

**REPORT**  
**ON HEPPNER, OREGON, NATIONAL FOREST**

By  
M. L. Erickson, Forest Inspector

July 1907

Portland, Oregon, September 16, 1907.

The Forester,  
Washington, D.C.

Dear Sir:

The enclosed report on the Heppner National Forest by Inspector Erickson is the result of his visit at my request to see how Mr. Chidsey was starting this year's grazing.

When the Forest was organized early in the year Mr. Chidsey was considered too inexperienced to handle this work alone, so Mr. Sheller was sent to help him until the permits were issued. Sheller then went to the Yakima. When it was time for the sheep to go on I feared Chidsey would have trouble in settling them according to the permits, so sent Erickson to help if necessary. His work was hardly inspection, for things were too new to be inspected; nor could he, at the opening of the season, before results became apparent, do much toward recommending a detailed system for next year. The main object was to help Chidsey out of any imminent difficulties and correct any mistakes made by Sheller if possible.

A regular inspection report was not expected but this contains such conclusions as he would reach on a special trip of the kind.

Mr. Erickson's report is lacking in his signature because it was written after he went away and much delay would be occasioned by sending it to him.

Very truly yours,

Chief Inspector.

Enclosure

Portland, Oregon, September 16, 1907.

Mr. M. L. Erickson,  
Leavenworth, Washington.

Dear Erickson:

I am returning the Reconnaissance pages of your report on the Heppner for correction of the figures. You have made five land classes for each, the acreage, stand per acre, and total quantity of timber. Multiplication of your own acreage by your own acre-stand does not give your total. For example:

You say there are 584,352 acres yellow pine land bearing 14 M per acre and make this amount to 2,045,232. I can not make this come out to anything but 8,180,928 feet.

Very sincerely yours,

Chief Inspector.

**Section I — Sales.**

1. No individual sales; nothing to report.
2. Future timber sale work will be very small for some years to come because the only probable purchasers of timber in the Forest are the local sawmill companies and these own large timber holdings adjacent to their mills.
3. For guidance in future timber sale work it is only necessary to merely outline a few suggestions relative to stumpage prices. Yellow pine, tamarack, red fir and lodgepole pine are the principal species of commercial importance. The species sought after and most manufactured is yellow pine. Locally yellow pine stumpage is valued at \$1.00 per M feet. Both red fir and tamarack appear to have no fixed stumpage values in the local market. Mr. Chidsey is basing minimum stumpage prices on the Heppner Forest from the figures decided upon for the Imnaha and for the Blue Mountains Forest. I can find no objection to the application of these values to the Heppner, since the general forest conditions are almost identical, but due to the general rise in timber values and better transportation facilities, better market and more easy accessibility, I would recommend a substantial raise in stumpage values for the Heppner Forest.

The present schedule of minimum stumpage values is as follows:

Yellow pine saw timber .....	\$2.00 per M 16" min.diam.
Tamarack saw timber .....	\$2.00 per M 16" min.diam.
Red fir saw timber .....	\$2.00 per M 16" min.diam.
White fir saw timber .....	\$1.50 per M 16" min.diam.
Lodgepole pine saw timber .....	\$1.50 per M 12" min.diam.

**Telephone poles**

Red fir, tamarack, lodgepole .....	\$0.01 per lineal ft.
Cord wood (defective) .....	\$0.50 per cord
Poles, 3" butt diameter .....	\$1.25 per 100 poles
Poles, 5" butt diameter .....	\$1.50 per 100 poles
Dead timber at 1/2 rate of live timber	
Dead cordwood .....	\$0.50 per cord

**Recommended minimum timber prices:**

	<b>North slope</b>	<b>South slope</b>
Yellow pine saw timber .....	\$2.50	\$2.25
Tamarack saw timber .....	\$2.50	\$2.25
Red fir saw timber .....	\$2.50	\$2.25
White fir saw timber .....	\$1.50	\$1.50
Lodgepole pine saw timber .....	\$1.50	\$1.50
Telephone poles under 16" D.B.H. and 30 ft. in length, tamarack and red fir, per lineal ft. ....	\$0.01-1/4	\$0.01
Other species, same dimensions .....	\$0.01	\$0.00-3/4

	North slope	South slope
Tamarack and red fir poles 12" D.B.H. and 20 ft. long .....	\$0.01	\$0.00-3/4
Other species, same dimensions .....	\$0.00-3/4	\$0.00-2/3
All species 15 ft. long and 8" D.B.H. or under .....	\$0.00-1/2	\$0.00-1/3
 Cordwood (green, defective) .....	 \$0.75	 \$0.75
Cordwood (dry, sound) .....	\$0.50	\$0.50
Cordwood (dead, partially unsound .....	\$0.25-35	\$0.25-35
 Ordinary poles for fencing or other use, 5" butt diam. ....	 \$0.02 ea.	 \$0.02 ea.
Ditto, 3" diam. ....	\$0.01 ea.	\$0.01 ea.
 Posts 7 ft. long, yellow pine, red fir, tamarack, juniper .....	 \$0.02 ea.	 \$0.02 ea.
Other species .....	\$0.01 ea.	\$0.01 ea.

Shakes, lagging, stulls, and other materials measured by cords or B.M. at regular values.

The reason for a difference in stumpage prices for timber taken on the north slope and the south slope is the difference in accessibility and supply. The timber on the north slope of the main mountains divide is nearer to settlements, to towns, sawmills. Good roads extend in various directions to the source of the timber and it can be obtained much cheaper than on the south side where fewer settlements are situated near it, and roads are sparse. It costs more to obtain timber on the south side and supply is much more abundant. The distinction in stumpage values has been made on saw timber and large poles only. Posts, cordwood and small poles can be obtained almost as easily on the south side as north of the summit, hence similar values. Saw timber occurs in more inaccessible places on the south slope. There are no sawmills. With poles and posts no distinction there has been made in values between dead and living timber. In most cases green stuff is taken. For fencing dead sound poles are generally used but the stuff is thoroughly seasoned and of just as much value as the green poles for this purpose. Dead wood is almost always used for fuel; the taking of it in large quantities results in cleaning out the forest. Its disposal should be encouraged. Among much of the dead material is a lot of decaying stuff hardly suitable for any purpose. Some of this gets included within an attempt to get clear dead sound material. A reduction in value for partially unsound wood has been made in order to help encourage taking out a little more of it.

4. All the Forest officers on the Heppner are entirely new men. Only one is an experienced timber man; the others are good grazing men but know very little else. Therefore I recommend the authority to make class A sales be granted only to Guard Sylvanus Wright. Mr. Wright has had much experience in timber work and could handle small sales to the extent of \$50 very well. In addition, there is no urgency of demand that would afford a reason why other Forest officers should be given this authority. All Forest officers may, however, be authorized to grant free use permits.

5. I think it best and specially recommend that Supervisor Chidsey be granted authority to make class B sales not involving over \$100 worth of material. This means that special uses not

involving the cutting or destruction of more than \$100 worth of timber may be granted by him also. Chidsey has not yet handled any sales but his judgment in this kind of work is good and I believe small sales under \$100 may be safely entrusted to him.

6. No timber trespasses.

9. No timber settlements.

### Free Use.

Up to the present date the free use business has been small. During the fall after the farmers have completed harvesting, the demand for wood from the Forest for a winter's supply is predicted to be great. There are two reasons for this.

First. The probable fuel shortage.

Second. The only available timber for all the settlements over the big farming country in the vicinity of Heppner, is in the Heppner Forest. Some people come a distance of 70 miles for wood.

Mr. Chidsey has the proper idea about handling the free use business. He is establishing free use tracts and marking all the timber within them which is to be cut. During the grazing period it is hardly practicable to detail a guard to measure all the material taken out and he has not done so because the importance of properly handling the stock upon the range demands the use of his whole force this season for such work.

With settlers who apply for cordwood, posts or poles only, it is reasonable to assume that they will take only what is actually needed for their own use, and during the middle of the grazing season not many ranchers have the time to obtain their wood because of the urgent work connected with harvesting. Therefore since it is hardly practicable to detail men to look out for and measure all the wood taken out at this time, I would recommend that no special effort be made to do it. In the fall when the big free use business occurs and the sheep grazing is out of the way, definite days should be set on which a free use tract may be visited to haul out wood, when a Forest officer will make it a point to be present to measure up the material taken out and see that the proper cutting and disposal of brush has been done. It is suggested that on tracts where the business is least, one day per week be allowed upon which wood may be taken out; on tracts where the most business occurs, twice per week periods should be established. In issuing all permits, the days of the week upon which applicant may obtain his timber should be specified on the face of the permit. The days should also be advertised by posting notices in post-offices and by other means which may suggest themselves to Forest officers.

### Reconnaissance

Mr. Sylvanus Wright who is now a forest guard was in the employ of a lumber company which sought to gain possession of all the timber now included within the Heppner National Forest just prior to its withdrawal. He was engaged in making estimates on all the timbered lands with a view of applying Northern Pacific scrip on it for this company. In this way he became familiar with the stand of timber on all portions of the Forest, particularly the western division. His estimates over seven or eight townships averaged 14,000 ft. B.M. per acre of merchantable timber. Of course this applies strictly to the well timbered area. In arriving at a recommendation it is, therefore, merely necessary to classify the land in order to obtain a fair estimate of the total stand on the Heppner National Forest.

