

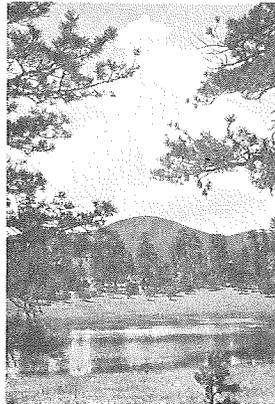
Technical Notes Woodland Conservation



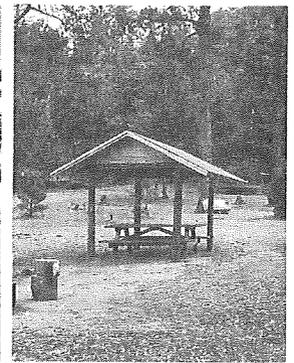
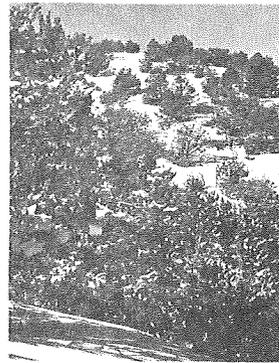
FOREST MANAGEMENT



WINDBREAKS



WATERSHEDS



FOREST RECREATION

U. S. DEPARTMENT OF AGRICULTURE NEW MEXICO SOIL CONSERVATION SERVICE

WOODLAND TECHNICAL NOTE NO. 31

May 22, 1978

SUBJECT: "SITE" TREES

Site trees express the potential growth or productivity of the site. We use measurements of site trees to correlate potential growth with soil taxonomic units. We are looking for trees which are straight with symmetrical crowns, have no evidence of mechanical damage and have a pointed top. We do not want to measure trees which are forked or trees which show a broken or dead top or show evidence of having had a broken or dead top. A site tree also should have no extensive dwarf mistletoe damage or extensive damage caused by other insects or disease. The trees must be dominant or codominant and be somewhere between 40 and 180 years of age. When counting the rings, the rings should show an even progression of size from the center out to the bark. Any grouping of small rings within a progression of larger rings may indicate that at some time during the life of the tree it was subjected to competition or stress and probably does not represent the true growth potential of the site.

The following definitions of crown class will be helpful in the initial selection of site trees.

Attachments

AO
WTSC, Portland - 2
Adjoining States - 1

1. Dominant - trees with crown extending above the general level of the crown cover and receiving full light from above and partly from the side; larger than the average trees in the stand and with crowns well developed but possibly somewhat crowded on the sides.
2. Codominant - trees with crown forming the general level of the crown cover and receiving full light from above, but comparatively little from the sides; usually with medium sized crowns more or less crowded on the sides.
3. Intermediate - trees shorter than those on the two preceding classes but with crowns either below or extending into the crown cover formed by codominant and dominant trees, receiving a little direct light from above but none from the sides; usually with small crowns considerably crowded on the sides.
4. Overtopped - trees with crowns entirely below the general level of the crown cover receiving no direct light either from above or from the sides. Also known as suppressed.

The following diagrams are from Keenes ponderosa pine classification and help to illustrate the types of trees we are looking for. The four main groups of trees represent maturity classes. The first being young, second immature, third mature, and fourth overmature. These are grouped by relative maturity rather than by an age limit. This is because relative maturity classes occur at different ages on different sites. The poorer the site, the younger in years a tree will be when it matures. The subgroupings within each numbered class represent relative vigor classes. We can think of this as occurring because of site quality or because of crowding within the stand itself. As the site becomes poorer or as conditions become overcrowded the vigor of the individual trees declines.

