Enclosure with S, D-6, Insect
Control, Whitman, 11-12-'10

WHITMAN NATIONAL FOREST

REPORT OF INSECT CONTROL[1]

FOR Week Ending October 29, 1910.

October 27 the Service camp was established at the mouth of Fidelity Gulch on Wind Creek in approximately the east central part of unsurveyed Section 4, T. 9 S., R. 37 E., W.M.

The party was composed of five men and a cook, under the direction of and supervision of Mr. Edmonston of the Bureau of Entomology.

On the 28th and 29th three yellow pine averaging 21" in diameter were cut and peeled with an average infested length of 85 feet linear. Also 47 lodgepole averaging about eight inches in diameter and averaging approximately 30 feet linear infested length. During this time thorough instruction was given the men in detecting and determining the Dendroctonus and their work. These men were to form the nucleus of a more complete organization.

More complete report and description of area will be given next week.

(Initialed)

H.I. (Signed) R. E. Smith

Forest Ranger.

[1] This document was transcribed from a photocopy of the original, which is located in the Supervisor's Office Silviculture Library Archives. To the greatest extent possible, this version is an exact duplicate of the original text.

Enclosure with
S
D-6, Insect Control,
Whitman,
11-12-'10 Camp Fidelity.

WHITMAN NATIONAL FOREST

FOREST SERVICE.

REPORT OF INSECT CONTROL,

For Week Ending November 5, 1910.

Beginning with the first of the week the force was increased to three crews of three men each and one man extra to assist the crews as needed. Each crew was placed in charge of a reliable man who had received previous instruction in cutting, measuring and disposing of marked trees.

The Bureau of Entomology's agent, Mr. Edmonston, remained with the camp throughout the week and besides supervising the cutting and marking continued to give instructions in marking and treatment of marked timber.

The locating and marking was done by Mr. Edmonston and two Forest officers, who also directed the work and maintained careful supervision of the three crews.

Near the close of the week Mr. Ames, Assistant District Forester, inspected the camp and the control work and expressed his approval of the methods employed.

During the week 16 yellow pine and 530 lodgepole were cut and the insects disposed of. As a sample of work done 25 trees as they came show the following:

> No. of trees, 25; species Lodgepole; maximum D.B.H. 14"; minimum D.B.H. 8"; total infested length, 808 feet; total length (height) 1410 feet; average D.B.H. 12"; average infested length, 32 feet; average total length (height), 56 feet. In the infested length approximately 50% or more is totally or completely infested, while the remainder is probably 50% infested.

It being impossible to dispose of the timber, under administrative use the timber was all fallen into windrows or cut into lengths and piled with the brush and what dead down stuff was handy or enough to insure a bed of coals. Fire was then applied and the piles burned. After they were well burned down the unburned remaining logs, ends, etc., were rolled in and completely burned without other attention. This latter requires very little time and makes a good job.

Wind Creek, which rises near the summit of the Elkhorns at about 7000 feet, flows southwest to Cracker Creek, at this point about 4600 feet, and drains about three sections. It flows through a narrow canyon, the walls of which are very steep to precipitous. There are not tributaries of any size, but short

steep gulches cut the left hand walls at regular intervals, while those on the right hand side are larger and less regular. One of these latter is Fidelity Gulch, which comes in at right angles to the creek and drains a kind of a basin of about 200 acres.

The south slopes are of the yellow pine type, while the north and east slopes are of the typical mixed conifer-north slope type. The yellow pine except near the mouth of the creek is comparatively young and rather open and therefore inclined to be limby and scrubby and contains some larch, Douglas fir and lodgepole. The north slope type is fairly dense stand of lodgepole, spruce, larch and the firs, with scattering yellow pine. Probably 50% of the lodgepole on this slope is insect killed, but the present infestation has not been fully determined, although it is believed to be quite bad.

The infestation in yellow pine seems to be principally in the vicinity of Fidelity Gulch, which contains approximately 90 acres of lodgepole and larch and in this the infestation has been quite serious and it was here that the control work was begun.