### Land Classification of Heppner Forest.

1. Yellow pine land bearing 14,000 ft. per A. 50%	
146,088 acres, total amount timber .....	2,045,232 M ft.
2. Yellow pine land bearing 6,000 ft. per A. 10%	
29,217 acres, total amount timber .....	175,306 M ft.
3. Lodgepole pine land bearing 5 M ft. per A. 20%	
58,435 acres, total amount timber .....	292,176 M ft.
4. Lodgepole pine and tamarack land	
bearing 10 M ft. per A. 10%	
29,217 acres, total amount timber .....	292,176 M ft.
5. Open grazing land, meadows, scab rock flats,	
grassy buttes, etc., no timber 10% .....	_____ M ft.
Total .....	2,804,890 M ft.

These figures show a total of close onto 3 billion feet of timber, or an average on the whole area of over 9,000 ft. B.M. per acre.

Considering the excellent quality and great abundance of the yellow pine forest and also the high average of the lodgepole forest, it does not appear unreasonable to place this high estimate on the Forest as a whole. Instead, I would be inclined to consider this estimate conservative due to the fact that a careful estimate of so large an area of the yellow pine land has actually been made by Mr. Wright; his knowledge of the average forest stand ought to be a good basis upon which to judge.

### Summary of Recommendations

1. Establishment of minimum stumpage prices as recommended in body of report on this section.

*{I am not prepared to endorse the proposed raise at present. (initialed) E.T.A.}*

2. That Guard Sylvanus Wright be delegated to make class A sales up to \$50 in value.
3. All Forest officers be granted authority to issue free use permits.
4. Supervisor Chidsey be allowed authority to make class B sales amounting to \$100 in value.
5. Little attention be given to measuring cordwood free use material during the middle of the grazing season.
6. That certain days of the week during the fall be set aside and advertised upon which a Forest officer will be present at a free use tract to scale up all material taken out. Applicants should not be allowed to take out wood other than the established days, only extreme urgency excepted.
7. The day or days of the week upon which material at a certain free use tract may be taken out should be specified in the permit issued the applicant.

## Section II — Silvics

A peculiar forest condition of ecological significance which I have observed to exist in the Forests of southwestern Idaho and eastern Oregon was again brought to my attention very distinctly in the Heppner Forest by striking examples. It is the relation of lodgepole pine reproduction under mother? trees of tamarack (*Larix occidentalis*) on burned areas, which were originally a uniform mixture of tamarack and lodgepole. The original type is changed to an altogether different temporary type by the agency of fire and its effects are of the utmost importance in a silvical way.

I deem this study of sufficient importance to warrant a brief discussion, because it amounts to a question of what kind of a forest will result from different kinds of management.

As determined from observation of the rare existing patches of the original forest not affected by fire, it is seen that this original forest is a mixture of lodgepole pine and tamarack together with some white fir (*Abies grandis*) and red fir, in which forest composition tamarack shows clear evidence of being the dominant tree. Lodgepole pine is as abundant but by its occurring in mixture with these species having the ascendancy, it reveals clearly its inability to compete with them and is slowly losing ground by being overtopped and suppressed.

In a definite forest of this type composition tamarack occurs in its best development growing to a height of 150 feet and a diameter of 40 to 50 inches. It grows perfectly straight, tall, clean-bodied and presents a gradual taper. It is nothing unusual for trees to cut from 6 to 8 logs. It becomes a very valuable timber tree in such locations. The lodgepole occurs singly or in small groups intermixed with tamarack and other species. The typical tree is a tall slender one with a small tuft-like top with a maximum height of about 80 feet and a diameter of 18 inches. The forest shows plainly a struggle for supremacy and dominance in which lodgepole seems ill adapted to compete with the taller tamarack and much more tolerant firs. The ultimate result would be a forest of the larger growing species, such as tamarack, and fir, with lodgepole gradually losing ground, but in the usual forest not exhibiting the evidence of fire, this stage has not been reached and lodgepole still retains a large proportion of the mixture. Eventually a forest fire spreads over the area and kills out all the less fire-resisting species, such as white fir and lodgepole pine. The tamarack with its thick bark and scanty foliage withstands the fire to the last. Unless it is a fierce crown fire tamarack remains practically the only seed tree on the ground. Such is the condition in which nine-tenths of this type of forest is left.

The question of reproduction is the next consideration. It is invariably found that lodgepole pine is the first and in many instances the only kind of reproduction resulting on the burned area. Very seldom over a severe burn is any other species found coming in, and the lodgepole occurs so thickly in dense stands as to preclude other species from securing a foothold later, even when tamarack is the only visible seed tree. Where the burn has not been so severe, and the ground not so thoroughly parched by the heat, in other words, where soil and moisture are more favorable, occasional seedlings of tamarack are seen. With abundant seed trees of large tamaracks existing from the fire, scattered over the whole area, it seems at first thought incongruous to comprehend why tamarack reproduction should not be abundant. This can be accounted for by the fact that tamarack seeds require a moist soil for germination, which condition on a burned area does not exist, while just such dry soil conditions seem to be ideal for the germination of lodgepole pine seeds. Again, the heat of the fire has opened the tightly sealed cones of the lodgepole so that the maximum abundance of seed for years is hoarded and preserved in all its vitality, is spilled to the ground, and, lodging in the ashes of the fire and exposed mineral soil, it germinates readily. In addition to the re-seeding from the fire-killed and fallen trees, many lodgepole trees are still standing on the burn and on the sides of it and furnish seed for a considerable period afterwards.

Tamarack with its thick bark has, as a rule, not been seriously injured by the fire. It stands alone on the burned tracts and continues in growth. After the fire the chief seed trees remaining are tamarack; and it is evident, unless the seed year is poor, that tamarack seed is well distributed over the area but it is equally evident tamarack reproduction over a burned area is distinctly lacking. There are certain exceptions to this. On north or east slopes or on edges of meadows where the locality and ground is fairly moist and the soil approaching a heavy clay loam, considerable reproduction of tamarack on such a burned area is usual, but here the original forest was mesophytic in character – the firs, balsams and tamarack were in preponderance, while the lodgepole existed singly and scatteringly. The soil, moisture and light conditions in such situations are favorable for tamarack reproduction and unfavorable for lodgepole. On north slopes where the soil and moisture conditions are not so favorable to tamarack reproduction and fire has been severe, lodgepole has complete possession of the ground the same as on all other burns.

The facts resulting from this study can be summarized as follows:

1. In eastern Oregon and western Idaho within the range of western tamarack (*Larix occidentalis*) in a forest zone between 4,000 and 7,000 feet in elevation, an interesting transition type, where soil conditions are favorable on slopes or ridges, exists in which the principal species are lodgepole pine and tamarack.
2. The type originally, where not influenced by unnatural agencies, is a mixed forest of tamarack, lodgepole pine and white fir. On the upper edge of the type red fir and Alpine fir form a marked proportion of the species, while along its lower edge yellow pine may extend within the borders of the type. The typical type within the forest zone comprises an almost evenly mixed stand of tamarack and lodgepole pine, which shows evidence of the lodgepole pine's losing ground under natural conditions of growth.
3. Natural conditions uninfluenced by some agency rarely exist. Fires have spread at some period over nearly the whole region and brought about an altogether different condition.
4. The result of burns brings on lodgepole pine reproduction in dense stands but rarely any tamarack reproduction although uninjured tamarack seed trees are abundant and scattered over the whole burned tract.
5. The reason for lack of tamarack seedlings is the unfavorable soil conditions after the burn, while just such conditions are favorable for lodgepole germination from seeds shed immediately after the fire by the opening cones of lodgepole pine.
6. For several years after the fire the soil is too dry for tamarack reproduction. After the lodgepole seedlings come up sufficiently to shade the ground and make the soil suitable for the germination of tamarack seed, the stand of lodgepole reproduction is so dense as to shade or crowd out the few tamarack seedlings that do get a start.
7. The result is a dense forest of lodgepole pine fully established under the seed trees of tamarack.
8. The ultimate result is an approach to the original forest, in which the lodgepole pine has reached maturity and is gradually thinning out and tamarack, if any seed trees remain, is slowly coming in among the openings made vacant by the death of veteran lodgepole pine trees.

## Conclusions

1. In the management of such forests where it is desired to secure tamarack reproduction instead of an exclusive forest of lodgepole pine, it is necessary to bear in mind the effect of fire upon reproduction of the desirable species.
2. It has been clearly shown that tamarack reproduction will not be secured by a clean burning and the use of fire in disposing of refuse, where the soil will be injured, can be employed but sparingly, if at all.
3. In a cutting on such a forest the lodgepole pine should be fully utilized and tamarack, only, left for seed trees, and the brush lopped from the trees and scattered. Of course where the debris is so extensive as to be a severe menace to the forest the bulk of it should be burned but in such case the fire should be handled judiciously and not allowed to spread over the whole cutting. The best practical system of management to eliminate lodgepole reproduction and bring in tamarack instead, is, briefly, to block out large areas, cut, utilize and take out all the lodgepole pine possible within them and leave abundant tamarack seed trees well distributed over the area; lop and scatter the brush so as to shade the ground; burn not at all unless great danger results from too extensive and heavy slashings, and, finally, as a safeguard clear and burn a fire strip around the whole cutting area. This system will undoubtedly bring a fair reproduction of the desirable species, which, in this case is tamarack. It is never advisable to aim at securing lodgepole reproduction in this region because it grows small and is inferior while tamarack is an excellent timber and is highly desirable and should be encouraged to completely stock the area.

