

Report on
Blue Mountains (West) Reserve
Oregon
By
M.L. Erickson, Assistant Forest Inspector
December 1906.

TIMBER SALES.

General Forest Conditions.

The Strawberry Mountains occupy the eastern part of the Blue Mountains Forest Reserve. From this main range several spurs extend south and west. A continuous divide follows the main portion of the reserve in an easterly and westerly direction, which is cut by a very deep canyon formed by the John Day River. From Canyon Creek to the western edge of the reserve is a broad, rolling summit which bears excellent yellow pine and tamarack timber. The forest in general in this part of the region is excellent. The soil conditions resulting from a lava overflow, covering the archaic granite and gneisse formation, has resulted in a lava soil which is very fertile when sufficiently disintegrated. With sufficient moisture yellow pine grows very excellently on such land. The forest in this region covers approximately an area of one-half million acres, and the portion south of the Strawberry range that bears excellent yellow pine and tamarack covers approximately 800,000 acres. The remaining area of the Blue Mtns. Reserve, including the Strawberry range, furnishes only lodgepole pine, red fir and timber of a class that is not of such commercial value. The yellow pine is more abundant and is found in more suitable situations on this reserve than I have seen its occurrence in any other part of Oregon. It grows tall and straight, maintains a uniform taper, and furnishes a large percentage of clear length. Trees thirty to fifty inches in diameter, with height of 150 feet, furnishing four to six logs are not uncommon. Its occurrence is more generous on the north and eastern slopes, on heads of canyons, ravines and gulches in general where sufficient moisture occurs. On south slopes it occurs abundantly, but does not reach such suitable dimensions.

Tamarack is found in the higher altitudes, in mixture with yellow pine and lodgepole pine. It grows more particularly on the moist situations at the heads of streams. North slopes are particularly forested with tamarack. It reaches immense size; I think its best development is found in the Blue Mountains west. It reaches a height of 175 feet and a diameter of five feet. The clear length is almost as much as the merchantable length. The trees are surprisingly tall and straight, possessing very little taper until toward the extreme top, when the taper drops suddenly. Timber of this class can be logged to four inches from the tops, without exception. The limbs are small and furnish no difficulties in sawing. Generally there is seen a swelling at the base of the limb, but this does not extend deeply into the wood; hence, the lumber sawed from such trees is quite free from defect. Tamarack lumber is considered by many people as of little commercial value. The principal reason for this belief is that the lumber manufactured from tamarack is subject to checking and is very apt to split at the ends. However, in consultation with Mr. Ott of the Ott & Dailey sawmill which is operating in the mountains of the reserve, I learn that he cuts tamarack wherever it is found on his land, and runs the lumber together with his yellow pine. He does not pass it off as tamarack because the people are adverse to it, but he finds that no objection is made to its mixture with other species, and when worked in connection with other lumber it proves very satisfactory. He says it is a very good grade of lumber, which should be more firmly estab-

lished in the market than it is. I believe that tamarack should be valued in stumpage prices as high as yellow pine. It will soon become an important item in the general market. The lumber is easily worked, and is very suitable for dimension stuff, also for interior finish.

Lodgepole pine is perhaps the next most important commercial species. It is found covering the whole Strawberry range of mountains except above an altitude of 7500 feet, when the tops of the mountains are usually barren. It also occurs on the watershed of the John Day River, in general on the north side of the main summit extending east and west through the reserve. It is not considered of commercial value at present for saw timber, but is used very largely by ranchers for pole and post timbers. Some excellent stands of lodgepole pine occur on the slopes of the Strawberry Mountains. Like most lodgepole forests of Eastern Oregon, it is being attacked by the pine bark borer *Dendroctonus terebrans* which is destroying it quite rapidly.

Red fir occurs quite commonly in the south parts of the reserve. It is found more generally in high altitudes on rather rocky and ridgy country. It is not of such commercial importance because of its insufficient abundance. Its greatest occurrence was noticed in the southwestern portion of the reserve in the vicinity of Ott & Dailey's sawmill. It is, however, a very good timbertree, and is considered of considerable value. In the market it is rated as high as yellow pine. The stumpage price for red fir should be equal to that of yellow pine and tamarack.

Englemann spruce, Alpine fir and juniper occur scatteringly throughout the reserve. Alpine fir and white fir are more common at the very heads of streams rising in the Strawberry range. Spruce also was noticed to follow the courses of the creeks, where it was in mixture with both firs and lodgepole pine. Juniper occurs on the high, dry, exposed ridges or mesas. It seems to grow on the lava and rocky points on the watersheds of the Crooked River; particularly along Wolf Creek and Beaver Creek juniper occurs in scattered areas over the higher land which is entirely covered with scab rock and lava. About ten per cent of the reserve is composed of this open scab rock land bearing juniper.

Accessibility and Market

At present the nearest railroad points to the nearest part of the reserve are Austin and Shaniko, Austin at the eastern end of the reserve, distant twenty miles from the nearest boundary, and Shaniko which is sixty miles from Prineville. The reserve lies far in the interior of Oregon, and market conditions are now only local. An extension of the Sumpter Valley Railway to Prairie City is very likely to be brought about within one year. By such an arrangement much timber which is now inaccessible can be taken down the tributaries of John Day River to Prairie City Valley and be given an outlet to the open market. The vicinity of Harney Valley will require an immense amount of timber for the development of that part of the country. Settlers are coming in this country very rapidly, and are building up their homes to keep pace with the rapid development of the valley. The probability of another railroad extending from Ontario to Burns will open up a vast amount of timber tributary to Harney Valley. In the neighborhood of Prineville there are three sawmills, one of which is cutting reserve timber, but the market for the timber cut from the reserve is in the vicinity of Maury Mountains, and the only available timber supply for Prineville is in the Blue Moun-

tains Reserve. The territory around Prineville is also developing rapidly, and vast amounts of timber will soon be manufactured into lumber in this vicinity, due to the development of the Des Chutes Valley.

At the Birdsong & Ammond mill on the Maury Mountain Reserve, common lumber is selling for \$12 per thousand and finished at \$25 per thousand feet. At Ott & Dailey's sawmill which is far in the interior, common lumber sells at \$10, and finished at \$20 per thousand feet. Again, in Bear Valley common lumber sells for as low as \$8. As a rule the average price of common lumber in the rough is from \$8 to \$12 per thousand feet in the vicinity of the Blue Mountains Reserve. To the north of John Day Valley several sawmills are operating and timber from this vicinity is being sold at an average of \$12 per thousand for common, rough lumber. The market is very likely to be changed in the course of the next few years. Even in vicinities where the timber is very accessible, I think the price will go up materially because of the general tendency in the rise of stumpage values.

Recommendations for Stumpage Prices

No. 1. Yellow pine when used for domestic purposes at \$1.75 per thousand feet. When used for commercial purposes or in a large sale at a minimum price of \$2.00 per thousand.

No. 2. Tamarack the same as yellow pine.

No. 3. Red fir the same as yellow pine.

No. 4. Lodgepole pine when used by settlers for house logs or others, the minimum should be \$1.25 per thousand. When sold in the general market it should be valued at a minimum price of \$1.75 per thousand.