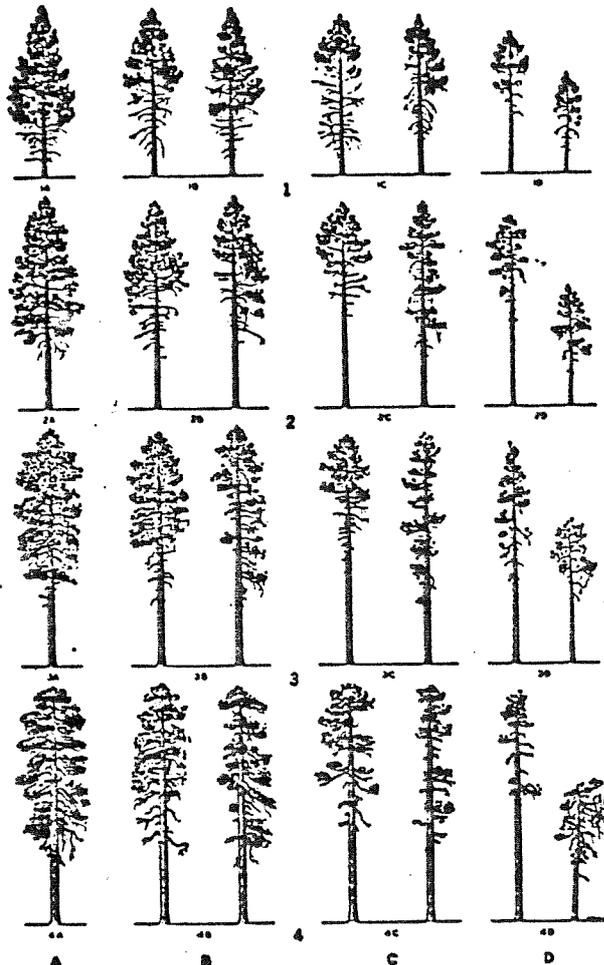


FIG. 69.

Keen's ponderosa pine tree classification based on four age classes from 1, the youngest, to 4, the oldest, and on four vigor classes from A, the most vigorous, to D, the poorest.

Although the trees are shown as individual specimens on Keenes diagram, it should be remembered that they occur in groups in the forest, and we must learn to look at individual trees within the group to be able to separate them in the various classes. The site trees that we are looking for will fall into the second or third maturity class and will fall into the A or B categories within those maturity classes. Although Keene made this system for ponderosa pine, the concept involved worked equally well for the other coniferous species. Use the same guidelines for choosing site trees of Douglas-fir, Engelmann spruce and lodgepole pine.

It must be remembered that on the really poor sites, lower vigor trees will be produced. We must not expect fine looking, straight trees to be produced on the site 5 and 6 land. Experience shows that the potential tree production is short, twisted trees of poor vigor, then common sense would tell us that these are the trees we must measure. To evaluate the sites fairly when we do reduce our standards for site trees, we write in the remarks on the SCS-Wood-5 that these trees were of poor quality but appeared to be average for what that site would produce.

Site Trees for Pinyon-Juniper

Remember that the criteria as stated above for picking site trees does not apply to the pinyon-juniper type. In taking site data for the pinyon-juniper we look at the stand as a whole rather than judging each individually measured tree. When taking site data with the zig-zag survey in pinyon-juniper the main criteria is that we must satisfy ourselves that this is a typical stand for this soil taxonomic unit and that this stand does represent the potential woody plant production for that site. There are soil taxonomic units that will produce stands of pinyon-juniper or at another vegetative stage will produce stands of mainly grassy species. If this type of soil is being measured, it should be noted on the Wood-5 that this taxonomic unit will produce both stands of grass and stand of pinyon-juniper. This is not always easy to evaluate when we first start a soil survey, so making notes such as this on the inventory data both on the Wood-5 and on the Range-47 will aid us in later evaluating what the potential(s) is for each soil taxonomic unit.

Judging the quality of a site tree is not always easy. Site trees must be observed from as many different directions as possible in order to accurately evaluate the quality of the tree. This may involve a good deal of walking. On steep slopes, as much as 15 minutes may be spent just observing each tree both from near and far and from many directions. The time taken is necessary and worthwhile in order to insure that our data is of top quality. Everything we put on the Wood-5 is recorded on a computer program and will be recalled from the computer to help make site evaluations. If we put poor information in, we get poor information out.