*{This sums up to an argument for close utilization of inferior species and leaving ample seed supply of good species, all of which is usually admitted, with an added local argument for leaving debris on the ground unburned. I approve this if the officer in charge understands object and is competent to select tracts for such treatment, but would not order it without giving him this knowledge. (signed) E. T. Allen}*

## SECTION III — EXTENSION

Nothing to report.

(stamped) Approved E. T. Allen

**[Compiler's Note:** what follows next is a hand written letter that was inserted in the original copy just before Section IV – Grazing.]

United States Department of Agriculture  
Forest Service

Portland, Oct. 8, 1907

Dear Allen

Enclosed find the "grazing" portion of Erickson's report on the Heppner. I went over everything with Chidsey and think we have matters shaped up pretty well. Both Ireland and Chidsey, as well as the stockmen, object to a division of the Blue Mountains (East) as outlined and wish to have the new

additions north of the line between Twp 9 & 10 remain under jurisdiction of Ireland. It would mix grazing matters up badly to divide it as proposed by Erickson. I enclose a map showing a division of the Blue Mts into three parks which meets with the approval of Ireland and Chidsey and the stockmen, and would earnestly recommend that this division be adopted. The meeting with the Advisory Board was a success. I enclose a copy of the minutes for your information. I do not think it advisable at present to add any portions of the Blue Mts to the Heppner administrative district.

I did not see any of the men who signed the statement about Sheller and Chidsey says he did not swear them so I return the paper unchanged. It appears to me that the matter should be reported to the Forester for such action as he thinks necessary.

Will go south tonight. With best wishes, I am

Very sincerely,

A. G. Potter

## **SECTION IV – GRAZING**

### **General Grazing Conditions**

By not being placed under administration until one year after the Blue Mountains, Wenaha and Imnaha Forests, the Heppner Forest has been a sort of dumping ground for sheep not allowed by permit on the other Forests. Naturally the result was to heavily stock and overgraze. The effect on the range is noticeable on parts of the Forest only, because a considerable area was under control by more permanent users who own or leave sufficient deeded lands to hold certain areas exclusively to themselves. Such is the case of the Butter Creek Land, Lumber & Livestock Co., Geo. Perry, Bill Schwick, Kelly, the Penelon Land and Livestock Co., Jones, Matlock and others. Each of these individuals or corporations own the most desirable watering places, meadows or creek courses so as to control the grazing over adjoining range sufficient in area for their own stock. These individual ranges have, as a rule, been conservatively handled and the forage occurring upon them furnishes abundant feed. The cattlemen, also, had certain territory which customarily was regularly accorded them and which they, likewise, handled judiciously. Upon the remaining range, which is less than one-half the total area of the Forest, excess sheep have grazed so heavily during the past season as to markedly deteriorate the feeding capacity of it. The main portion of especially desirable summer range lies immediately at the heads of the creeks in the highest parts of the mountains. It comprises a narrow strip extending east and west through the Forest. In proportion to the whole area it is small. Considered as a whole, the Heppner Forest furnishes excellent June and July grazing, little August feed and good fall grazing, which extends to October 15. Except in a small territory at the heads of streams, no desirable midsummer range exists. There is abundant early and late feed which lasts well but in the middle of the season the scramble for hot weather grazing will result in crowding the range in the higher hills. In settling individual allotments, the problem of providing each stockman with a suitable portion of high range warrants careful consideration. In some instances this will be a difficult thing to do for considerable meadow land at the heads of the creeks is already privately owned, and as these meadows are principally the source of the streams, some stockmen will necessarily be compelled to accept inferior range lower down the creeks.

In the distinct sheep range the forage is of a substantial nature – bunch grass, sunflower, sedges, lupine, vetch, fireweed, various compositae, meadow-grass, and abundant browse among the timber. The sheep seen on the range are doing well.

In the cattle districts the principal feed is bunch grass, meadow-grass, pine grass, sunflower, peavine and other legumes. No instances of overgrazing were observed. All cattle were in good condition.

### Grazing Districts

On the accompanying map may be seen a dotted line indicating the mountain divide between Kayler and Bologna Creeks on the south side and Wall Creek on the north side. This divide should be used as a division line between the cattle and sheep instead of the section line as mapped, because the ridge forms a natural division line easily distinguishable and readily separating the two classes of stock. In fact this summit is already the division between the two. Sheep Driveway No. 1 follows it, although the map does not show it does. The other cattle and horse districts are laid out fairly well. It will require another season to determine a better adjustment.

The users of District No. 10 are very careless and give no attention whatever to their stock upon the range. I recommend that it be abolished next year if the users do not salt their stock and occasionally see that their stock are keeping within the district and properly using the feed.

There are two little absurd sheep allotments at the extreme east end of the Forest; one granted to Mr. Cole consists of two sections and the other granted to Mr. Ross comprises merely one section of land. Both of these are simply a little side range granted to Blue Mountain users for spring and fall use. Last spring Ross and Cole not only fed out these small areas allowed them but used up considerable range outside the limits. This whole scheme is a nuisance and the feed in these small tracts is not at all necessary to Mr. Cole or Mr. Ross. It should be denied them this fall and forever afterwards and made a part of the Taylor Creek and Five-Mile Cattle and Horse range.

Cattle and Horse District No. 7 appears to be wrongly placed. The stockmen applying for it were under the impression that certain territory they customarily have used adjacent to this district was within the limits of the Forest and took out grazing permits, securing this district. I did not get over the area but was informed by several reliable stockmen that very few cattle use it. I recommend Mr. Chidsey use his discretion in granting such portion of this area to sheep as his judgment sees fit.

At the time of my examination, just after the grazing season had opened, I was unable to determine the condition of the range after a season's grazing. There are approximately 67,000 head of sheep and 8,000 cattle and horses upon the Forest this season. Probably 10% of the country is unfit for grazing, due to the dense pole patches and fallen timber, and sheep driveways or areas lacking in water. The available feed ground, therefore, is quite heavily stocked. I am of the opinion that an average cut of 10% on sheep should be made next season, based, of course, on a sliding scale, making the cut on the large owners the heaviest. I deem it unwise to make any cut on cattle for the districts set apart for that class of stock are large enough and some of them will accommodate an increase. The question of providing range for the new settlers must not be overlooked. It is best to permit a new settler to come into a Forest with cattle because not so large an area need be considered to furnish him with sufficient range as if a new band of sheep were added to the already overstocked sheep range. A new settler may start with 50 head of cattle while, as a rule, it would be impracticable for him to start with less than a band of sheep. The amount of range necessary to accommodate 50 head of cattle is less than the area required for a band of sheep. I would therefore recommend no decrease in the number of cattle for the present.

## Grazing Seasons and Fees

For sheep the present season, June 1 to October 15, is satisfactory. For cattle and horses Divisions Nos. 1, 2, 7, 9 and 10 should be opened 15 days earlier, making the season May 15 and extended to November 1, instead of October 15. It is very true that the high portion of the range will not be used by cattle earlier than June 1, yet much low range can be advantageously opened 15 days earlier. The fee for this season should be increased from 20 to 25 cents per head. The present season and fee, however, should not be discontinued for such stockmen as desire it, who may be allowed the present short season and the consequent low fee. The season for all other districts is satisfactory.

The grazing fee of 8 cents per head for sheep appears to be proper.

## Methods of Handling Stock

This year neither cattle or sheep were counted. There really was no reason why some of the sheep could not have been counted, since they enter the Forest along regularly established routes, and the stockmen residing adjacent could readily inform the Forest officers of the date on which their stock would be driven on the forest. The probable reason for neglecting this work was because an inadequate force was at first allowed, and these men were put on boundary work. I **recommend** that all sheep be counted during this summer or in the fall just before or at the time of driving out of the Forest. There are corrals at several places within the boundaries which can be used to count sheep in; besides, counting V's can readily be constructed of brush and poles, so that no great difficulty exists to prevent a proper count. Next spring all sheep should be counted at the time of entering. The importance of counting all stock should not be discouraged.

The cattle have not been counted. It is a difficult matter to secure a count of the cattle because their owners usually allow them to drift upon the Forest instead of driving them on. It is abundantly evident that less cattle use the Forest than the number paid for and permitted on it. It is also very probable that no permittees have more stock upon the Forest than applied for – many fall far short of the number paid for. There appears, therefore, very little necessity for counting in the cattle but whenever a bunch are driven on instead of allowed to drift on, they should be counted. This may be most conveniently done as they pass through lanes. It is hardly possible to secure any count after they have scattered within the boundaries.