No. 5. Poles twenty to thirty feet in length, six inches at the top end, valued at from 25 to 50 cents each. Small poles for fences at 5 to 10 cents.

No. 6. Posts from 2 to 5 cents.

No. 7. Stulls, lagging, shakes, and so forth, should be valued at cordwood prices.

No. 8. Green cordwood at \$1.00 per cord, dry wood 50 cents.

Free Use

The free use business has been handled in a very careful manner, and particular pains have been taken by Mr. Ireland to see that exact requirements were adhered to in free use as in timber sales. The descriptions of the areas have been accurate. Marking timber and measuring have been carried out faithfully. In fact, the work has resulted in causing too much attention and time of the forest officers to be devoted to this work in carrying out the details, so that their time has been insufficient to care for all the free use business. This work has not been attended to as rapidly as it should have been and many applicants for cordwood have been required to wait long intervals before being able to secure their per-

mits. For instance, Guard Bennett was required to care for all the free use business in the John Day Valley, Bear Creek, Silvies Valley, Harney Valley, Emigrant Creek, Izee country, Silver Creek, Calamity Creek, and South Fork of John Day country. The result was that he was unable to care for the applications and many persons have undoubtedly secured their timber off the reserve without a permit because of the press of work Bennett was compelled to do. The general policy in free use should be modified to meet the demands of Mr. Ireland's assistants. Free use areas should be blocked out; the trees within this area marked once for all, and the applications made to call for timber within one of these free use blocks. The applicant should go into this area at any time and secure what timber his permit calls for without waiting for the forest officer to measure up his material. This will result in perhaps a little advantage being taken by the applicants to secure a little more timber than their permit calls for, but I think it will work out sufficiently well to meet all practical purposes. The piling of the brush and disposal of refuse should be made subject to the inspection of the forest officer. Each applicant should initial the stump from which he has secured his wood, so that the forest officer may place responsibility for brush piling and cleaning up. By such an arrangement free use permits can be issued upon application without an actual investigation in the field and marking out an area to each separate individual. One very typical example of a free use block is on Strawberry Creek in Guard Bennett's district. Many other blocks of this character can be located.

In the western part of the reserve the greatest amount of free use business will be in the vicinity of Paulina Valley, Ochoco Creek and Dayville, but it is by no means as extensive as the business in the territories outlined above. I hardly think the system of defining free use blocks in this part of the reserve need be carried out except in one or two instances, because the applications are scattered. The settlements are not dense.

Timber Trespass

W. R. Birdsong and R. A. Ammond. —
November 18, 1905

Timber Trespass
Maury Mtns. Reserve

In June and July, 1905, 98,580 feet of yellow pine timber was cut and removed from vacant reserve land. On the cutting area there yet remains 15,666 feet which is scaled and paid for by the trespassers. At the sawmill yard there was found and seized 97,387 feet. Timber is worth from \$12 to \$17 per M. feet. This trespass was unintentional because the parties purchasing the mill were uninformed as to the reserve regulations, and also to where the reserve boundary was. They stopped cutting and removing timber voluntarily as soon as learning that they might be committing a trespass. When Supervisor Ireland investigated the case the parties desired to settle for the trespass immediately so that they could purchase timber from the reserve to supply the large demand by settlers for lumber. A proposition of settlement for \$1.00 per thousand was made and accepted by the forester. The brush was not piled at all and was allowed to lie over during the winter until spring, when on July 7th a satisfactory cleaning up of the brush had been reported and the sale was closed.

This case was examined October 28, 1906. I found that no discretion had been exercised by the parties in cutting the timber. Large tops were left in the woods, averaging 24 inches in diameter among the large timber, and 15 to 20 inches as a rule. Many trees were cut and left in the woods because of some slight defect. A slight bit of heart rock in the center or a little wind shake was sufficient to allow a large tree to remain. Stumps were cut high and much rubbish and trash thrown about promiscuously. A great amount of waste has resulted from this cutting. The condition of the forest due to the promiscuous cutting made the piling of brush and cleaning up a matter very difficult to perform satisfactorily. The brush has been piled very poorly, and little attempt has been made to gather up refuse material. The stuff was dry and scraggy and compact piles could not be secured; however, I think a fairly clean burning can be obtained since the material is very dry. However, since the sale is closed there can be no further requirement imposed. When the forest officer starts to burn the brush he should request the assistance of one or two men to help him in repiling the material and securing a clean burn. As the condition of the forest resulting from the cutting leaves a large amount of waste material on the ground, a satisfactory disposal of the brush and cleaning up of the area cannot be secured.

TIMBER SALES

Birdsong & Ammond.
June 16, 1906.

Mauray Mountains Reserve.

Birdsong & Ammond.
September 10, 1906.

Mauray Mountains Reserve.

These two sales are Class B sales for \$100 and \$50 and will be considered jointly.

The provisions of these sales are as follows:

1. Application for 100,000 feet mature yellow pine timber.
2. Cutting limit, 24 inches.
3. Stumps 24 to 30 inches.
4. Top diameter limit 12 inches.
5. All sound dead timber suitable for saw timber to be cut.
6. No seed trees left standing, none considered necessary.
7. Cost of logging and hauling estimated at \$3.50 per M. feet.
8. Value of rough lumber at mill - \$12.00, of finish \$25.00.
9. Stumpage price, \$1.00 per M feet B.M.

The examination of this sale was made October 27, 1906. The provisions of the sale are not satisfactory, the height of stumps and the top diameter as specified in the agreement should never have been allowed in this class of yellow pine timber. Too much waste has resulted. The specification for the height of stumps 24 to 30 inches has been taken full advantage of. Most of the stumps are fully 30 inches high. The top diameter of 12 inches resulted in an immense amount of waste material left in the woods. One sound top, actually 24 inches at the sawed end was found on this tract, from which two suitable logs could have

been secured. Another top 27 inches in diameter was discovered, but the top was broken and could not very well have been utilized. The tree had been felled across an old log and of course broke in two pieces. This is carelessness and not at all necessary. Other tops left in the woods range 12 to 20 inches; averaging about 15 inches. Very few trees have been cut down to the required 12 inch limit. The whole operation of cutting has been carried on in a most careless and shiftless manner. The stump height should have been 18 inches, and the top diameter 8 inches, and I so recommend, in all future sales on this reserve.

Supervisor Ireland, whose experience has been entirely in connection with timber sales in the Pacific Coast country among large timber, did not clearly see the necessity for such close cutting as is required in yellow pine forests. Besides the cutting area is distributed over a culled forest and he thought by compelling the applicants to utilize all timber below 12 inches in the tops would work a great hardship upon them. Although large yellow pine timber becomes very limby in the crown, and the resulting timber taken is exceedingly knotty and of very poor quality, which does not possess any market value (so I am told) yet the condition of the forest resulting from so much refuse which is too large to burn cannot be permitted. It may be very true that the poor quality of lumber obtained from the material manufactured from the tops below a diameter of 12 inches does not possess much if any market value, however, the profit in logging and sawing timber purchased from the reserve at \$1.00 per M feet is over \$5.00 per thousand and the applicants can well afford to utilize the whole tree and clean up all the refuse carefully.