It was originally planned to do principally cruising, locating and marking infested timber and to do the cutting in the spring, but his plan was soon found to be very impractical and also expensive, so the control work has been pushed right along with the marking, Mr. Edmonston and the ranger only reconnoitering to insure continuous work for the cutting crews.

Respectully submitted

(Signed) R. E. Smith

(Initialed) Forest Ranger.
H.I.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE,
Whitman National Forest.

Enclosure with
S
D-6, Insect Control,
Whitman,
12-14-'11

Final Report of Insect control,
For Fall of 1910, Ending November 19, 1910

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Camp Fidelity.

Following the date of last weekly report the weather cleared up and by the middle of the week had become sufficiently dry to burn the piles of logs cut the previous week.

Increasing the force to the capacity of the camp, which made four crews, two crews were set to burning the log piles, and the other crews were instructed to burn their piles as fast as completed.

However, most of the piles did not burn nearly as readily as before and it was almost impossible to burn the brush at all. Piles that were composed only of logs burned much more readily, but still were hard to start. Then too a fall of four inches of snow and some rain came on to make matters worse, but, with a knowledge of the conditions of spring burning, the short uncertain period in which it may be done, piled logs wet and soggy long after the surrounding debris is quite dry, the rush of spring work, etc., it was deemed quite advisable to dispose of the insects in trees already cut, even at considerable expense, and the work was pushed so that now practically all of the timber cut is burned. In a few cases it was only possible to char the logs sufficiently to kill the insects and most all of the brush piles were left as being too expensive and containing no insects, no great harm might result if they should fail to be burned prior to July 1. However, they may be burned in the spring long before it would be at all possible to burn log piles.

By the end of the week the weather had become so disagreeable that the majority of the men did not wish to work longer and as the expense of maintaining a small crew was proportionately greater it was decided to discontinue operations.

While it would be exceedingly difficult to burn in the spring log piles cut this fall, experience has proven that they can be readily burned as fast as cut and piled. Another fact that was developed from experience is that log piles piled compactly with a small amount of dry material in the bottom and absolutely no brush burn very good, while it is often very difficult to burn them when brush is mixed in or even piled over the top of log piles. Also the larger and more compact the piles the less dry material

needed. Where logs and brush must be burned together it is much better to pile the logs compactly and after they are well burned down, or at least well started, pile on the green brush. While a crew is working in the vicinity this does not make much expense and does a much better job.

Where the infestation is quite serious a large camp can be worked advantageously, but in so working a distance of two miles from camp can seldom be exceeded; and if the outlying infestation is inaccessible or it is a steep climb from camp to the work a shorter distance should limit the operations from the camp, since walking a large crew any great distance becomes quite expensive.

The plan found most successful in this locality is for the officer in charge of the camp to cruise and mark the infested timber, direct or take the crews to the marked timber; the crews, composed of three men, cut, pile and burn the infested timber marked. Usually the foreman and one man fall the trees. While they are doing this the third man, or trimmer, barks the stumps of trees to be cut below where they will be cut, and also trims up the tops of fallen trees. After the fallers have fallen several trees the foreman ascertains the infested length and takes the measurements, recording species, D.B.H., infested length and total length (height) and any notations in a book; also recording on the stump the D.B.H. and infested length. (This latter was done at the request of the Bureau of Entomology and was for the information of its examiner, or agent.) While he is doing this the crew is cutting up the trees into logs. The logs and brush are then fired and the crew moves on to the next trees designated by the officer in charge. Each crew looks after the burning of its own piles, which only requires one man for a short time after the piles are well burned down, to “chunk up” and refire any piles that may have missed fire. At the close of the day each foreman reports number of trees and species and any other important fact to the officer in charge, which forms a basis for weekly reports.