More careful watch of cattle upon the range should be encouraged. Often some stray from the specified horse and cattle range to sheep range. The extent and feed for cattle on the areas laid out for them is ample so there appears to be no excuse for allowing them to drift outside this district. The owners should be required to salt regularly. Many are paying no attention to their stock after turning them loose upon the range. This is especially true of users of Madison Butte and Black Mt. ranges. The exact reverse, however, is true of the users in the Taylor Creek and Five-Mile Districts. There cattle and horse men have employed two men to ride the range, look after their stock, salt them regularly and drive all strays back upon the specified range. This work is very commendable. It should be encouraged among all the cattle and horse men.

## Sheep Driveways

Driveways Nos. 2 and 3 are very well located. No. 3 spreads out to a width of one mile after leaving the head of Ellis Creek and here merges with the spring range that was set apart for the Blue Mts. sheep in crossing. The width should be reduced to one-fourth mile and the sheep made to move right along with no stop-overs enroute. Nos. 1 and 2 are one-fourth mile wide, are effective and

satisfactory, yet No. 3 is the shortest and is one mile wide. There is no reason for this. Driveway No. 1 makes a wide detour to follow the divide around Kayler, Tamarack and Bologna Creeks, thence crossing the deep canyon of Wall Creek in order to get back to the Heppner-Monument wagon road. It should go more straight by following the ridge from Grassy Butte and crossing Wilson Creek which is a less deep canyon than Wall Creek. The recommended route is shown on the accompanying map. Mr. Chidsey and the Forest officers are much in favor of this proposed change in the trail. It should be established this fall so that the sheep coming back from the Blue Mts. may use it.

### Unlawful Fencing

Considerable unlawful fencing exists upon the Forest. In the western end it would appear that most of the land comprised within the borders of the Forest is alienated because fences are numerous. In travelling through certain parts of this territory it is necessary to follow the regular wagon road in order to find gates. All these pastures should be examined as to their legal or illegal existence. This was impossible to do during the spring because no title map was furnished the Heppner office and it was not until in July that the Land Office data could be secured. The owners of such enclosures should be compelled to tear down the fences not legally constructed unless the range will be much benefited by making more satisfactory the proper handling of stock. In all case the owners should enclose no more than 320 acres and be required to take out a permit and pay the annual rental.

### Springs

On Sunflower Flat which is a broad elevated plateau furnishing good feed for both cattle and sheep, there is very little water. Willow Springs is the main source of water, hence it is drawn upon heavily. Stock gather too close to its source and succeed in tramping and mudding around it, which, if continued, will result in destroying the spring. I recommend that the spring be fenced, cleaned out, enlarged by fixing a box in the ground directly over its source, and the water troughed. Several troughs or small tanks will be required. The cost of fixing up this spring will approximate \$40. By such improvement of this spring it will water twice the number of stock it now does and always maintain its maximum flow of water. There are several other springs of considerable importance which are not protected and are liable to serious injury by tramping of stock. These, which occur mainly at the head of Kayler Creek, should also be fenced and troughs fixed to water stock in. The Heppner Forest is poorly watered, hence the question of conserving the available source of supply for its greatest use is an important one.

### Allotments

No definite allotments of grazing privileges were attempted last spring. The reason for this was largely due to the antipathy of Mr. Sheller and the mixed condition of affairs left by him. It would have been rather difficult to do much definite allotment last spring, mainly for the reason that the stockmen think it can not be done. Such absurd notions among some of the stockmen must be dispelled by an effective and careful allotment. However, practically, three allotments have resulted – Boone & Madden, the Butter Creek Land, Lumber & Livestock Co., and the Penelon Land & Livestock Co. The latter as it is outlined at present, mainly on the strength of the unknown location of the company's private holdings, is probably too large. Merely because the company has land well distributed so as to control most of the water, should afford no reason whatever for a basis to control more open range in proportion to the number of stock that use it than the small man who owns no land whatever. I recommend that Mr. Chidsey carefully determine the location of all segregated lands controlled by the Penelon Land & Livestock Company and adjust their allotments so

that no conspicuously greater amount of feed is given to them than to the smaller regular users of the Forest.

In making the allotments on the Heppner Forest, the fact of the decided difference between the early and late feed, on the south and the north sides of Division No. 2, should be kept in mind. This Mr. Chidsey is fully aware of and I am sure he will not overlook it. An approximate division line between early summer and late summer feed is sheep Driveway No. 2.

The allotments should extend from the south boundary including a strip of territory separated by creeks running north and south and traverse north to the head of such creeks. This gives an equal amount of both early and late grazing to each allotted area.

### Spring Range

An area between Potomas and Taylor Creeks was set aside as spring range for the sheep going to the Blue Mts. (E) National Forest. It was simply territory to feed the sheep while en route to their summer range which they could enter June 15. The Blue Mts. users set up a claim that they always had used a portion of the Heppner area as spring range and if no feed were allowed them this season they would not be able to carry their sheep over up to the date of entering the Blue Mts. Forests. These claims are hardly supported by facts. Some of the sheepmen may have used a portion of the Heppner Forest as spring range; most of them never did and all of them can get along with the foothill range until June 15 and their sheep thereby not affected. Mr. Sheller conceded to their wishes, laid out an area of approximately 24,560 acres and approved application for 74,000 head of sheep upon it. The stockmen themselves were more wise than Mr. Sheller for only one-half of them paid the grazing fee and took out permits for the spring range and some of those that secured permits did not use the area. The result, however, was extremely bad. About 30,000 sheep were chucked upon an area of 24,560 acres as early as May 25. None of this area furnished good feed because it had been excessively grazed in the past. Furthermore it was not wholly spring range; only the territory south of sheep Driveway No. 2 including Thompson Flat could be classed as early spring range. The season, May 25 to June 15, was entirely inappropriate. No sheep should have been permitted upon the range earlier than June 1.

Upon examination of the territory I found it absolutely grazed out. I could not distinguish it from the main driveway where thousands of sheep had trailed. At the time of use the sheep were so close together that continued mixing of the bands occurred. The territory was so fully crowded and so badly overgrazed that very little benefit resulted to the stockmen using it. It was so badly overstocked at this early season when the herbage had barely begun growth that now, in midsummer, scarcely any feed is being furnished the stock which use it as regular range for the season. I believe that not one band of sheep can find support upon it during the summer. It will require very careful husbanding of the range for the next year or two to bring it back to a state wherein it will furnish good feed.

I urgently recommend that no Blue Mts. sheep be allowed to use any portion of the Heppner National Forest for range at any season. It is enough that they be permitted to cross on the regular driveways. I also recommend that the supervisor be instructed to carefully consider the denuded condition of this spring range by Blue Mts. sheep, in fixing the allotments next season. No more than 2,500 sheep should be permitted upon it.

### Individual Cases

Mr. E. O. Farnsworth secured from Mr. Sheller the approval of an application for grazing 4,000 head of sheep upon the Heppner National Forest this season. Mr. Farnsworth held a permit for 2,800

head of sheep upon the Blue Mts. National Forest and that amount was the total number of sheep he owned. Mr. Farnsworth is a sheep speculator and at times owns large numbers of sheep; at other times he possesses none. He had in years past occasionally used portions of the Heppner Forest, and laid claims to that he was a continual user of the Heppner Forest and wanted to buy and run 4,000 head of sheep this season. In fact, Mr. Farnsworth has no grazing rights whatever in the Heppner Forest. He has sold most of his interests in sheep and land and has not used any portion of the Heppner range during the past four years. Notwithstanding all this, his application for 4,000 head was approved by Mr. Sheller. Fortunately Mr. Farnsworth could not buy his 4,000 head of sheep and consequently did not take out a grazing permit this year. He will, however, make the same application next season and because of its approval this season will expect a permit to be allowed him next year. I strongly recommend that no consideration whatever be given to Mr. Farnsworth's application. The act of Sheller in approving his application rightly deserves censure.

Farley Brothers were granted a release of something like 800 head of sheep on 1,100 acres of land under Regulation 63. At first they were granted a release on about 1,100 acres additional of land outside the National Forest, but when Form 925 reached Washington, the fact that the land lay outside was discovered and the application rejected. 1,100 acres for 800 head of sheep will not support that number and here the Farley Brothers were given a good thing. The release should be based on an average grazing capacity of three acres per head, which is about twice the present amount.

#### Summary of Recommendations.

1. The division line between the sheep and cattle in District No. 3 should be the mountain di-vide at head of Kayler Creek instead of section lines as at present.
2. Cattle and horse District No. 10 should be abolished next season if the users do not comply with the instructions of the Forest officers to salt and properly care for their stock.
3. Since District No. 7 is used very little by cattle and horses, Mr. Chidsey should use his discretion in granting a portion of it to sheep.
4. The Ross and the Cole sheep allotments of three sections should be made a part of the Taylor Creek cattle and horse range District No. 9.
5. Cut sheep next season 10%, based on a sliding scale.
6. Recommend no decrease in cattle and horses.
7. All the sheep grazing in the Forest should be counted during the summer or in the fall just before or at the time of leaving the Forest.  
*{1., 2., - OK; 3. - use for sheep; 4. - OK; 5. allow 85,000. This advised 10% cut should be considered upon basis of Chidsey's fall report. Erickson could hardly be positive at time of visit. (Signed) E.T.A.; 6. - OK}*
8. Count all sheep next season at time of entering.
9. Count as many of the cattle and horses as is feasible next year at the time of turning them upon the range.