The brush has not been piled in the manner desired, nor in a way exhibiting any spirit to comply with the regulations. This work also has been done very carelessly. The piles are not compact as a rule, and in many instances the limbs were piled in window fashion along the whole length of a top in order to save the work of lopping the tops. A clean burning will not be accomplished from this sort of piling; the large material over 12 inches in diameter left in the tops will merely char, leaving the refuse in a worse state than before attempting to burn it.

The excuse for this bad condition of affairs is somewhat plausible. The applicants are a lazy, shiftless and worthless class of citizens, who have been accustomed in past years to logging indiscriminately on government land, and practicing the cutting of merely the choice trees, to take out only the logs which are clear of limbs leaving immense tops in the woods, and if a tree exhibits the least sign of decay or other defect after being felled to leave it lying on the ground untouched. Such is the situation exhibited in the Birdsong and Ammond trespass case, who are the same parties connected with this sale. Supervisor Ireland was so exceedingly busy during the summer season with the care of grazing matters on the Blue Mountains Reserve that he had no time to personally inspect the progress of the cutting. Guard Morris, who was left in charge of the sale was inexperienced in handling timber sales, and had an idea (inculcated by the continual wail of the applicants) that the matter of high stumps, large tops remaining in the woods, and slack work in piling of brush, did not matter so much as long as more timber than was actually paid for was not cut. He was not aware of the necessity of compelling the applicants to adhere strictly to their agreement.

It is unnecessary to give Supervisor Ireland explicit instructions in regard to the manner of correcting the work of this particular sale, since Deputy Ranger Henry Ireland, who accompanied me during my inspection, requested my opinion and suggestions for improvement. I pointed out, to him, the faults in the work and showed how they could be remedied. He immediately transferred these instructions to Guard Frank Morris, who was conducting the sale, to have them carried out. I think the sale is being executed now according to the provisions in the contract.

I recommend, however, that the Supervisor be instructed in the manner of conducting, as outlined above, future Class B timber sales.

The stumpage price of \$1.00 per M, placed on the timber in this sale, is much too low. The timber is entirely yellow pine, of good quality, very accessible. The cost of logging, including hauling a distance of about one-half mile, amounts to 3.00 per M feet. Sawing cost from two to two and one-half dollars per thousand, making a total of about \$7.00 PER M, including the cost of piling the brush. Rough common lumber sells at the mill for \$12.00, and finish at \$25.00 per M feet. Adding a stumpage price of \$1.00 per M makes the total cost from \$7.00 to \$8.00 per M feet, which leaves a net profit of from \$4.00 to \$4.50 per M. on the rough lumber, and something much higher on the finished product.

I recommend the minimum stumpage price on yellow pine timber on the Mauray Mountain Reserve be fixed at \$2.00 per M feet B.M.

Burns Milling Company.
November 10, 1906

Timber Sale..
Blue Mountains W.

This is a Class B Supervisor's sale for 57,200 feet of yellow pine timber at the rate of \$1.75 per thousand. This sale was initiated by Mr. Henry Ireland and myself November 9th and 10th. It is located in the N.E. 1/4 S.E. 1/4 Section 2 T. 20 S., R. 33 E. W.M. The timber is a pure stand of yellow pine, most of which is mature and fast deteriorating in value. Much of the timber is defective and butt burned. Reproduction on the area is fair, but by using discretion in marking the trees excellent reproduction can be easily secured. The timber has all been marked by Mr. Ireland and myself, which was done immediately after completing the sale. The diameter limit in the sale was 23 inches and nearly enough thrifty trees below 23 inches remaining on the area will suffice to secure the reproduction, but where conditions revealed the necessity a few seed trees above 23 inches were left on the cutting area. The area is located in a high and dry mountainous country in which there is no water in summer. The topography is not rough, but consists of rolling hills and making downhill logging on an easy grade so that no difficulties in this respect exist. The sawmill is situated a distance of about 1 3/4 miles from this tract at the only available watering place in the vicinity. For this reason it is impossible for the Burns Milling Company to move this mill to another location in this part of the country. They figure on doing all their hauling in the winter time over sled roads, and hence by leaving the sawmill located at this watering place they figure that in case they wish to purchase more timber they could log a distance of five or six miles from the mill. They have secured the regular Minnesota logging sleds ten feet wide and purpose to build a wide sled road by improving the one already leading to the tract where this sale is located. They have secured a special privilege for this work. Mr. Sayer

figures that logs can be handled for less than one-half the cost by using sleds than by hauling on wagons. In this assumption I think he is perfectly correct. The company wishes to bank the logs on skidways, decking them up in huge piles. In this way the scaling can all be done at once by the forest officer, and save the necessary time in giving constant attention to this sale.

The cost of hauling 1 3/4 miles is about \$1 per thousand; cutting 75 cents, and skidding \$1.25; brush piling can be done for not more than 25 cents per thousand. The total cost of logging, therefore, does not exceed \$3.25 per thousand. Sawing at the mill costs about \$2.50, and adding to this amount \$1.75 for stumpage, the total cost of manufacturing the material into rough lumber will approximate \$8.50. Common lumber in the rough at the mill is selling at \$10 per thousand, and finish at \$20. This leaves a sufficiently safe margin of profit for the company. This first sale is a sort of experiment with them, and they wish to decide by the success resulting from this sale whether they will make further purchases. It is very probable, however, that the company will make some large purchases in the near future, in which event I recommend charging a stumpage price of \$2.00 per thousand. In connection with the mill, which is a large, substantial one with a cutting capacity of 25,000 feet per day, is a planer and shingle bolter. All grades of finished lumber, flooring, ceiling, siding, shiplap, casings, etc., are manufactured at this mill. The material is thoroughly seasoned under cover. The mill is well equipped.

Provisions in this agreement are briefly: Diameter limit 23 inches, stump height 18 inches, tops 8 inches; cut all dead timber sound enough for saw timber. Pile brush compactly; logs to be decked on a large skidway and scaled there (before removing to the mill) by the forest officer.

Estimated Standing Timber

About one and one-fifth million acres of the reserve is what might be classed as yellow pine timber land which bears almost exclusively yellow pine and tamarack. I estimate that about 700,000 acres of this land will cruise 12,000 feet B.M. per acre, and 500,000 will go 6000 feet per acre, making a total of 11,400,000,000 feet. In addition to this I estimate about 300,000 acres of lodgepole pine, fir, spruce, barren and open land. This will yield an average of one and one-half thousand feet per acre. This will make a total estimated stand of timber on the reserve of 11,850,000,000 feet. The stand of 12,000 feet per acre estimated for 700,000 acres, I think, is conservative, for I have cruised out sample acres which ran as high as 35,000 feet per acre. The timber is excellent. The above is a conservative estimate.

SUMMARY OF RECOMMENDATIONS

Timber Sales

1. Minimum stumpage prices: Yellow pine for domestic purposes and local use \$1.75 per M ft. B.M.; for commercial purposes when placed on the general market at \$2.00 per M ft. B.M.
2. Tamarack and red fir, same as yellow pine.

