bearer of the battery fell forward pierced by a bullet, a wounded soldier without coat or hat and mounted on a swift, black horse spurred by the battery. It was Colonel West, and leaning forward he swept Old Glory from her lowly position and, followed by a hail of Confederate bullets, I saw him disappear behind a little schoolhouse right about there." (Pointing with his cane.) A lady reached over his shoulder and, taking the cane from his trembling hand corrects: "No, Barket, not over there, but over here at the little church where we were married this morning." And the happy guests turn to find Colonel West and his pretty Virginia wife standing clasped in each other's arms.

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