10. Compel more strict watch and salting of stock by the owners than has been done, except in District No. 9 where two men are employed to care for all the stock upon it.
  11. Encourage other users of the Forest to follow the example set by the users of District No. 9, where extra men are employed to care for the stock.
  12. Investigate the legality of all fencing upon the Forest. Compel those enclosing public Forest land to tear down their fences, or, if no injury to Forest interests results, require the taking out of a permit and paying the annual rental for areas not exceeding 320 acres.
  13. Willow Springs on Sunflower Flat should be cleaned out, fenced, boxed, piped and watering troughs constructed.
  14. Other springs likewise liable to be damaged should be piped and troughs or tanks constructed for watering stock.
  15. Make sheep allotments next season.
  16. Adjust the Penelon Land & Livestock Company's present allotment so that no conspicuously greater amount of feed is given to them than to the small regular users of the Forest.
  17. In fixing allotments the areas should extend from the southern boundary of the Forest in Division No. 2 to the heads of creeks so that the advantage of early feed on the south side may be granted to all.
  18. Abolish all spring range for sheep crossing the Heppner National Forest to their summer range in the Blue Mts. (E) National Forest.
  19. Make a special season 15 days earlier and 15 days later in Districts Nos. 1, 2, 7, 9 and 10, with an additional grazing fee of 5 cents per head. Continue the present season and fee for such users as wish it.
  20. Change the width of sheep Driveway No. 3 from 1 mile to  $\frac{1}{4}$  mile.
  21. Change Driveway No. 1 to follow the ridge east from Grassy Butte as shown on the accompanying map. The change should be made in time to have the sheep coming out of the Blue Mts. use it this fall.
  22. The application of E. O. Farnsworth to graze sheep be denied.
  23. Recommend the area of release granted Farley Brothers be reduced to  $\frac{1}{2}$  the number of head allowed free.
  24. Unless the actual examination of the land applied for in a release is made, the grazing capacity should be based on an average of 3 acres per head of grown sheep.
- {stamped Approved *with noted modification of No. 5 (signed) E.T.A.*}

## SECTION VI — USES

Nothing to report.

{stamped E. T. Allen}

## SECTION VII — PRODUCTS

Nothing to report.

{stamped E. T. Allen}

## SECTION VIII — BOUNDARIES

### Ranger Stations

As a rule more attention should be given to ranger station selections. I do not mean that little care is exercised in locating them but the ranger force has no comprehensive conception of the necessity for such selections and will be apt to select too few stations. Not all quarters should be chosen with the view of securing a nice piece of agricultural land, or a nursery site, but most of the stations will be used merely during the summer for pasture purposes. The Forest officers will find that pasture feed for their horses will be short toward the end of the season and consequently must meet with a serious handicap in properly performing their duties. Already, in the sheep range as early as July 1, some inconvenience and difficulty was encountered in finding suitable camping grounds that were not skinned of forage. It is quite evident that later in the season the Forest officers will be compelled to buy and pack grain in order to keep their stock up. If numerous pastures and camping grounds are selected and posted and sheep men notified to bed off them, such patches of feed, well distributed, will afford good grass for rangers' stock all the season.

I recommend the supervisors be cautioned to select numerous small pastures and camping sites principally within the sheep range for ranger stations. Many of these need not exceed 40 acres in extent and may advantageously be as close as two miles to one another while it would be well if they were at least not more than three miles apart, if water and other essentials can be found at such intervals.

{Approved (Signed) E. T. Allen}

## SECTION IX — PROTECTION AND IMPROVEMENT

1. No forest fires have occurred since the organization of the Forest has been inaugurated. Very serious losses have resulted from fire in the past in the lodgepole pine belt in the northeastern part of the Heppner Forest.
2. No fire trespass cases.
3. The usual predatory animals such as bear, cougar and wolf are of such an insignificant number as to result in no perceptible damage to stock. Coyotes are numerous enough to be a nuisance to the sheepmen. Only small losses have resulted from the ravages of coyotes but this is due to the watchfulness of the herders. Owners of sheep instruct their herders to herd close and constantly keep all the sheep in sight so that the coyotes will not pick off those sheep that stray a short distance from the band. This method of herding does, of course, injure the range much more than a

more open method but until the coyotes are diminished in number it would be working a hardship and loss upon owners to compel them to handle their sheep in more scattered bands. The injury to the range by close herding is sufficiently great, I think, to warrant an effort on the part of the Forest officers in cooperation with the settlers to rid the range of coyotes. It seems to me that the matter of lessening the depredations on stock by coyotes is one which the stockmen themselves, being so vitally concerned, should cooperate in most heartily to bring about such safe conditions that close herding of sheep will no longer be necessary in order to avoid heavy losses from coyotes.

I recommend that the supervisor bring this matter before the stockmen at the fall meeting to be held in Heppner and explain the necessity for better protection for their flocks and ask for their cooperation in improving the conditions. It is suggested that the plan adopted by the Wallowa County sheepmen — having a tax on the members and granting a bounty of \$1.50 — be approved by the Morrow County stockmen. The Forest officers should be vigilant in shooting coyotes but should not make a business of hunting them or in any way let it materially interfere with other work.

### Fire Lines

There are no existing fire lines. A combination fire line, trail and telephone line has been recommended and is discussed in full under a joint heading in the latter part of this section.

### Trails

The western division of the Heppner Forest is an open yellow pine country which may be traveled over easily without established trails. The eastern division, however, is largely covered with a dense stand of lodgepole pine, fir, tamarack, fallen timber and dense reproduction, which is difficult to get through on foot and impossible to penetrate with a saddle horse. There are three roads cut through a portion of this area, all traversing the ridges in a north and south direction but none extending east and west through the lodgepole-tamarack forest. There are certain useless trails known only to camp tenders, winding in various directions by which it is possible to manage a way through this country but the waste of time in being compelled to travel in such a circuitous route when one wishes to go direct and hurriedly from one point to another, is entirely incompatible with an efficient administration. There are no existing trails that lead definitely in an easterly and westerly direction from one point to another. For instance, in going from Squaw Meadows to Kelly Prairie, a distance in a straight line of about  $5\frac{3}{4}$  miles, it is necessary to travel a circuitous route of 12 miles around pole patches and fallen timber in order to reach it. Numerous other instances are equally bad. The country possesses no obstacles in the way of high hills, canyons, steep grades, rocks or rims. It is gently rolling with easy grades and the only obstructions to trail building are the dense pole patches, reproduction and fallen timber. A main trail east and west across the Heppner Forest right through this inaccessible and dangerous fire region is recommended in connection with the construction of a fire line. It is described under a joint heading in the latter part of this section. In addition to this main trail there are several short ones that are advisable so as to connect convenient points with the main trail. The location of these spur trails may be left to the discretion of the supervisor. It is suggested, merely for his guidance, that the following spur trails receive early consideration.

1. Connect Matlock Prairie with Jones Prairie — 2 miles.
2. Extend a spur from Kelly Prairie to Bald Butte, a lookout point, thence down to Casey Prairie on Ditch Creek — 4 miles.
3. From South Penelon Prairie east to the mouth of Taylor creek and edge of Forest — 14 miles.

The cost of constructing suitable trails through dense lodgepole reproduction and heavy windfalls is estimated at \$20 per mile. The average cost will be less than this for the route will extend, sometimes, for a considerable distance through open forest with little or no reproduction or windfalls.

## Telephone Lines

### Existing Lines

Along the main wagon road from Heppner to Monument a telephone line extends through the Heppner Forest for a distance of 7 miles; after leaving the forest it follows the boundary of it for an additional 10 miles. For this entire distance of 17 miles the line may be conveniently used by Forest officers patrolling Rock Creek, Madison Butte, Skookum Creek, Wall Creek, Little Wall Creek and Bologna Creek.

An abandoned line, badly in need of repair if ever to be used again, extends along the Spray-Hardman wagon road for a distance of 5 miles through the Forest. It is now controlled by the Bell or Pacific States Telephone & Telegraph Co., who do not consider the patronage of this line sufficient for fixing it up and re-establishing service over it. The line has been abandoned for about 3 years and during this period no attempt has been made to keep it in repair. The wire is good but many of the brackets and insulators are either destroyed or lost. The wire is attached in most places to trees many of which have fallen and other trees have fallen across the wire, so that it is now down on the ground in many places. The real need of repair consists of re-stringing the wire, the cost of which is estimated at \$30 through the Forest. Since this line passes through the Forest and would be of great use to the Forest officers, it is recommended that the supervisor attempt to make some arrangement with the Bell Telephone Company to permit repair of the line for the free use of it by the Forest Service and others, if desired. The total cost of repairing the line where it passes through the Forest need not exceed \$30. At such a small cost I think it will pay to arrange with the Bell Telephone Co. to fix up and maintain the line for rangers' use, if for no other purpose.