3. Lodgepole pine, when to be used by settlers for house logs, poles, or other purposes at \$1.25 per M ft. B.M. When to be sold in the general market, at \$1.75 per M ft. B.M.
4. Poles, 20'-30' in length, and six inches at top end from 25 to 50 cents each.
5. Poles, from 2 to 5 cents each.
6. Green cordwood at \$1.00 per cord. Dry cordwood, cut from dead material at 50 cents per cord.
7. Stulls, lagging, mining timbers and shakes, should be valued at cordwood prices.
8. Block out free use areas, mark the trees to be cut, and allow applicants to cut and remove the timber so marked at any time. The presence of a forest officer to measure the material when taken out not required. Brush piling and cutting subject to approval of forest officer, and each applicant should initial the stump of the tree from which he has secured his wood, in order to place responsibility for satisfactory cleaning up and brush piling. This method is advised because of lack of forest officers to carry out the provisions in free use agreements.
9. Request the assistance of one or two men from Birdsong & Ammond to help the forest officer to re-pile and burn the brush in a satisfactory manner on the Birdsong & Ammond trespass case.
10. That Supervisor Ireland be instructed in the manner of conducting Class B sales, particularly in respect to necessity of utilizing all the merchantable portion of trees, and necessity of careful brush piling.
11. The minimum price of yellow pine timber on the Maury Mountains Reserve be \$2.00 per M ft. B.M.
12. Estimated that the Blue Mountains Reserve W. contains 11,850,000,000 ft. B.M. of merchantable timber.

(signed)

M. L. Erickson
Assistant Forest Inspector

BOUNDARIES

The division line between the eastern and western Blue Mountains Reserve is the Dalles Military Wagon Road. This is a very poor dividing line since the Dalles Military Wagon Road in accordance with its survey as mapped does not exist. The commonly supposed Dalles Military Wagon Road is the county road from Prairie City to Ontario. The Wagon Company purchased the right of this road and thus secured the landgrant of alternate sections three miles on either side of it. This road, however, will not, although well defined, make a suitable division line between the two reserves. Cattle will ordinarily graze along the road,

which from John Day Valley follows the main John Day to its source, since on both sides of the road is natural grazing land for cattle. This road is also used as a main driveway for stock which enter Crane Prairie, Summit and Flag Prairie and Logan Valley. I recommend the division line between the two reserves be the main summit between Burnt River and Malheur River and John Day River, to begin at a point near Thompson's Hot Springs, to follow the ridge between Deardorff and Rail Creek until it meets with the main divide, then to follow this divide eastwardly between Malheur and Burnt River to the edge of the reserve. The accompanying map will show the location of the summit as determined from the records in the Surveyor General's office. This is a natural division, and can be very well administered without conflict between the two reserves. It will not add much area to the western division, but all that portion south of the divide and all of the watersheds of the Malheur River should be under the control of the Supervisor located at Canyon City or John Day, since he will be in closer touch with people using this part of the reserve, than a Supervisor located at Sumpter could be.

Mr. Lage von Wernsted is now engaged in examining the boundaries of the Blue Mountains Forest Reserve. I have reported to him several areas which require an examination. The principal work in the nature of examinations will be additions to the reserve, although at this time it is quite improbable that large areas can be added since the available and best timber land has been taken up. The reserve boundary is exceedingly poor; in places considerable open area has been included within the reserve, and elsewhere some of the very best timbered lands have been excluded.

I submit a report on an elimination as shown by the accompanying map. This area has been petitioned by the South Fork and Murderers Creek Stock Men's Association. It was examined by me October 30th and 31st. The general character of the country is rough, precipitous and rocky. Much of it is open grass land. The south fork of the John Day river, cuts a deep canyon through what naturally would be a continuation of the main mountain range running in an easterly and westerly direction. This has resulted in cutting a very deep gorge with precipitous, rocky walls and rimrocks. The adjacent tributaries of the South Fork, the most important of which are Wind Creek on the west and Murderers Creek on the east are likewise rapid streams cutting their way through the country and forming deep canyons. The character of the rock is mostly lava, which is exhibited on the surface by well defined strata and on the sides of the canyons by rims formed by the deep fissuring resulting from the waters cutting deep canyons. The country is exceedingly rough and rocky. The tops of ridges are covered with loose lava or scab rocks and usually show no timbered growth. The bottoms and sides of the streams and gulches are invariably timbered and a short distance from the river good stands of yellow pine and juniper obtain. Higher up on the exposed rocky slopes juniper is practically the only tree existing. The stand of yellow pine in some of the gulches and creeks is excellent, and cruises fifteen to twenty M feet per acre. It is well worth retaining for forest reserve purposes. In general, a large, open basin-like though exceedingly rough country, is tributary to the South Fork of the John Day and Murderers Creek. The central portion of this area bears no timber at all. Toward the higher elevations scattered juniper first appears before emerging into the yellow pine type of forest at the crest of the mountain divide and along the water courses.

As a grass country it is excellent. Bunch grass abounds luxuriously on both the steep slopes and on the bare rocky ridges. The country is admirably adapted for spring and fall grazing of sheep and winter grazing of cattle. Cattle feed on the bunch grass in the more open territory all summer where water is not difficult to obtain. It is, however, a winter range for horses and cattle, but the climate is somewhat severe for wintering sheep. Good fall and early spring range can be utilized by sheep advantageously. The petitioners were not mistaken in their statements of the suitability of this range for fall and spring grazing. It is ideal fall range which lasts until about December 15th, but it is not advisable to utilize for the very early spring range because the ground gets to be very soft and remains so until the melting snows and spring rains have soaked into the ground and dried out. It is not advisable for the best interests of the reserve to permit sheep on the range earlier than May 15th, and I so recommend. Cattle also do considerable damage to early grazing in the spring, but the number are so few compared to the extent of this area that such damage is insignificant, and cattle should be allowed a year long grazing permit. The range comprised within this area is in excellent condition. It has never in the past been over grazed in the least. Both cattle and sheep occupy largely the same area for feeding. Bunch grass is tall and excellent.

Part of the area not now included in the reserve affords winter grazing for sheep and this area will be entirely excluded from the proposed boundary so that there will be no necessity for winter grazing of sheep on the reserve; however, there will be early spring and late fall grazing. Cattle, however, may use the range the whole year. I recommend that the boundaries be established as shown by the accompanying map. The people in time may change their petition and ask to have this whole area included in the reserve, but it is not particularly timbered land, and since the people now desire it excluded from the reserve, I would recommend it be so done.

(Signed) M. L. Erickson
Assistant Forest Inspector

PRIVILEGES.

There has been very little privilege work on the Blue Mountains W. The principal ones have been in the nature of telephone lines and hay privileges. There is one small privilege for agricultural land by J. F. Houston May 15, 1906, Maurys Mountain Reserve. The application was for 40 acres of agricultural and timbered land for pasturage in the Northwest quarter of the Southwest Quarter of Section 8, Township 18 South, Range 20 East W.M. On this land there is one barn for which a rental of \$2.50 per annum is charged. Of the 40 acre tract, 25 acres is timbered but suitable for pasturage, and 15 acres is hay land, also to be used for grazing after the hay is cut. The forester modified the application so as to allow only the use of the 15 acres of grass land for which a rental of 50 cents per acre was charged. The 25 acres of timbered land was rejected in this application with the provision that it should be applied for as grazing land under a separate application. The rental of 50 cents per acre for such land and \$2.50 per annum for the barn I think is entirely satisfactory.

