

MARKING BY DONALD E. PETERSON

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The marking I did in here was based on several concepts that I have personally and that we more or less hold true as a Company. Our first concept is that we are in this area working with this timber and we have to work for the best that we have here, and that probably is the basis for all the marking that we have done here. That, plus the item that in favoring what we feel we have here as the best to work with in our range of economic values, you also have to consider that we have to put an economic operation into this stand. So with that in mind, I went through this stand and took out the various trees that I felt would do the best for the remaining trees that we wanted to favor.

As others have stated here before, often times the best way to mark is to pick the tree you want to favor and remove the element which is doing the most to hinder that good element, and that is the system we worked on here. Now to emphasize the economic factor, I think that Art Bennett did an excellent job in stating that in the beginning. I know that if our company were working here, I would be as greatly concerned as he is about the apportionment of the cost of the various improvements that are necessary, and it is also important to remember that we have increasing costs of equipment. The various tractors you have to use now have made costs rise.

In my marking I considered as products more than just pulpwood. We consider pulpwood and we would consider any log values that we would say were not necessarily prime logs, but good logs; good log values. For example soft maple is an excellent pulp tree, and some of the diameters here are certainly in the range that is optimum for pulp production, and they are also in the range that makes rather good log material. So there has to be a bit of a compromise, and in marking this stand I kept that concept in mind. In addition to that, from the more valuable species on the current market, we will also reap whatever value we can get from those. All these factors went hand in glove in assisting the selection of the better elements; and the better elements, as we saw it, were form, species and position.

Now if you have two very fine trees growing side by side, eventually one of them must go. When I look at a stand for marking the first thing I do is get an overall picture. I found that a little difficult in getting myself into a 20-foot square and then deciding what I was going to do. I like to stand back and get an over-all concept of the area as a whole, and then go individually to those that appear in the over-all concept to be those trees that should be favored. Next I look for the elements that should be removed to assist the favored trees. The results that I got total 43 trees and 7.4 cords, which would be 14.8 cords per acre.

Discussion

Bromley That is a much lighter cut than some of the other men.

Peterson Could be, but I believe that it is an economic cut, certainly 14 cords per acre in timber this size is an economic cut.

Bower What percentage of the volume did you remove?

Peterson I did not calculate the percentage, but I estimate that it is about 30 to 35 percent of the total cord volume.

Bennett When Dr. Heimbürger mentioned about these trees starting to flatten out, I was just wondering whether one item that we didn't mention may have influenced him in making that statement. We have severe ice or glaze storms in this area and this area has been hit twice by that. I have a feeling that maybe what you are speaking about may have been the result of our ice storms.

Heimbürger I am a little stubborn on that, I still think even without ice storms you will have some slowing down of your growth in the largest trees.

Peterson One other thing, I would like to say something about spacing and distribution. It is very important. I am not thinking of it from a mechanical standpoint, that every tree be so far apart, but I am thinking of it from the use of the area involved. I believe that it is important to retain the canopy and yet to give the individual crowns room to grow. Also, while it may not be a valid assumption, spacing in an even-aged stand may be a guide to root competition.

Raup Studies at the Black Rock Forest on root competition are preliminary, not yet published. There is fair indication that in stands from 40 to 60 years old with a closed canopy of oak, maple, beech, ash the central hardwood mixture - under every square foot of the surface of the soil, on the average, 4 trees are in competition for moisture, space and nutrients.

Schreiner My conception of competition between plants goes further than mere competition for moisture and nutrients. There is often also an inhibiting effect. This inhibiting effect of one plant on another has been studied by several investigators during the past sixty years. There are species differences in the response to these inhibiting effects and it is highly probable that there is also individual variation within species. For example, we have an experimental planting in Maryland which indicates that hybrid poplars can be grown (on suitable sites) in mixture with loblolly pine. These same poplars will not survive in an equally dense hardwood mixture, and they are extremely sensitive to the inhibiting effect of sod. There are clonal differences among poplar hybrids in resistance to the inhibiting effect of grass and weeds, but we do not have any hybrid clones that are sufficiently resistant to justify selection for this characteristic.

Morrow In regard to root competition as compared to crown competition, we have to keep in mind the soil quality and quantity. I would just like to point out that the findings on the Black Rock Forest may not apply here at all.

Schreiner That's true. The first root inhibition studies, for example, were on shallow soils in England where the growth of apple trees was inhibited by sod. This effect was not apparent in other regions of England where the orchards were on deeper soils. We find the same effect with hybrid poplars. If they are planted on soil less than 18 to 24 inches deep, we must keep grass and weeds out of the planting (until it can be shaded out by the trees) either by several years of cultivation or by dense planting to get early shade. But

if we have a deep soil, 6 or 8 feet of good silt loam, then we need only eliminate the grass during the first year. Apparently the poplar roots get down below the mass of the grass roots. We have planted these poplars experimentally in square and circular scalps. By careful digging we found that the roots spread out to the edge of the scalp and then went down. In small scalps they failed to go down below the grass roots.

Bromley Suppose that the geneticists were to come up with a sugar maple twice as good. Would you convert your stands to it?

Peterson First of all we have to assume that everything that the geneticists are offering us is good. If it is twice as good as the other sugar maples, I think that it is worth serious study to see whether or not conversion is economical. Maybe we can put it in here. Maybe the cost of removing what is here and putting in what is twice as good isn't worth it.- Maybe, it is not worth it at this time. Maybe sugar maple, even twice as good, is not the best tree on this site.