### Recommended Lines

East of the Heppner-Monument road not a single telephone line exists within or nearby the Heppner Forest. The whole eastern division is without telephone communication. This district is the most liable to fires because of the dense lodgepole pine, fir and tamarack thickets and much dead and down timber existing over the whole north portion. At Ukiah a telephone line extends north to Alba, Pilot Rock and Pendleton but the nearest any portion of this line to the Forest is 6 miles. It is an exceedingly poor line giving very unsatisfactory service. Messages from Ukiah to Heppner can seldom be delivered.

In connection with the trail and fire line, a telephone line is recommended to extend for a distance of 26 $\frac{3}{4}$  miles westerly through the Heppner Forest and to connect with the Heppner-Monument line near Parker's sawmill.

## Roads

Several wagon roads through the Forest exist. The principal ones are the Spray-Lone Rock road, the Spray-Hardman and the Heppner-Monument. Other roads less travelled and not in good condition are:

A spur extending from the Lone Rock to Stahl Meadow; a wood road up Beard Creek; the Copper-Wall Creek road; a poor road which the sheep trail follows from Skookum Creek east to Mallory Creek; a main road from the Coal Mines south to Long Canyon and edge of Forest; a short road from Hinton Creek to Kelly Prairie; a road from Arbuckle Hill south to Thompson Flat; a road from The Potts south to Sugar Bowl, and southeast through Horsemans pasture to Ukiah, called the Sturdivant road. Several other unimportant and seldom traveled roads exist in the vicinity of the head of Cabin Creek, Silver Creek, Taylor Creek.

It is not recommended that a wagon road grade be considered in the construction of the combined trail, telephone and fire line because of the added cost and change of course necessary to secure a good grade.

### Combined Fire Line, Trail and Telephone Line.

Extending from Taylor Creek east to Madison Butte and north of sheep Driveway No. 2 to the south boundary is a territory comprising approximately 1/3 of the area of the Forest. It is covered with a dense stand of lodgepole pine (second growth), white fir, tamarack, and among it all is very much dead and down stuff. Through all this character of forest fire are very susceptible and once well started would be very difficult and perhaps impossible to check. This dense stuff with the large quantity of dead material on the ground makes the liability of a forest fire doing great damage before possible to stop, so great as to warrant some special means of providing in advance for just such a calamity. Therefore in view of the urgent need for a fire protection plan, I recommend that in connection with the construction of the proposed telephone line and trail, the widening of the necessary right of way be done so as to secure an effective fire line. The route of the trail, telephone and fire line has been studied in conjunction with the view of determining a location that will be best for all three purposes. The accompanying map shows the location of this route through the northern portion for Division No. 2. A telephone, trail and fire line through this portion of the Forest taps the heart of the dangerous fire region opens up by a trail a route east and west right through the middle of a region now difficult of access due to the dense reproduction, underbrush and extensive wind-falls and firefalls, and answers perfectly for a direct telephone route well through the center of the Forest, passing by and near several good lookout points, ranger stations, sheep camps, cow camps, intersecting wagon roads and trails, which make a good main telephone line from Ukiah west to connect with the Monument-Heppner line at Parker's sawmill.

The combined improvements suggested above following the same route was the result of determining separately the most desirable route for each project. They coincided so closely that the expediency of combining all three was apparent. It is plain that at least one-half the expense of construction is saved by combining all the projects. If all the cost of clearing is charged to the fire line, there would be no cost of survey and clearing right of way for the telephone line and absolutely no cost whatever connected with securing an excellent trail.

The route proposed serves so well for all three purposes that I have no hesitancy in recommending immediate work on construction of the trail and fire line, and next season when the right of way will be clear to recommend that work commence on the telephone line.

In addition to the route as shown on the map, a description of it would be of more service to the Forest officers in the field than merely the map location, which is not perfectly definite.

BEGINNING at a point at the head of the East Fork of Board Creek where the Heppner-Monument wagon road makes a bend to the south, thence northeast to the Lookout on Madison Butte, thence easterly keeping well toward the head of Skookum, Bear, Alder and Swale Creeks, following the

ridges as much as possible through Lower Martin's Prairie, thence northeasterly to Kelly Prairie, thence leaving Kelly Prairie on the ridge south of Pole Creek, crossing into Jones Prairie, passing by proposed ranger station, thence continuing easterly, following the ridge southeast of Jones Prairie direct to Turpentine Ranger Station, thence due east to Squaw Meadows and on to 5-mile Creek and over the ridge to Sugar Bowl Creek at approximately at what is known as Sugar Bowl Meadow. Here the trail and fire line should stop, since a broad rolling open-timbered plateau is reached, which is easy to travel over in any direction, but the telephone line should continue easterly in a direct line to Ukiah, preferably following the Sturdivant wagon road.

The route selected for this project may pass over valid claims and patented lands. In every case a written statement of consent for right of way from the owner with his signature should be secured. If satisfactory arrangements with any owner can not be secured, the route of the trail should be changed so as to go around the land. The route as described and mapped does not show in detail just what ground is covered. It may be changed in several parts at the discretion of Mr. Chidsey, if he possesses good reasons for such changes. In a general way, the best route is that shown on the map. It should always be borne in mind that a fire line is most advantageous where it follows a ridge. A fire line on a side hill must be unusually wide to become effective. In case it is necessary to construct the fire line for any distance on a steep side hill, it should be from 150 to 200 feet wide.

#### The Fire Line

Reasons for establishing a fire line through Division No. 2 of the Heppner National Forest:

1. The past fires have been very severe. Nearly the whole area of the Forest has at some time in the past been burned over. Future fires might be just as destructive and extensive as the various fires of the past.
2. The forest consists almost entirely of lodgepole pine, white fir and tamarack. Such a forest composition, hoarding as it does much underbrush, debris and fallen trees, and consisting in itself of the less fire-resistant species is naturally one very susceptible to forest fires. It is likewise a forest, which, when in conflagration, is almost impossible to combat successfully.
3. The liability of forest fires occurring in this region is great. Electrical storms are frequent; campers and travelers are numerous in the hills during the hot summer season and there is always strong possibility of a fire's being started and spreading.
4. A fire in this region when once started and under headway develops into an exceedingly serious situation. A scheme of fire protection and a system of fire lines is quite necessary for the insurance of the greatest public safety and the preservation of the forest.
5. The additional cost of constructing this fire line along the route of the clearing for the trail and telephone line is not great. The total cost is estimated at \$75 per mile.
6. The location of the fire line is the best possible to insure the greatest protection to the whole forest. It follows short ridges connecting with open meadows and taps the central fire region.
7. In service the fire line will effectively check ordinary forest fires, and will insure an entirely safe line from which to backfire if found necessary.
8. The numerous open ridges and roads intersecting the fire line will divide the area of the Forest into small blocks in which a fire could readily be confined.

9. It will more than pay its cost of construction in three years (estimated) by the saving of extra assistance in controlling fires that may occur on the Forest and by the amount of standing timber that can be saved from destruction by a large fire.

10. The route outlined is well up toward the heads of streams and selected to follow ridges as much as possible and then direct down on a meadow and up another ridge. There ought to be no objection to this route.

11. It is evident that the best kind of management of the lodgepole-tamarack forest in order to secure desirable reproduction is to lop the limbs and scatter the brush and avoid burning resulting from a cutting as much as possible; therefore the slash on the ground requires better protection than that resulting from the usual cutting in timber sales. This fire line, effective as it will be, in blocking out areas in the forest is the most inexpensive sort of protection for such forest management.

A width of at least 100 feet is recommended for the following reasons:

1. The strip must be wide enough to be an efficient check to an advancing crown fire, otherwise its object would be defeated.
2. It must be sufficiently wide so that backfiring, if found necessary, may be employed with safety.
3. The cost of constructing a reasonably wide lane is not much greater than clearing out a narrow strip.
4. It should be wide enough so that a burning tree falling on the open strip will not reach the forest on the other side.
5. The value of the timber to be destroyed is so low that a 100-foot strip can be afforded. The estimated value of the timber to be destroyed in this fire line can only be approximated, since I considered it inadvisable to make a thorough examination and estimate of the proposed route because of the extra time required but there is, judging from the character of the forest, very little large timber to be destroyed. The principal stuff that will be destroyed is lodgepole pine.

In a strip 25 miles long and 100 feet wide there are 297¼ acres. It is estimated that on 1/8 of this area no clearing will be required. The area is further classified as follows:

Second growth lodgepole at 2 cords per acre (200 acres) .....	400 cd.
4 M ft., B.M. per acre (60 acres) .....	240,000 ft. B.M.
Value 400 cd. at 50 cents per cd. ....	\$200
Value 240 M ft. at \$2 per M .....	<u>\$480</u>
	\$680

I know of no way at all to utilize this timber. The ranchers will not go in here to obtain it under free use and it is certain no one cares to purchase it. I consider the quickest, best and most economical way to dispose of it thoroughly is to burn the whole. Burning also insures a clean ground surface without additional labor.