A small privilege to Birdsong and Ammond for a sawmill was granted April 9, 1906, on the Maury Mountains Reserve. It is located approximately on the southern edge of the North-east Quarter of the Southeast Quarter of Section 35, Township 17 South, Range 20 East W.M.

Wm. J. Schmidt's Telephone.
September 22, 1906, Blue Mts.

This is a telephone line extending from Schmidt's ranch to Howard's postoffice, a distance of 5 1/4 miles. It crosses the Lookout Mountain divide and passes through the reserve for this whole distance. It is entirely a non-commercial proposition to be used by the settlers in Summit Prairie for their convenience in telephoning to Howard where connection on the main line to Mitchell and Prineville can be had. The timber necessary for the construction of this line should be granted under the free use privilege, and as the applicant is very willing to give the Forest Service the use of this telephone line without charge and in every way to make it a cooperative line with any that the Forest Service may construct. Therefore, the application as it has been approved should stand.

An application by Mr. Hazelton at John Day for a telephone line from Canyon City to Izee has been submitted and at this date approved by the forester. It is an important line, and passes through the reserve for a distance of approximately 20 miles, following the county road between Canyon City and Izee. The timber required for poles in the construction of this line has been secured by sale. This is a commercial enterprise, but it is badly needed in the Forest Reserve, and free use of it may be secured by the forest officers; therefore, I recommend no annual rental be made. This line is constructed in connection with the Bell telephone system inasmuch as their instruments will be used. In case the Forest Service desires to connect with this line, provision should be made with both Mr. Hazelton and the Bell system for the transfer of messages over their line.

John Ott and John D. Daly. — Wild Hay.
July 18, 1906, Blue Mtns.

This privilege is for the cutting of hay on 15 acres of land located in the vicinity of Ott and Daly's sawmill. The hay is to be used for work horses and milch cows in connection with the operation of the sawmill. A charge of \$1.33 1/3 per acre, amounting to \$20.00, was made and granted. About eight tons of hay was cut from this area. This makes a rental of \$2.50 per ton which is a very high figure. I think that the rental charge for hay which cuts no more than one-half ton per acre should be about 75 cents per acre. In the future Mr. Ireland should be instructed to determine the suitability of land for hay cutting and base a leasing price on a figure of 75 cents to \$1.00 per acre where the land furnished but one-half ton per acre.

Howard postoffice which was instituted in connection with mining operations is located entirely within the reserve. There are a few buildings, stores, hotel, livery stable, etc., which are perhaps on unpatented government land. An investigation and report should be made by the Supervisor as soon as possible to determine the validity of the claims and also to

learn if any of the buildings used for commercial purposes are located on unpatented mining claims or on public reserve land. In the event that the stores and commercial houses are situated on unpatented land, special permits and an annual rental should be charged for the privilege of operating these commercial enterprises on the reserve.

There is a proposed proposition for pipe line, power plant and irrigation of Strawberry Creek, but no application was submitted to Supervisor Ireland at the time I made my inspection; but from information from settlers in Prairie City Valley, and also from a water notice which Henry Ireland and myself found on the headwaters of Strawberry Creek, it appears that the use of the water for some sort of development and power purposes is contemplated. In fact, some construction work had already been started in the nature of constructing a dam on the creek. The people in the valley below desire the water to be undisturbed so that they can have the full benefit of its use for irrigation purposes. This matter should be investigated by the Supervisor, and in case any trespass or preliminary construction work is being carried on, the matter should be reported as trespass.

In summarizing the work and privileges, there are not many projects started or contemplated, and I predict very little of this sort of work within the next two or three years.

CLAIMS.

I have nothing to report on claims. A very few examinations made by the forest officers seemed from records in the office to be made out in a very careful manner. I did not examine any claims in the field.

The Supervisor is thoroughly familiar with the land laws and uses good judgment in deciding upon the validity of the claims. His recommendations should in all cases be approved.

(Signed) M. L. Erickson
Assistant Forest Inspector.

Recommendations

1. That no annual rental be charged for the Hazelton telephone privilege.
2. That Supervisor Ireland be instructed to investigate the validity of commercial enterprises being conducted at Howard post office, particularly to determine whether the business houses are located on valid claims or on public reserve land.
3. That Supervisor be instructed to investigate the proposed project on Strawberry Creek.

DENDROLOGY.

Of particular interest sufficient to warrant notice is the occurrence in uncommon abundance of mountain mahogany, *Cercocarpus ledifolium*, which grows on the dry, exposed, situations often forming thickets so dense and impenetrable that detours around them when traveling horseback must be made. With it is associated the western juniper, *J. occidentalis* which occurs in scattered stands on the lava rock mesas. Western birch, black alder, narrow leaf cottonwood, and several willows are prevalent along streams on north slopes especially in the lower country bordering on the edge of the reserve.

The usual commercial conifers abound. These are yellow pine, red fir, tamarack, lodgepole pine, Engelmann spruce, white fir (*Abies grandis*), Alpine fir, and Alpine pine, *P. albicaulis*.

(Signed) M. L. Erickson
Assistant Forest Inspector.

PLANTING.

Natural reproduction is readily secured everywhere. There is no necessity for extensive planting on this reserve. In connection with the establishment of rangers' nurseries, there should be planted as an experiment seed of sugar pine. The seedlings might be tried on some suitable areas in the Blue Mountains W. to see if sugar pine would be suitable for planting in this country. The western portion of the reserve is not located far from some good bodies of sugar pine. In case this experiment proves the success of sugar pine for this region, I would recommend it be planted in all the open areas suitable for its occurrence instead of yellow pine.

There are several nursery sites within the reserve, one good one could be located at the rangers' headquarters site on Ochoco Creek in the western end of the reserve; another site would be on Murderers Creek about seven miles above Stewart's ranch.

There are no watershed studies necessary as far as I am aware.

(Signed) M. L. Erickson
Assistant Forest Inspector.

PRODUCTS.

Considerable dead and down and dead standing lodgepole pine timber which has been fire killed is found on the slopes of the Strawberry Mountains; probably twenty million feet of such timber exists. Within this area there is also some fire killed tamarack, spruce and fir. This area can be studied in connection with a proposed study of dead lodgepole pine on the eastern division of the Blue Mountains Reserve.

A great abundance of tamarack of large size is found on this reserve. Tamarack is a very valuable wood but not sufficiently appreciated. I recommend that a study of an experimental nature be made to determine particularly the strength of material and to what extent its reputed tendency toward ready cleavage effects its use for construction purposes. The material should be tested at the laboratory to determine its relation in respect to strength of material with other species. Tamarack is recognized as very strong material and is much desired for posts, telephone, telegraph poles, railroad cross ties, and so forth, but this is as far as its good qualities are believed in. In my mind it furnishes excellent saw timber for lumber of good quality for various uses. Material in the nature of sawed sticks can be secured at Ott & Dailey's sawmill located within the reserve, but since this would require a haul of 60 miles to the nearest railroad point the expense would be too great. I think tamarack can be secured at several small sawmills located closer to a railroad point; for instance, at Sumpter or Elgin. It will, however, probably be necessary to purchase this material.

