

RS
Reports-Whitman,
Annual Technical¹

January 26, 1917.

Forest Supervisor,
Sumpter, Oregon.

Dear Mr. Evans:

Mr. Starker's report of December 1, entitled "Instructions for Marking Timber in the Yellow Pine Region Pacific Northwest District", is received.

This is an excellent revision of the present instructions and I think we can make good use of it when a new edition of the standard marking instructions is issued.

I agree with Mr. Starker's method of presenting these instruction and with most of his detail points. I do feel, however, that he passes over rather briefly, and perhaps not specifically enough, the mixed stands, classes B and C.

On page 8 the area for sample marking – one-half acre – seems pretty small on a sale of any size. Should not the sample marking cover at least several acres?

An extra copy of the report has been sent to the Forester.

Very sincerely yours,

(Signed) F. E. Ames

Assistant District Forester.

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.

Enc. With
RS, D-6,
Reports, Whitman,
Annual technical,
1-26-'17

Pinus ponderosa

ANNUAL TECHNICAL REPORT

WHITMAN NATIONAL FOREST SERVICE INSTRUCTIONS FOR MARKING TIMBER

IN THE WESTERN ELLOW PINE REGION

PACIFIC NORTHWEST DISTRICT.

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December 1, 1916.

By

T. J. STARKER – FOREST EXAMINER

Whitman National Forest

Photo

Showing general cut-over conditions on the W. H. Eceles Lumber Co. Sale.

Taken, 1916

Sumpter, Oregon,
December 1, 1916.

RS
Reports, Whitman
Annual Technical.

INSTRUCTIONS FOR MARKING TIMBER IN THE YELLOW PINE REGION PACIFIC NORTHWEST DISTRICT

East of the Cascade Mountains in Oregon and Washington, the commercial forests consist largely of yellow pine, either in pure stands or in mixed stands, with Douglas fir, white fir, western larch, and lodgepole pine.

Since these forests are primarily uneven aged, they should be managed by the selection system, (or a modified form of the selection system). It should be the aim, therefore, to cut over each portion of these forests periodically. From the data now at hand it is evident that the cutting cycle (period between cuttings) should be about 60 years. The approximate rotation period will be 180 years.

GENERAL MARKING RULES.

The suggestions which follow are intended as helps in developing judgment, and are not to be considered absolute rules. Correct marking cannot be learned by the following suggestions. The trees which should be marked for cutting vary so widely with the conditions that it is impossible to give satisfactory, definite directions. Each case must be decided on the ground, and must be decided by judgment.

The cutting should be fundamentally an improvement cutting, and the officer who is marking the timber should decide first those trees which are to be left, and then mark for cutting those which are not reserved. His aim should be to leave the forest in the best condition for development during the coming cutting cycle, so that it will produce a good crop at the next cutting. When determining whether or not a forest is left in good condition, there are four points to be considered.

- (1) Will a dense cover of reproduction, or young trees form quickly?
- (2) Does the resulting forest contain as large a percentage as possible of the most desirable species?
- (3) Are the trees reserved in a good healthy condition?
- (4) Do the trees possess good, straight trunks and thrifty, pointed crowns?

Forest Floor.

In order to accomplish No. 1, 18 to 25 per cent of the estimated volume of the trees over 12 inches D.B.H. should be reserved. This amount, along with the reproduction now on the ground and that which follows, will result in a good forest floor being established in 10 to 20 years. Where most of the timber is thoroughly mature or decadent, it may be wise to leave a smaller percentage; where most of the timber is young and thrifty, a much larger proportion should be reserved. In many cases the volume is not indicative of the real condition of the cut over land, as trees 12 inches and smaller do not count up very fast in volume, but in reality if there are a large number of them the area is in excellent condition, even though the actual board feet of merchantable timber is nil.

Most Desirable Species.

In general, the species should be favored in marking in the following order; western yellow pine, Douglas fir, western larch, lodgepole pine, and white fir.

Yellow pine is far ahead of any of the other species and should always be give the preference and encouraged to replace one of the more inferior species.

Douglas fir, because of its slow growth, is very strong, and yields a good growth of construction timber. It is quite free from defect.

Western larch, especially in the larger diameters, is very susceptible to shake, and these are usually filled with pitch. This brings down the general value of larch, although the lumber is especially well adapted for construction work coming in contact with the ground, being very decay resisting.

Lodgepole would receive more consideration except for its small size, as it produces a high grade of common lumber, soft in texture, and with small tight knots.

White fir in this region is very poor and should be considered a weed. If merchantable, heavy marking should be the rule, especially on the yellow pine areas. Trees of this species over 16 inches D.B.H. are seldom sound because of the heavy attacks of indian paint fungus (*Echinodontiom tinctorum*) which gain access to the tree through frost cracks and fire scars.

Health

Aim to mark for cutting the thoroughly mature trees of all species and all those which will not survive and make good growth until the next cutting, 60 years hence.

Reference is made to Professional Paper Bulletin No. 360, "Mistletoe Injury to Conifers in the Northwest" by Dr. James R. Weir, especially page 36.

Form of Reserved Trees.