Wherever the infestation is enough to justify a large camp one cruiser can keep four crews busy and also maintain a supervision of the work. By reason of it being necessary to give some attention to other Service business an extra officer was needed a part of the time to do marking of timber and supervision of the work. However, this becomes somewhat complicated, especially when either he or the officer in charge is not thoroughly familiar with the ground covered or there are no striking physical features by which to describe the various locations. This also becomes very apparent in trying to direct crews to infested timber without going in person, and often much valuable time may be lost in trying to follow such directions. The cruiser makes a careful examination of each tree and in doing so uses whatever method seems to meet the requirements of the locality. On this watershed, where the slopes were very steep and very much cup up with little draws and gulches, it was found most practical to take the area between two of these gulches and commencing at either the top or bottom traverse the area from one gulch to the other on a level; then, moving up or down the slope, go back to the other, and so

on. The trees are blazed with a blaze not less than six inches long and two to five inches wide, and stamped with a marking hatchet in the blaze. The blazes were always placed on the down-hill side, and if the timber was dense or the trees isolated they were often blazed quarterly to the slope. Where this plan is carried out no map of infested trees, and very few notes, are required, since they are cut almost as fast as marked and a good cruiser can retain a knowledge of their location until he has directed a crew to them.

The Bureau's agent, Mr. Edmonston, remained with the camp throughout the work and assisted in marking timber and instructing the new men, as they came, in control work. He also maintained a constant supervision of the work and approved the methods employed. The Bureau's expert, Mr. H. E. Burke, visited Camp Fidelity this week and went over the work done. He expressed an approval of the work and the plans as carried out.

Wherever the infestation is scattering a plan for working small camps has been evolved, which it is believed will be much more economical and effective than large camps and will be set forth in the recommendation.

In all of this work the beetle that has been doing the damage is the mountain pine beetle (Dendroctonus Monticolae). In a few of the yellow pine a small amount of western pine beetle (D. Brevicomis) is found, but in no case sufficient to kill the tree and always occupying the unoccupied spaces between the workings of the monticolae.

In most cases the work of the brevicomis is confined entirely to the unoccupied spaces. A number of striking instances of this were found showing conclusively that brevicomis had entered after monticolae.

The amount of infested length that is totally infested is found to be not less than 80% and the remainder is approximately 60% infested.

The monticolae as a rule is very healthy and is in all stages of attack and development up to the pupal stage. The great majority of the work shows long egg galleries (8" to 17") and larvae large and well developed and seemingly quite healthy. Many of the larvae have almost reached full development and are ready to pupate although no pupae were found. A few trees were found which had recently been attacked and the galleries only a few inches long. Often the galleries in the tops of the trees were short and contained eggs and recently hatched larvae. The beetles seem to be quite free of disease; what little was found would have no effect on their reproduction.

The beneficial insects, or those that prey upon the dendroctonus, were found only in minor quantities, so that no appreciable benefit is noticed. In the yellow pine, associated with monticolae,

besides brevicomis were found a few dendroctonus valens; also a few flat and round-headed borers; all of these latter usually in the stump.

In trees where the monticolae were well advanced several species of tomicus were found, especially in the tops of the lodgepole above the workings of the monticolae. In the yellow pine they are associated with the monticolae. But always the character of the work shows that they had gone in after the tree had been killed.

In nearly all of the work this fall the infested trees were easily picked out by means of the fading color of the tops; especially with the yellow pine this fading was very marked. The only exceptions were trees that had recently been attacked.

In locating the infested trees it was often quite difficult to pick them out by means of the pitch tubes, since where a tree was vigorously attacked they were often entirely lacking, the only external evidences on the bark being scattered minute quantities of sawdust or borings. Trees that were recently attacked usually had pitch tubes much better developed. As a rule the pitch tubes are not as prominent this year as they were last year. It is thought that this may be accounted for by the extremely dry season at the period when the main flight of beetles was made.

Almost without exception the bluing fungi follows immediately after the attack of the monticolae and long before the tops show any indication of turning the bluing has permeated all the sap wood and is striking into the heart wood. On the other hand the portions attacked by brevicomis above is free from bluing even after the trees are dead, which would indicate that monticolae might carry the spores of the fungi. These fungi seem to "dry" out the timber so that it burns much more readily when in the piles.