## Approximate Cost of Constructing the Fire Line

The cost of clearing a strip six feet wide on one mile of the fire line for the trail has been estimated at \$15 per mile. The cost of cutting and clearing up a similar strip on the other side of the line may also be estimated at \$15 per mile. The purpose of these strips is to insure safety in burning out the slash within the fire lines. The cost of cutting down or slashing the second growth of lodgepole pine over three feet high on 200 acres, averaging two cords per acre, is estimated at \$600. The cost of felling the large timber averaging 4 M feet per acre on 60 acres is figured at \$250. The large trees of tamarack, yellow pine and red fir occurring within the strip may be allowed to stand unless defective or liable to be injured severely by the burn. By leaving these large trees standing the cost will be reduced fully 10%, but among this is considerable small stuff which will require slashing. The cost for this work is estimated at \$250. The cost of burning, four men for 30 days at \$2.50 per day, equals \$300.

### Summary of Cost

1. Strip 6 feet wide on each side of fire line, cleared to the ground, \$375 on each side of the line .....	\$750
2. Slashing the interior of fire line .....	\$600
3. Felling the merchantable trees .....	\$250
4. Burning the slash .....	<u>\$300</u>
Cost per mi. \$76; total .....	\$1900

It would be proper to charge  $\frac{1}{4}$  of this cost to the trail and  $\frac{1}{4}$  to the telephone line.

Where the route extends along a yellow pine ridge, no large trees should be felled, merely destroying the reproduction and burning it together with the debris on the ground is sufficient. Except on the edges of the strip for a width of 6 feet, it is not necessary to clear away the brush and debris. All the trees should be felled toward the middle and slash should be worked toward the center of the strip in windrow fashion so that the greatest amount of inflammable material lies in the very middle of the strip. The dead falls and all the down stuff except near the edges need not be touched; it will all burn when the whole is fired. Burning should be done in the early spring after a good rain. The hot fire in the middle of the strip will cause air currents to go straight upward and consequently there will not be so much danger in this kind of burning as might be supposed. This plan has been worked very successfully and with absolute safety, I believe, in some of the southern California Forests. It can be accomplished as well on the Heppner Forest as in California.

### The Trail

The trail is the first improvement work that should be done. The trail is sadly needed this and next season for the purpose of making more efficient the work of patrol and adjustments of grazing. It will also be needed for the purpose of transporting supplies and equipment for the larger work later. A temporary or provisional trail such as one can get through the country over is the first essential. It need not be a clearing more than 6 feet wide. The reason it is not expedient to do more work on the preliminary trail which will later be improved and made permanent is because a passable route

through the country is needed at once, and also because much labor and cost can be saved when the slash cut in the fire lane is burned. Thus a clearing and a good trail is secured later equally as well and without so much manual labor.

Since the route of the trail must also be the fire line, it is advisable to carefully go over and plan the details of the trail, note the character of the ground necessary to pass over, the amount of fallen timber to cut out, the best grades to secure, the possibility of touching ranger stations, lookout points, open spots requiring but little clearing, settlements, proximity to camps, etc. A regular survey by an engineer is not at all necessary because the country through which the trail will cross has no high hills or steep grades. What is required by the examiner is good judgment in selecting a route suitable to meet the needs and requirements outlined above. It is suggested that Mr. Chidsey do the actual location work and make all plans and estimates of cost. I am perfectly satisfied that he can do the work well and with all the accuracy required. Primarily, the thing to do before any work is attempted is to blaze out the definite route. This should be done on foot and the line should be retraced from the opposite direction to see if any improvement could be made by viewing the work from a different standpoint. In locating precisely where this combination trail, fire line and telephone should extend, the object that it is to be a permanent improvement work to serve three purposes should always be kept in mind.

The cost of the initial trail cut 6 feet wide and cleared of refuse so as to be serviceable will amount to not more than \$15 per mile. In many places such as on a yellow pine ridge or open meadow no clearing will be required, hence the cost amounts to practically nothing. In the dense stands of lodgepole reproduction and windfalls, the cost will approximate \$20 per mile. The average for the whole route may be roughly estimated at \$15 per mile. No rock will be encountered, no bridges will have to be built, probably no culverts or grade work will be required in making a very suitable and permanent trail. The grade should be kept within 15% for such a low grade is easy to secure in this country. All work and full completion of this trail should be accomplished by the end of next spring. The trail will be 25 miles long. The total cost at \$15 per mile for the 25 miles will be \$375.

The width recommended for the fire line will be 100 feet and the method of clearing advised is to cut all the standing trees over three feet high, falling them toward the center in windrow fashion. Then at a safe period of the year burn the whole slashing. It is obvious that if the trail which will be constructed is located in the center of the fire lane, its use, while slashing for the fire line is in progress and before the burning occurs, will be annihilated, and travel over the route would be impossible. It is therefore recommended that the trail be established on one side of the fire line strip so that it may be of use all the time. This is advisable for another reason: the expense of the ground along the edge of the strip due to clearing and tramping of saddle and pack horses ensures greater safety against fire spreading into the adjoining forest on the side of the strip when the burning of the slash within the strip is being done; also a fire approaching the fire line from that side can be easier checked as soon as it reaches bare ground.

In the construction of the fire line a narrow strip on each side must be cleaned to the bare ground so as to render burning a safe operation. This strip on one side might just as well be the established trail.

After the burning of the fire line the trail which was constructed provisionally at the least possible labor is now widened and being thoroughly cleaned out by the burn, may be established as a very suitable permanent trail.

## The Telephone Line

The need of telephone lines proposed along the route of the fire line and trail has been pointed out in the foregoing discussion. It is hardly possible that any work can be begun on it this season. I shall not go into a detailed estimate of cost because Chidsey after he has thoroughly examined the route in detail can do this much more accurately than myself. The line will extend for a distance of 26½ miles through the Forest and for eight miles outside of the Forest to Ukiah. It is very possible to secure the cooperation of the stockmen and settlers to aid very materially in the completion of this line.

## Cabins

No cabins of any use are known by me to exist upon the Forest. One or two cabins should be constructed this fall for use during the winter. I am satisfied to leave the matter of location, construction and estimate of cost entirely in the hands of Mr. Chidsey. His recommendations will unquestionably be good for he shows good judgement in such matters, and his recommendations therefore may be approved.

## Pastures

The permits for two enclosures had just been completed during my inspection. I did not visit them.

## Game

Game is not at all abundant. The cause of the lack of deer and other game is probably due to the annual hunt of the Warm Springs and Umatilla Indians who come into the country en masse with large bands of horses. The Forest officers should see that each Indian complies with the game laws.

## Summary of Recommendations

1. That supervisor ask for cooperation of the stockmen to rid the range of coyotes.
2. That a main trail be constructed in conjunction with a fire line through the northern portions of Division No. 2, as shown on the accompanying map.
3. That several short trails as feeders to the main lines also be built. The location of these trails to be left to the discretion of Mr. Chidsey.
4. That arrangements be made with the Bell Telephone Company to permit repair of an abandoned telephone line on the Spray-Hardman wagon road so that it may be of service to the Forest officers.
5. That a telephone line be constructed next year from Ukiah to the bend in the Heppner-Monument wagon road, following the route of the fire line and connecting with a main line extending to Heppner. This is in connection with the construction of a fire line and trail. Length 25 miles through Forest and 8 miles additional to reach Ukiah.
6. That a fire line 100 feet wide be constructed from Sugar Bowl Meadow to the bend of the Heppner-Monument road, as shown by the accompanying map. Length 25 miles. The suggestions offered in the discussion contained in this report should be taken advantage of.

7. That Supervisor Chidsey's recommendations for cabin construction be approved.

*{Approved (Signed) E. T. Allen}*

## **SECTION XI — EQUIPMENT**

All the equipment of the Heppner Forest has been carefully canvassed and an inventory made, verification vouched for, and the inventory forwarded to Washington, D.C. All articles were found in good condition, mainly because every bit of equipment was new.

### **Quarters**

Heppner is the only town suitable for the headquarters of the supervisor. The town possesses all the necessary means of communication, having railroad, telegraph and telephone. It is a good source of supplies and is central for the majority of the users of the Forest. I recommend that no other town be made headquarters for the Heppner Forest.

The office is in a rather small dingy building. The one room is 33' x 10'. It is not very suitable. The rent including light amounts to \$12.50 per month, which is too high for such accommodation.

Mr. Chidsey desires to move the office to two rooms in the Odd Fellows' Building. There office rent and light can be secured for the same price. The rooms will be much more suitable and more pleasant. I recommend the change be approved.

### **Records**

The office files need but little adjustment to make the filing system consistent all through. Chidsey has kept his office in very good shape. The few suggestions offered him by me for the improvement of the system have been followed.

*{Approved E. T. Allen}*

## **SECTION XII — ORGANIZATION**

### **General**

On February 1, 1907, Chidsey, then a Forest Ranger, was transferred from the Chesnimnus Forest to the Heppner. D. B. Sheller at the same time was detailed there and placed nominally in charge. This arrangement held until April when Sheller was assigned to the Yakima National Forest, leaving Chidsey in charge. A fortunate understanding was reached between Sheller and Chidsey so that no conflict in the exercise of authority occurred. Since Sheller fully realized that it was his principal business to direct the policy in grazing matters and get Chidsey fairly started and then leave him in charge, he willingly agreed to rest the details for the administration, such as the appointment of Forest officers and direction of work in the field, to him. This was an excellent arrangement because it put organization in the hands of the person who would have the future handling of all the business of the Forest. If Sheller had directed the details of organization, the result might have been as bad as much of the grazing initiated by him.

