

**NOTES ON BRUSH DISPOSAL IN EASTERN OREGON<sup>1</sup>**

**By**

**T. T. MUNGER**

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**MEMORANDUM FOR ST.**

**Notes on Brush Disposal in Eastern Oregon**

*By T. T. Munger*

In recent trip across Central Oregon a few notes were made concerning the method of brush disposal that seem to be suited to the several regions visited.

The two methods which are applicable are (1) piling and burning, and (2) lopping and scattering it. The general conclusion reached was that the forest conditions are so variable throughout the yellow pine region in Oregon that neither of these methods of brush disposal is always better than the other, and that it is impracticable to recommend one method exclusively for use in any one region.

The chief factor in making different forest conditions throughout this region are, in a broad way, the climatic variation, but specifically the character and depth of the soil, the drainage, the altitude, and the aspect. Slight differences in the physical conditions have so much effect on the forest cover that no system of brush disposal is applicable over any large unit of area such as a Forest or even a watershed. It is the case frequently that both methods should be used on one timber sale area, - one method on one part of the area and the other on the rest, each on the sites which are appropriate to it. The decision as to which method should be used in each timber sale or each part of a timber sale area must be based on the judgment of the Forest officer on the ground, whose recommendation should in turn be based on certain general principles regarding brush in the yellow pine forest:-

1. In dry regions yellow pine reproduction is usually better where there is some agency such as brush to conserve the soil moisture.
2. In regions where grazing of sheep and cattle is so abundant that the animals injure the young seedlings, brush is helpful in protecting them against trampling and browsing.
3. The presence of dry brush on the ground increases the liability and seriousness of forest fires.
4. The presence of logging debris may help to increase the number of bark beetles and other insects injurious to forests, by furnishing breeding places for them,

The main objects of burning brush are to lessen the fire risk, and, as a much less important consideration, to discourage the spread of insects. It is an expensive operation (in all probability more expensive than lopping and scattering the brush) and it hinders rather than helps reproduction.

Whether the two methods of brush disposal have any decided effect in a mixed stand on the future composition of the forest has not been determined. In a lodgepole pine – yellow pine mixture burning the brush would probably tend to increase the proportion of lodgepole pine. This would be an argument against burning brush on this type of forest.

All timber sale areas may be thrown into two general classes:

- (1) Areas upon which there is already a sufficiently dense and thrifty growth of seedlings or saplings of a desirable species.
- (2) Areas on which there is not sufficient reproduction and on which reproduction is desired.

On the former class of areas the brush should be burnt except when its presence is distinctly beneficial to the young growth.

Ordinarily, it would not be beneficial and might be detrimental as a physical encumbrance to the young plants. The chief reason for getting rid of it by piling and burning, is to prevent a possible conflagration in the brush, which would destroy all the young growth. It has been suggested that to burn the brush on areas where the seedlings and saplings are very dense, may have a beneficial effect in opening up the thickets of young growth which in some places are so dense that the trees are liable to stagnate from over-crowding, and where they are so close that a forest fire in them would do great damage. This is a minor argument for burning the brush in such stands, but may be of importance sometimes.

Considering the liability of brush at all times to encourage forest fires, brush should always be piled and burned in places where there is particular liability of fire starting or where a fire would be particularly serious as along roads and trails and about towns and buildings. The prevention of serious fires is of more consequence than the securing of a first class stand of reproduction. Where, however, natural reproduction is ordinarily poor, and there is reason to believe that it will be assisted by scattering the brush and not burning it and where, if it is left, it will not be a serious fire menace, it should be lopped and scattered. To illustrate the variations of the forest conditions in a region where climatic conditions are similar throughout, a brief description of several regions visited is given. It should be remembered that these notes are based on hasty observations on only a part of the Forests mentioned.

On the Heppner division of the Umatilla National Forest wherever the soil is of good depth and forest conditions are entirely established, natural reproduction of western larch and yellow pine is very good. In all the gaps and even in fairly shady places under the old stand there is a dense thicket of seedlings or small saplings. This is particularly noticeable on the north side of the divide. To leave brush here unburnt would be unnecessary, as an aid to reproduction and would be a serious fire menace to the advance reproduction. On other parts of this division of the Umatilla National Forest, the bedrock comes very close to the surface, especially so on the "Scab-rock ridges," so that natural reproduction here starts with extreme difficulty. Here brush should certainly be lopped and scattered over the surface. It would help conserve the surface moisture and would not be a serious fire menace, as the stand is so scattered.

Over a long, wide belt of country from Bend to Klamath Agency along the base of the Cascade Mountains, the soil is a light pumice which parts with its moisture very easily. On this soil natural reproduction is ordinarily not good, and is rendered especially difficult after logging where the stand is opened up and forest conditions partly destroyed. As a general proposition it will probably be better not to burn the debris after logging in this region. The local conditions vary a good deal, however, and where the debris is very heavy, where there is a great deal of underbrush or where there is a good stand of seedlings or saplings already, it should be disposed of by burning.

On much of the Freemont National Forest there is a constant alternation of sagebrush and juniper desert and yellow pine forest, the higher mountains and north-facing slopes being forest and the low altitude flats and southern exposures being open. The density of the forest and the quantity of the reproduction depend very largely on the aspect. In many places at comparatively low altitudes on north slopes the reproduction of yellow pine is of such good quality that there is a perfect thicket of young pines under the old stand, while on the opposite southern exposures there is practically no yellow pine reproduction. Here is evident that no general rules can be laid down in regard to the method of brush disposal that should be used. The method will have to conform to the particular conditions of each separate part of the cutting area.

TTM