In order to have the best reserved, the classes of trees should be cut in the following order:

- (1) All merchantable dead timber.
- (2) All Insect-infested timber.
- (3) All spike topped, seriously fire scarred, mistletoe infested, lightning struck, or otherwise defective, yet merchantable trees. Do not, however, consider that every tree that has a fire scar, or a thin crown, or some other deformity, must be removed. Few perfect trees are to be found, and small basal scars or similar injuries in no way impair the health of the trees.
- (4) All suppressed trees which apparently would not thrive and make good growth even if released.
- (5) All thoroughly mature trees of all species which apparently will not survive until the next cutting.
- (6) Other classes of trees that should be cut whenever the amount of vigorous young growth will allow it are –
 - (A) Trees of poor form:
 - (a) Crooked,
 - (b) Schoolma'ams,
 - (c) Low forked trees,
 - (B) Trees of extreme wind risk:
 - (a) Extra tall trees,
 - (b) Large crowned trees,
 - (c) Trees growing close together at the base,
 - (d) Schoolma'ams,
 - (e) Trees badly exposed on ridges, etc.

Aim to reserve as a basis for the next crop an evenly distributed stand of thrifty saplings, poles, and young standards, each of which is capable of living and growing until the next cutting. The trees which are reserved should not be considered "seed trees" as this is a misnomer, there being in almost every case enough advance reproduction for restocking, and therefore the reserved stand would only be "seed trees" in case of a surface fire which destroyed the reproduction. The reserved stand should be considered primarily as a nucleus for a later cutting.

In places where "seed trees" are needed, as on the scab rock, open areas of the Whitman and the grassy, bare hills of the Wallowa, it is often advisable to leave spike topped, defective trees for the purpose. If these trees contain considerable merchantable material, of course they should be cut, but

in many instances trees may be found which, in the judgment of the marker verified by "sounding" the trunk, etc., contain little saleable material, or in other words will not cut out logs, 33-1/3 percent of which are merchantable, and therefore they may be left without loss. Mr. G. A. Pearson, in Circular No. 196 says, "Spike tops and burned or decayed trees should always be cut, unless greatly needed for seed purposes. While such trees usually have a high seed-bearing capacity, to leave them standing until a second cut can be made involves merchantable deterioration or total loss. The risk in the case of light burns is comparatively small, but in the case of spike top and decay, loss is certain. Since in extreme cases, however, it becomes necessary to leave defective trees for want of anything better, it is well to know that, unless too far gone, such trees can be expected to produce large quantities of superior seed for a number of years."

An area should not be included within the limits of a timber sale in which there is not enough mature timber of the better species to make it profitable to the logger to remove it. These areas should be excluded, but wherever possible the boundaries should be posted before advertising.

The forests of this region may for convenience of discussion, be divided as follows:

- (A) Practically pure stand of yellow pine.
- (B) Mixed stand with considerable yellow pine.
- (C) Mixed stand with little yellow pine.

(A) Practically pure stand of yellow pine.

This classification includes most of the commercial timber of the region. On these areas special endeavor should be made to eliminate all the inferior species, leaving the yellow pine in as pure a stand as possible.

Yellow pine often occurs in even aged groups, and in order to give some of the best trees a better chance, it is advisable to remove some of the others. These may be good trees which would be left if standing alone but are offering too much competition, and therefore must be cut. On these areas especial attention should be given to the following points:

- (a) Are the reserved trees a good wind risk?
- (b) Will the soil erode
- (c) Is the area important for watershed protection?

Many rocky ridges occur in this type and every precaution should be taken to encourage a good stand. A different method of brush disposal may often be advisable on these areas.

(B) Mixed stands with considerable yellow pine.

These north slope areas are well adapted to the growth of yellow pine and perhaps grow a better grade than do the south slope areas. Therefore this species should be favored in marking in preference to all other species, for they, being able to reproduce in dense shade, are competing very severely with the yellow pine. Next to yellow pine, Douglas fir and western larch should be encouraged and the other species cut to a low diameter limit. Judgment will be of value as to where to draw the line between "B" and "C" stands.

(C) Stands with little or no yellow pine.

This is the kind of an area which is typical of the transition type, and since it contains practically no yellow pine, is usually excluded from the timber sales. However, such areas often occur on the north slopes in patches and if in any considerable size the logger should not be forced to go in and cut, the cost of logging being very high and the acreage value of the material secured generally very low.

Conclusion.

In important timber sales, it may be often desirable to mark a small area (about one-half acre) on the general plan which is to be used on the whole area, or on some part of that area. The corners of the plot should be roughly marked and the marked trees not cut until toward the end of the operation. If there is any dispute between the purchaser and the forest officer as to what the plan of marking was to be, the sample plot can be used as reference.

Remember that, for the present at least, good silviculture is not all for which we must strive. The clause in many of the contracts limiting the amount of inferior species to a certain percentage of the total cut, and the method of marking on which the appraisal was based, must modify our present practice.

Do not think that the marking must be done according to any iron-clad rules, nor that any set method must be followed. Use judgment, adapt the methods to suit conditions, but do not bankrupt the logger or ruin the forest.

T. J Starker

Forest Examiner.

Photo

Tree 8. This view shows a tree left under the system practiced by lumberman and shows excellent growth. It has grown at the rate of 190% for the period of 15 years since logging.

Taken December, 1916.