Notwithstanding the fact that Sheller was detailed to the Heppner Forest to start things going and assist Chidsey in the adjustment of general business, it can be fairly stated that, due to the unsatisfactory methods employed by him, the real work toward adjusting business and perfecting a complete system was handicapped instead of accomplished. Mr. Sheller should have been of principal assistance in relieving Chidsey of the responsibility of dictating the disposition of grazing applications and the placement of stock upon the range in the most satisfactory way. Because Sheller was largely acquainted, through his connection with the majority of users of the Blue Mts. (E), with the users of the Heppner, it is evident that he should have been more familiar with existing conditions, and could with more certainty and efficiency initiate the grazing on the Heppner than could a new man unfamiliar with the country and the people. But the result was not very satisfactory. It is believed that Chidsey could have handled the work alone much better. The chief cause of the partial bad results was Sheller's bad system of conducting business which made it very confusing to one taking up the work where he left off. The letter files were incomplete showing that many letters were not answered, or if so, no copies of the answers retained in the office. Perhaps the letters were replied to verbally but there was no notation upon the original letters to show that any action had been taken respecting them. It is also true that Sheller made many promises that were not verified by any sort of record or memoranda in the office. The unanswered letters, the verbal replies, if ever made, the unknown promises, all served, decidedly, to confuse Mr. Chidsey in an attempt to straighten out matters upon Sheller's departure. The files as adjusted by Chidsey were found in a good systematic shape, but lacking in completeness.

The office is located in a small wooden frame building, rather dilapidated and not very suitable. The one room containing the office is 30' x 10'. It is too narrow and inconvenient. Mr. Chidsey desires to move to the second floor of a large brick structure conveniently located. He can secure here two rooms and electric light at the same price he is paying for his present office. With the office rooms are a wood closet and a small store room. I think the change a decided improvement and strongly recommend it.

The Forest officers are all entirely new men and are mere Forest guards. They were found to be green in the work and not highly enlightened in the usual work required of a ranger. The force of four men as finally selected are good enough for the present and adequate to perform the principal work this season, which is the regulation of grazing.

## Personnel

### **Thos. E. Chidsey**

Chidsey is distinctly a grazing man. He was born and raised in a stock country in central Oregon, and it would be presumed his experience ended here. In fact he has had but little actual work in other branches, yet he possesses a fairly good education, has traveled extensively, is apt, keen, a careful observer, intuitive, a good student and always ready to learn. What he lacks in actual experience he has gained by observation, travel and study. His judgement is good. It shows a broad comprehensive view of things and of the existing conditions before action is taken. A merit is the eminently satisfactory way he deals with the users of the Forest. I do not believe there is a person in the country having dealings with him who can not say he has been fairly and courteously treated. Chidsey possesses an unassumed or natural tact for winning favor for the Forest Service and himself. He has been instrumental in changing public sentiment adverse to the Forest policy to one very largely favoring it. This was accomplished by tact and reasonableness in dealing with people and by giving out full information relative to the use of National Forests, and by a liberal distribution of the "Use Book". Here, as elsewhere, I have found the sentiment adverse to the

National Forests to be due almost entirely to a lack of correct information and to the distribution of misinformation obtained from belligerents or badly informed wiseacres. The "Use Book" where liberally distributed has probably done more to properly enlighten an obscure yet vital public difficult to reach or communicate with, than all the talk or newspaper comment ever spent. Mr. Chidsey has grasped this idea and has already judiciously circulated 500 copies of the "Use Book" and has asked for 1,000 additional copies. The recently published "Red Book", entitled "The Use of the National Forests", written in a popular style, probably answers the purpose of enlightening the public better than the "Use Book". A large supply of the "Red Book" should be furnished Mr. Chidsey for local distribution.

Judging from Mr. Chidsey's work and unquestioned upright character, I find that all the responsibility thus far placed in him has been invested in safe hands. He has handled the Heppner Forest as best he knew how and although a new man with much yet to learn he has made no particular mistakes and shows a promise of rapid improvement and efficiency in the future.

A great many users of the Blue Mts. (E) National Forest reside in the vicinity of Heppner. Many of these users have called upon Chidsey and demanded a considerable portion of his time and work to care for their wants or to listen to their grievances. He has patiently borne the brunt of all this extra work and has written many letters to Supervisor Ireland for them. He deserves credit for this work. I see no way to avoid this extra work for him since it is costly and impracticable for such users to visit the Sumpter office to confer in person with the supervisor there.

There is much work yet undone on the Heppner Forest that should be undertaken to effect a more efficient administration. Such work as trail construction, pasture fences, selection of ranger stations, etc., all should be started as soon as means and other work will permit. Due to the fact that Chidsey has no experienced ranger material to draw upon and was compelled to instruct entirely new men, the work such as is evident upon an old Forest could not be cared for early this season because of the stress of urgent grazing matters; therefore improvement work on the Heppner Forest is sadly lacking. Chidsey should be encouraged to complete all the improvement work possible this season and he should detail one of the guards on such work at once, leaving him to care for grazing merely incidentally.

Chidsey should push things such as improvement work with more energy than heretofore. His men do not seem to possess the required spirit that they should. I recommend that it be suggested to Chidsey that he make it plain to his men that more work, more results, a better spirit amounting to enthusiasm, if possible, will be expected from them. He should further instruct them that results, not merely listless performance of duty, is the ultimate object and the true mark of efficiency. Originality, suggestions and definite recommendations are expected from Forest guards and rangers as much as from a supervisor.

I strongly recommend Chidsey for permanent supervisor of the Heppner Forest and that his title be changed from Acting Forest Supervisor to Forest Supervisor. On January 1 his salary should be raised. Contingent with the added territory of the Blue Mts. (E) National Forest being placed under his jurisdiction, I respectfully recommend he be promoted to a salary of \$1,600 per annum.

### **Guard Sylvanus Wright**

Among the field officers of the force Wright seems to possess the best qualifications for the position of ranger and his work has shown greater efficiency than that of the other guards.

He is an experienced timber man, having engaged in sawmill work on the west slope of the Cascade Mts. and in timber cruising in the Blue Mts. country. He thoroughly understands the timber business from a practical standpoint. He is also good on grazing and has proven of just as much value to Chidsey in the handling of stock upon the National Forest as have any of the other guards, who are more familiar with grazing than other work. Wright possesses a clear knowledge of the land and mining laws and is fully competent to report on all sorts of claims. He has shown efficiency in handling all situations thus far brought before him – grazing, claims, and special uses. He possesses a quiet bearing and an unassuming disposition which implies confidence in him and his reports.

I think Wright is the most useful and efficient officer in the force. I therefore recommend he be retained as Assistant Forest Ranger for a permanent position, contingent, of course, on his passing the civil-service examination.

*{If as good as this he should have \$1000 (signed) E.T.A.}*

### **Guard Leo. Neal**

Not having gone out into the field with Mr. Neal, I am unable to report definitely upon his fitness and ability as a field officer. He is capable, honest, fairly well educated and appears fully interested in his work. He was employed in the office during my trip over the Forest with Chidsey and while there conducted some work on classifying land and claims in a satisfactory way. Mr. Neal is slow, not overly energetic, yet possesses the spirit and the ability to make at least an average Forest officer. Further consideration now, prior to his passing the civil-service examination is unnecessary. As a guard he fully answers the purpose; as a ranger he has yet much to learn. I recommend that he be separated at the expiration of three month's service.

### **Guard John Ellis**

Ellis is 35 years of age. He has never done any timber work at all. His experience rests entirely with stock and farming. He has been employed at some time in riding the range for stock, has fed stock during the winter but the major portion of his life has been spent in herding sheep and tending camp. Ellis is an honest, innocent, reliable fellow, but he lacks much in energy and aptitude. I was with him a week and found him a very capable mountaineer, a good packer, good cook, and thoroughly familiar with the stock business. Beyond that his knowledge or experience is limited. He would never do for a year-long ranger unless there were stock to handle or trails to construct during this season. I would recommend that he be separated in the fall.

### **Guard Orloff Stafford**

Stafford was just placed on duty June 1 and was the newest man on the force. He is familiar with the stock business and has a pretty good education. I was not out with him and saw him only a short time, hence can not report on his ability or efficiency. He should be separated in the fall.

### **Summary of Recommendations.**

1. The supervisor's office be moved to more suitable rooms in the Odd Fellow's Building.
2. That Supervisor Chidsey be furnished with 1,000 copies of the "Red Book" for local distribution.
3. That it be suggested to Mr. Chidsey that more attention be given to improvement work upon

the Forest and that he encourage the men working under him to show more interest in their work and develop a better spirit.

4. That the title of Forest Supervisor be given Mr. Chidsey with promotion to \$1,600 next January, provided annexed territory from the Blue Mts. (E) National Forest is placed under his administration.

5. That Sylvanus Wright be retained as a year long ranger and promoted, if so recommended by Mr. Chidsey.

6. That Leo Neal, John Ellis and Orloff Stafford be separated at the end of the season.

*{Suggest re-hiring for permanent improvement work, if this can be done in winter. E.T.A.}*

*Approved E. T. Allen*