(Signed) M. L. Erickson
Assistant Forest Inspector

PROTECTION.

Forest Fires

Forest fires have done little damage to the reserve, and there is not a great possibility of extensive forest fires occurring on any part of the reserve. The most dangerous region is the high altitude in the Strawberry Mountains. In general, the country consists of an open forest with very little underbrush so that a fire, if started, would burn very little timber and would also be easy to extinguish. The main business of the reserve will be for sometime the care of grazing matters, and no extra men will be needed for patrol work alone. There are a few suitable sites in the reserve which will afford lookout stations, so that a ranger may be able to see over large areas and thus avoid riding over territory for the purpose of locating small fires. No lookout stations, therefore, are recommended, except as will be suitable from natural topographic features.

Roads

Quite a number of traveled roads exist throughout the reserve; the principal ones are the Dalles Military Wagon Road, and the county road extending from Prairie City to Drewsey, and the Burns-Canyon City stage road, the Drewsey-Silvies Valley-Calamity Creek road, the Canyon City-Izee road, Big Summit Flat and Ochoco Creek road. Several short roads or roads not much traveled and which are not supported by the county are located in parts of the reserve. One important road extends from Bear Valley to Stewarts ranch in Murderers Creek. Another road taps the South Fork of the John Day country, by coming in from Paulina down Wind Creek to Donaldson's ranch on the South Fork of the John Day River.

Another wagon road extends from Wolf Creek across the Mountains to Dayville. A short wagon road was constructed extending from Silvies Valley following the divide alongside the Silvies River to Emigrant Creek. Again, there are several roads through the southern part of the reserve leading to Horton & Sayre's sawmill.

Trails

Very few defined trails exist in the reserve, simply for the reason that most parts of the country can be traveled easily without a defined trail. Throughout the Strawberry range it is exceedingly rough; some trail construction work will necessarily be required to facilitate getting about the territory. A principal one should extend from the end of the road at Strawberry Lake to cross over the divide into Logan Valley. There will be considerable rock work and careful grading to be done on this trail, but it is of sufficient importance to warrant an expenditure of a reasonable amount of money. There should be a main trail cut out along the summit of the Blue Mountains extending from John Day River from about the vicinity of Donaldson's Ranch to the west end of the reserve. This is recommended for the reason that rapid travel can be secured from one end of the reserve to the other, which is very necessary because of the shape of the reserve which requires traveling back and forth in an easterly and westerly direction. There need not be much grade or rock work on the construction of this trail since it will follow the summit very closely and pass through much open timbered land, where even no underbrush will interfere. From this main trail one can easily go to the right or left to parts of the reserve without much additional travel. It will also serve a very useful purpose to avoid crossing the deep canyons which are prevalent on the north side of the divide, and will also avoid passing through much of the scab rock and lava covered land on the south side of the divide. I will not at this time recommend additional trail work, since the country is easily traveled over, and the further development of industries in the reserve may change the policy in regard to trail building. Mr. Ireland who is very well trained in trail construction work and the laying out of trails, will do very satisfactory work in this respect, and I would recommend approval of his recommendations on trail building.

Cabins and Pastures

Maury Mountains Reserve: A few pasture sites in this reserve should be selected, one at the southwest edge of the reserve, another towards the center of the reserve near Ferguson's ranch on the south side, another on the east side at Morris's ranch. The Morris claim will be relinquished soon, from information Mr. Morris supplied Ranger Ireland and myself. On this claim there is an excellent house and chicken coop, a fair barn and a large pasture, which improvements will all become forest reserve property upon the relinquishment. It will be absolutely necessary for Mr. Morris to relinquish this claim since he has not been living on his own claim, and this belongs to his son. This claim with the improvements will make an excellent headquarters for the Maury Mountains Reserve. Ranger Morris (son of claimant) is now making this his headquarters.

Blue Mountains west: Many pasture sites will be needed on this reserve. After the grazing season closed it was impossible to find feed on any part of the reserve because all areas had been grazed out except in the vicinity of Wind Creek and Murderers Creek. The

selection of headquarters sites has been very inefficiently carried out since the forest guards did not give definite descriptions of locations of areas which they desired for reserving. Also not half the number of sites were selected which should have been. Many pastures are needed. The forest officers have great difficulty in securing feed during the summer for their horses, and as a result their stock became poor and were unable to do the amount of traveling required of them. Many good pasture sites should be selected in this reserve, and where they are within the limits of the horse and cattle range they should be fenced. Guard Bennett in District No. 1 had the least trouble in securing horse feed and camping places. He reports that the stock men in this vicinity were quite good about reserving areas for pack animals. Headquarters sites should be located on Mill Creek, Ochoco Creek, Big Summit Flat, Little Summit Flat, head of Wind Creek, on main fork of Murderers Creek in Bear Valley, Silvies Valley, Emigrant Creek, Calamity Creek, Ott & Dailey's sawmill, Logan Valley, and Thompson's Hot Springs. By these headquarters sites I do not mean permanent cabins and winter quarters, but on several of the most important places cabins should be constructed. Supervisor Ireland's recommendations for the locations and immediate construction of cabins should be approved. In cabin construction arrangement ought to be made with near-by sawmills whenever it is possible to secure lumber from these mills over a wagon road to furnish whatever lumber is needed for rangers' cabins free of charge if they enjoy the privilege of a timber sale. Flooring and roofing and casings made of lumber are necessary and much more satisfactory in the construction of rangers' cabins than split boards. The floors, ceilings, windows, doors, etc., should at any rate be made of sawed lumber so as to avoid a vast amount of labor and the inconveniences that accompany the manufacture of finish material for cabins with the ordinary tools furnished. It is also more expensive than purchasing the lumber outright. Wherever this required amount of lumber can be hauled or packed in from a local sawmill for the construction of a cabin I would advise doing so.

Telephone Lines

Communication with headquarters at Prineville by telephone is exceedingly poor. If a person living in the vicinity of Burns or Canyon City wished to 'phone to Prineville, the message must be transmitted by the way of Baker City, Biggs and Shaniko, because there is no connecting line across the country, uniting eastern and western interior Oregon. I would strongly recommend the construction by the Forest Service of a telephone line from Dayville to Howard. This will cover a distance of about thirty miles and extend through the reserve for the greater part of the distance. It will also afford direct connection with Canyon City and all points south and north of there. The cost of construction of this line need not exceed the amount of wires, insulators and instruments. I figure that the forest officers can stretch the line from tree to tree and make it prove quite satisfactory, and also make it a central line so that forest officers could 'phone from it at any time to the Supervisor by use of the pocket instruments. From this line short spurs could be extended to the southern part of the reserve; for instance, a 'phone line which now is being built from Canyon City to Izee will make a direct connection with a well settled community and important district in which much reserve business is conducted. I do not, however, recommend the construction of this line from Izee to connect with the line from Dayville to Howard at this time because it is very likely that private parties will build from Izee to Paulina to Prineville.