The area of Wind Creek watershed is approximately 2300 acres, of which 1300 acres lie on the right-hand side. Of this side infestation was found on about 300 acres. This was all cleaned up and Mr. Edmonston, for the Bureau of Entomology, is of the opinion that the right-hand side of the creek is now free of infestation. To this should be added approximately 40 acres on the left-hand side, making a total of 340 acres treated and 1340 acres free of infestation. Three more working units were nearing completion, but are not considered in these figures, as they will needs require some work in the spring when the work is resumed. It is believed that there is about one week's work at this camp for four crews.

It is from this watershed that the City of Sumpter obtains a portion of its water supply. When camp was broken the grounds were thoroughly cleaned up and all refuse either burned or buried.

Recommendations.

When the work on this area is resumed in the spring a careful inspection should be made of these cut-over areas and the brush piles and any unburned log piles should be burned.

In all cases the brush and logs should be burnt as fast as cut, not only because the uncertain weather conditions interfere very much with burning piles that have laid for some time, but it is also much less expensive for each crew to burn each pile as cut than to do it later. There is then no danger of overlooking any piles.

In that portion of the Forest it is proposed to work next spring in order to connect up with the work being done by private owners, it is believed that the infestation is much more scattered and in small bodies, except one or two localities. The country is cut up by deep creeks and canyons and forms a regular succession of ridges and creeks and it is quite impracticable to work one creek or ridge from another. Therefore it seems that a large camp will be impracticable. To overcome this the following plan is submitted for consideration:

One officer in charge of whole operations.

For each division, of which there may be one or more:

One cruiser.
One camptender.
Three crews composed of:

One foreman.
Two woodsmen.

Each crew to have a camp equipment to accommodate four men, the crews to furnish their own beds and board. The cruiser should be in direct charge of these three crews; he will mark the timber and inspect the work. The three camps should seldom be so far apart but what he could give each the attention needed. Camptender will move damps at direction of crew foreman and pack in supplied as required by the crews. Cruiser and camptender may arrange to board with the crews.

Approved:

*Henry Ireland* — *R. E. Smith*

Supervisor. — Forest Ranger.

SUMMARY OF CONTROL WORK

Fall of 1910.

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Dendroctonus Monticolae.

| Species | Number | D.B.H. Total | D.B.H. Av. | Infested Length Total | Infested Length Average | Height Total | Height Av. | Infested % |
|---|---|---|---|---|---|---|---|---|
| Lodgepole Pine | 1056 | 8282” | 7.93” | 35827’ | 33.92’ | 63195’ | 59.84’ | 56.7% |
| Yellow Pine | 61 | 1005” | 16.5” | 3729’ | 61.1’ | 4735’ | 77.6’ | 78.7% |
| White Park Pine | 3 | 27” | 9.0” | 75’ | 25.0’ | 100’ | 33.3’ | 75.0% |
| Total | 1120 | | | 39631’ | | | | |

The maximum D.B.H. for the different species was as follows:

| Species | D. B. H. Max. | D. B. H. Min. | Infested Length Max. | Infested Length Min. | Height Max. | Height Min. |
|---|---|---|---|---|---|---|
| Lodgepole Pine | 26” | 5” | 83’ | 6’ | 100’ | 30’ |
| Yellow Pine | 35” | 4” | 106’ | 20’ | 115’ | 30’ |
| White Bark Pine | 10” | 8” | 28’ | 22’ | 40’ | 25’ |

Of the infested length approximately 80% is totally infested.

Costs.

| | | |
|---|---|---|
| Labor | $527.99 | |
| Tools | 35.25 | |
| Hauling | 21.00 | |
| Feed | 8.11 | |
| Camp equipment | 54.10 | |
| *Board | 222.87 | |
| | | $869.32 |

| | |
|---|---|
| total trees cut | 1120 |
| Total infested length | 39631 ft. |
| Total cost | $791.05 |
| Cost per tree | .70 |
| Cost per infested foot | .02 |

Residue Values.

| | | |
|---|---|---|
| Tools | $35.25 | |
| Camp equip. -2% | 53.02 | |
| | | $88.27 |
| Net Cost | | $781.05 |

*Board includes services of cook.*

Stumps were cut as low as possible and will average less than eight inches high and all stumps that were infested were peeled.