A peculiar situation exists in connection with the Pacific States Telephone Company and private lines. The company is very anxious for private interests to construct a line and the company allows the use of their instruments very cheaply and gives them full privilege of connecting with all parts of their own line; however, the company has stated that it would refuse to make connections with any private lines which should build between Dayville and Antone, a distance of twenty miles, which line would connect Eastern Oregon by way of Canyon City and Baker City, and Western Oregon by way of Mitchell, Shaniko and The Dalles. It appears that the Pacific States Telephone Company controls the telephone business, and by compelling people who wish to 'phone from Dayville to Anton, a distance of twenty miles, to 'phone in a roundabout way via Baker City and Biggs so that a larger toll may be charged. Some arrangement should be made with this company and the Forest Service, so that any lines which the Forest Service sees fit to construct to connect with their lines, transmission of messages over the company's wire may be secured.

A 'phone line should extend from Johnson's ranch to Ott & Dailey's sawmill, and from there either to Harney or up Calamity Creek to Silvies Valley; but perhaps private capital will construct these lines, and in case such is contemplated, the immediate necessity for the work being done by the Forest Service is not urged since fires are the only matter requiring such immediate attention as the use of a telephone, and forest fires in this part of the reserve are not dangerous.

Insect Enemies

A species of beetle working on the pine cones has been doing serious injury to the seed crop of yellow pine. Fully 50 per cent of the trees of yellow pine have some evidence of attack by this beetle. It works by boring through the scales of the cones, completely destroying the possibility of maturing the seed. As a result the seed crop for the next season in yellow pine will be very small.

Lodgepole pine is quite seriously affected by the Oregon bark borer, Dendroctonus terebrans, which seemingly is just beginning its work in this reserve. The trees are easily identified when infested with this beetle. The bark shows signs of the sap being exuded from holes in it, forming the so-called pitch tubes. The beetle works immediately underneath the bark in the cambium layer, eventually completely girdling the tree and thereby causing its death. The beetle emerges from the bark about September, and I have found several specimens lodged within the pitch tubes. I do not know how extensive the damage is on this reserve, but I think it is sufficiently great to warrant an investigation. If the insect enemy continues to increase, there will be serious danger for the preservation of the lodgepole timber.

Game

Deer, elk and antelope are the large game which are found on this reserve. The slaughter of elk and mountain sheep has been in the past so extensive that the latter species is not to be found anywhere on the reserve, and elk are only rarely seen. A bunch of six antelope was seen by Ranger Ireland and myself in the vicinity of Murderers Creek. They are, I believe, the only band of antelope in the reserve.

The game laws are not strictly enforced, and indiscriminate slaughter has been the result. The Umatilla and Warm Springs Indians have been doing the greatest damage to the game in the reserve. Also the Klamath Indians from the Klamath Indian Reservation, together with the Piutes, were seen around Prineville, but as to the amount of damage they do by hunting I am not aware. One Indian with two squaws from Arlington, Oregon, with a band of about twenty horses was seen on Murderers Creek, and upon being asked his business in the reserve he informed us he was merely traveling. There was no indication of any game having been killed by him. I do not think serious damage would be done by the Indians if they are not allowed to come in bands upon the reserve. The settlers are accustomed to killing deer out of season, but this is mainly for their own immediate use. Any danger from this source is not great. Deer are quite abundant on the reserve still, and with ordinary protection I think they will increase.

EQUIPMENT.

The office is well equipped with field instruments, desks, furniture and chairs. Most of the material is all new and complete. There are sufficient shovels, axes, mattocks, etc. He has on hand in the office for use in cabin construction and exceptional field work, one handsaw, new; one square; one staff compass and tripod; one claw hammer; one cross-cut saw; shoeing outfit; sufficient compasses, hatchets and badges for present use. But for next year because of a larger force necessary to administer the reserve, more compasses, badges, marking hatchets will be needed. Also another staff compass and tripod will be required since there will be an immense amount of reserve boundary work to be done.

I recommend that one 66 ft. chain be condemned and turned in to the Washington office. It possesses no flag except one at the 98th link. There are but 99 links all told in the chain, although it measures 100 feet in length. It cannot be used for surveying on rough ground where breaking the chain is necessary.

Considerable barbed wire will be needed in the construction of rangers' pastures. There will probably be required about 2000 lbs. of No. 3 strand barbed wire for next season. I would recommend the No. 3 strand since it is considerably cheaper than No. 4. It is, however, somewhat lighter in weight, but the settlers claim it is just as suitable as heavier wire. Mr. Henry Ireland believes this wire is the most suitable of any that he has ever seen. It costs 5.22 cents per pound. Three strands of barbed wire on an upright fence will require 615 lbs. of wire, making a cost of \$32.37 per mile. When four wires are used the cost will be \$38.80. I do not believe four wires are necessary for rangers' pasture fence since three wires stretched will, if the fence is kept in good order, keep out all ordinary stock.

On rocky or ridgy land I do not recommend setting posts in the ground and building an upright fence. A much more serviceable one is the leaning fence which is constructed by raising a post with a smaller one, set in a V-shape. At regular intervals dummies should be established. These dummies consist of two additional braces to the fence post, making a triangular base. Strips are then nailed to connect these pieces at the bottom, and stones, rocks or other heavy material is placed in here to hold the posts down and keep them in an upright position. This will also brace the fence so that the tension lengthwise will not result

in overturning the fence. This sort of fence can be seen in any part of the west, especially where it is constructed over irregular and rocky land. Many ranchers prefer this sort of fence even on level land instead of setting posts in the ground. They claim it is more permanent and requires less attention. When posts are set in the ground they must be renewed in the course of several years.

Through some peculiar arrangement in the transfer of property there are now fifteen pairs of calipers at the Prineville office. Mr. Ireland does not need more than two pairs. This is for the information of the office of supplies, so that some use can be made of these calipers elsewhere.

The cost of the amount of barb wire needed for the construction of three or four pastures which are needed immediately requiring the use of 2000 lbs. of barb wire will be \$105.00 for the wire, and a sum of five or ten dollars for staples and other accessories. The cost of building barb wire fences is too great to inaugurate all at once. Many of the pastures are in the higher regions where pole timber can be secured, and the use of barb wire is not necessary. A good pole fence approaching the jack fence (or leaning style) will serve a very good purpose, and in time barb fences can be replaced in their stead.

A summary of the cost of protection may be approximated as follows: For telephone wires, in construction about thirty miles of telephones, \$200; instruments, insulators and other accessories, \$75; lumber, windows, hinges, nails and other material for cabins, \$150; powder for trails, \$50; making a total of \$475 for immediate use in protection, which does not include travel or like incidentals.

Office

Supervisor Ireland was not allowed the privilege of renting an office room. As a result he has converted his residence so that part of it is used for the office. About one-third of the downstairs is devoted to his office. He pays \$12 a month for the rent of the house, and he cannot use the second floor which is too small and poorly equipped; hence, part of this is now used as storage room for Forest Service equipment. I recommend that he be allowed \$6 per month for office rent for the past year from May 1st, the time he took charge of the Blue Mountains reserve. He should be instructed to send in his account also for fuel and light. The light amounts to 40 cents per month.

It is not advisable for the Supervisor to attempt to secure an office in Prineville this winter. There are no vacant buildings or rooms. I therefore recommend that the Supervisor make his home the office until next spring when a move is advised to change headquarters from Prineville to John Day or Canyon City.

I recommend a removal of the office from Prineville to either John Day or Canyon City. Prineville is a poor place for reserve headquarters. It is situated at the extreme west end of the reserve and is six miles distant from it. This makes it necessary for the Supervisor to travel in an easterly direction only when he desires to go over the reserve. The mail facilities while good for users of the reserve located in western Crook, Wheeler and Wasco counties, yet is not at all suitable for convenient communication between users of the reserve located

in eastern Crook County, Harney and Grant County, all of which is immediately adjacent to the reserve. It takes three to four days for mail to reach Prineville from Seneca, Van, Burns, Canyon City and Prairie City. The stage and mail service from the eastern part of the reserve is not good; none of the routes furnish daily mail, and in the winter time but twice a week service is secured.

The Maury Mountain Reserve which is located nearest to Prineville, affords no serious difficulty in handling. An efficient officer stationed there can care for the whole area (57,000 acres) without frequent supervision.

I advise the location of the headquarters of the Blue Mountains W. either at John Day town or Canyon City. These places are but 1 3/4 miles apart, and are towns about the same size and possessing the same facilities. Supervisor Ireland, however, prefers John Day town to Canyon City, since it is a more suitable and healthy place to live in; also he will be able to secure a house and office in this place. This will be more centrally located than any other town of suitable facilities in the vicinity of the reserve. The mail and stage facilities are good. There is daily and nightly service from Burns to Canyon City, and direct communication to Austin, the terminal of the railway, a distance of 33 miles from John Day, will make an outlet to the outside country very convenient. There are better hotel accommodations at the two towns which will be of great assistance when large attendance for special occasions, such as stock meetings, will demand all the available room. For instance, the gathering of permit holders at the Canyon City stock meeting last November, the accommodations of both towns were packed to the utmost to support the large number of people who were present. Closer touch with more users of the reserve will be secured. The difficulty in getting communication to persons living in the vicinity of Burns, Malheur River, Bear Valley, Silvies Valley, Izee and John Day valley, will be avoided. Canyon City being the county seat of Grant County will also be desirable in aiding in looking up records. There is considerable travel between John Day, Canyon City and points north and south because it is the main route to Burns and central Oregon.

I therefore recommend that Mr. Ireland be instructed to move the headquarters from Prineville to John Day or Canyon City, preferably John Day, on May 1st, 1907. It will hardly be possible for him to move earlier than this since the bad roads will not permit of freighting his outfit across the country.

An alternative to changing the headquarters of the reserve would be the division of the western division of the Blue Mountains reserve in two parts, making the south fork of the John Day River the division line; but I do not approve of this plan at present, the main reason being that there is not enough available supervisor material in the state of Oregon.

Inspector Allen has just informed me that there is a plan on foot to make Prineville the headquarters for administration of a portion of the Blue Mountains West, the Maury Mountains, a portion of Fremont Reserve, and that part of the Cascade east of the Cascade Mountains. This will be a very suitable arrangement and will solve the problem of an additional supervisor for the Fremont Forest Reserve. In case the office remains in Prineville the division of the Blue Mountains W. should be the South Fork of John Day River. Perhaps it may be advisable to allow Supervisor A. S. Ireland to remain at Prineville to administer

these areas and secure a new man located at John Day to take charge of the eastern portion of the Blue Mountains. This can be determined later when a more particularly definite arrangement is made as to the final disposition of the Blue Mountains E. Should a new man be secured to take charge of eastern division, Henry Ireland would be well fitted to take charge of that portion of the Blue Mountains W. located at Canyon City or John Day.

SUMMARY OR RECOMMENDATIONS.

Protection and Equipment.

1. No extra force of men needed for patrol work alone. Forest fires infrequent and not dangerous.
2. That a trail be constructed from end of wagon road at Strawberry Lake, across the divide to Logan Valley.
3. That another trail be cut along the main summit from Donaldson's Ranch on South Fork of John Day River to western edge of reserve. Not much grading or cutting necessary in the construction of this trail.
4. Mr. Ireland's recommendation for trail work should be approved.
5. Should select about three pasture sites on Maury Mountains reserve.
6. Recommend establishment of rangers' headquarters at the Morris claim on Maury Mountains Reserve.
7. Many pasture sites for rangers' use should be selected on Blue Mountains W.
8. Supervisor Ireland's recommendations for cabin construction work should be approved.
9. Advise use of lumber for finish, flooring, ceiling, etc. in cabin construction.
10. That a telephone line be constructed by the Forest Service along the main line divide between Dayville and Howard.
11. All effort should be made to secure free use and connections with private telephone lines, and those controlled by the Pacific States Telephone Company.
12. That study be made of the insect enemies affecting lodgepole pine and the cones of yellow pine.
13. That one 66 ft. surveyor's chain be condemned.
14. About 2000 lbs. of No. 3 strand barb-wire be allowed Supervisor Ireland for pasture fences.
15. Advise the construction of leaning fences over rocky and rough ground.

16. That Supervisor Ireland be allowed \$6 per month rent on office room, which is located at his residence.

17. The headquarters of the Blue Mountains W. should be moved from Prineville to John Day or Canyon City May 1, 1906.

ALLOTMENTS.

The present allotment for the Blue Mountains W. and Maury Mountains Reserve is as follows:

Blue Mountains

One Supervisor at \$1200, 11 mo.	\$1100.00
One Forest Assistant \$1456, 12 mo.	1456.00
One Deputy Forest Ranger \$1000, 12 mo.	1000.00
Two Assistant Dep. For. Ranger \$900, 12 mo.	1800.00
Four Government Guards \$720	1440.00
	\$6796.00

Expenses:

Travel	Equipment	Communication	Shelter	Protection
\$150	\$50	\$50	\$75	

Maury Mountains:

One Supervisor \$1200, 1 mo.	\$100.00
One Asst. Forest Ranger \$900, 12 mo.	900.00
	\$1000.00

Expenses
\$50

Instead I recommend the following, and will not separate the Maury Mountains allotment from the Blue Mountain, because I do not know just what proportion of expenses should be segregated for it:

One Supervisor \$1500, 12 mo.	\$1500.00
Four Assist. Forest Rangers \$900, 12 mo.	3600.00
Five forest guards \$900, 6 months	4500.00
Two forest guards \$900, 5 mo.	1800.00
One clerk \$900, 12 mo.	900.00
	\$12300.00
One Assistant Forest Ranger Maury Mountains 12 mo.	900.00
Total for salaries	13200.00
Travel	500.00

Equipment, communication, shelter and protection will require an amount of about \$880 separated as follows:

Barb wire	\$105.00
Material for cabins	150.00
Wire, instruments, etc. for telephone	275.00
Powder for trail building	50.00
Other equipment for necessary tools, temporary assistance and necessary outfit for cabins, trails, pastures, telephones, reserve boundary and such work	300.00
Total	880.00
Total for salaries	\$13,200.00
Travel	500.00
Total for equipment, etc.	880.00
Grand total	\$14,580.00

Therefore, I recommend that an allotment of \$14580.00 be allowed the Blue Mountains W. Revenues from the reserve last year including the Maury Mountains, was about \$28,000.00

(Signed)

M. L. Erickson
Assistant Forest Inspector