

Forest Land Management and The Use of Fire

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I FEEL AS IF I'm doubling up a little on this program but what I have to say at this point will be rather brief and it will be of familiar techniques to those of you who are engaged in forest land management and the use of fire. The purpose of this talk is merely to explain our application of fire on the state forests. We've carried these programs on for a good many years. We have about 310,000 acres in Florida State Forests. The largest is the Black Water River State Forest in northwestern Florida which comprises about 183,000 acres, and our latest acquisition is the Withlacoochee River State Forest of about 114,000 acres in central Florida near Brooksville or in that vicinity. We have a small state forest, Pine Log, near Panama City of 6,600 acres and Cary Forest in Duval and Nassau Counties with about 3,300. All of these forests have different vegetation types and an intermingling of types. They have their own peculiar problems just as every large acreage does.

The approach to fire suppression and the use of fire is different in each one. For example, in Cary Forest: it's a young forest, speaking from the standpoint of the age of the stand, and it is entirely Slash Pine. I think we have one or two, possibly four, areas of ridgeland with some scrub oak, but fortunately the rest of the forest is strictly flatwoods. The reproduction has

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been built up through the complete exclusion of fire for a good many years to the extent that we now have a second stand capable of sustaining prescribed fire. We periodically burn the areas that warrant controlled fire chiefly for hazard reduction.

Withlacoochee is a different problem. It has three different situations, roughly. It has the sandhills, predominantly scrub oak. In this particular area of 40,000 acres called the Citrus Unit, we have one of the most concentrated and largest deer herds in the state today. There is a tremendous population of deer for the acreage; the area is in fact overstocked and overgrazed. The cattle in the area add to the problem and these we will gradually remove, eventually eliminating cattle grazing completely in that area. This will take time because the grazing has been permitted on the area for a good many years. The people will have to look for other means of feeding their cattle eventually, but we can't force them out. It's poor public relations and it works a hardship on people who have been dependent upon the forest for this purpose for many years. Very likely we will maintain in that stand for many years to come, a good deal of the hardwood. This seems to supply one of the most important elements of food for the deer herds, and certainly the deer herds are going to be the main crop in that area. Here is where the multiple use concept shifts the balance from timber production to recreational use. We are, however, converting some of these areas into pine plantations but our work there will proceed very slowly and is combined at the present time with a game habitat study in cooperation with the Florida Game and Fresh Water Fish Commission and the Florida School of Forestry.

In this area we practice a method of burning which has various names. I was trying to find out from Bob Cooper just what technical name is given to this method because I think it originated in South Carolina. Perhaps Joe Riebold may have originated it, or some of those folks up there a number of years ago. It is an application of fire in areas where the rough is rather light and the overstory is thin. It is a method of using fire which allows you to reduce the cost of initial preparation be-

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cause it can be done with the minimum number of firelanes. You can get through with the job in a given period without having to worry about "catchouts" from the firelines that you leave burning at night with conventional methods. The popular name of this method down in the Withlacoochee State Forest is "confused fire." That's a pretty good name. It fits it like the name "swingeing." I always liked that term. I recall riding through the woods with a strong advocate of control burning many years ago who was doing "swingeing" burning and doing it very effectively. But we laughed about him because whenever (he was in the lead car and we were following him) he was driving and we saw his hand sweep out the window we knew he was talking about "swingeing." That's the way he burned.

This method of "confused fire" or "checkerboard fire," or whatever the technical name would be, consists of burning into the wind, starting from a fire barrier. We use from four to six men depending on available labor force (this can be done by jeep). You start out one man into the wind with a fire pot. A hundred yards next to him you start another man at the same time in the same direction. You spot fires every 75 to 100 feet, depending on weather conditions (there again it's a question of individual judgment). The spot fires burn in all directions. We always do this burning when temperatures are low. We have not done it during high temperatures. With temperatures low and a fairly steady wind blowing, preferably from the north, the men continue in a straight line into the wind across the property until they reach the northern barrier. This particular area lends itself to burning by the square mile. This was the old resettlement land-use project and those people spent a good bit of time putting a fire break around every section. Most of them are driveable and have been maintained as roads. So we can block this area off in square miles on the map start to walk a mile across to the next break, spotting fire as we go. At that point the men are met with the labor truck or the pickup as the case may be. They pick the men up and take them around to the lower end against where they began the burning and they move over 100 yards from the last fire and repeat the process.

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That takes a lot of walking but, at the same time when they're through, within a very short time after the last fire is put out, it has burned to the adjacent one or into the end line and a square mile is finished. The principle behind it, I suppose, could be better explained by Bob who understands the thermal effects of fire, but generally speaking, each spot does not burn far enough or fast enough to generate a lot of heat or a lot of head. Before it has gone very far it has run into the other one. The result is a remarkable low degree of scorch in the crowns of trees. In fact, believe it or not, frequently it doesn't remove completely the dead leaves on the scrub oak. It is done during the winter time with a low degree of scorch. The accumulation of rough, of course, is light in the sandhills; it is mostly bunch wiregrass and dry leaves, with no high palmetto, no gallberry, and none of the stuff that adds to the roughs in the flatwoods.

We're trying the "confused-fire" method a little in Longleaf stands now that have been burned over in our program and do not have a heavy accumulation of rough. I think it lends itself to a suggestion of Bob's about repeat burns in order to reduce the fuel. I think that after the initial burn perhaps this could be applied. It certainly would save money.

The methods applied in the flatwoods of Withlacoochee are strictly conventional. There's a very heavy accumulation of rough. Fire has been excluded there for a good many years and what we are trying to do now is reduce the hazard as weather conditions permit. It is a ticklish situation and this blowup I told you about where a control burn got away because of a shift in wind was typical of the hazard involved, particularly during the periods of drought.

One more word about the Longleaf stand in Black Water River Forest. The Black Water is predominantly Longleaf and therefore lends itself to prescribed burning; in fact it requires it, as pointed out previously. The early burning on this forest began even before our policy permitted it. On the Black Water, acquired in 1939, we had a good deal of grazing. This has diminished during the years but grazing was an important thing over there to those people, and the conflict between the grazing

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interests and forestry people trying to reproduce some of the understocked stands met head on. This resulted in a good deal of conflagration and conversation. We eventually met on a middle ground which seems to be successful so far. But we had fires whether we wanted them or not and it was quite obvious that many of them did very little damage where the stand was of the height, size, and age that could stand fire. We also, of course, were aware of Chapman's studies and that in some cases fire would have to be applied, particularly where brownspot became prevalent. It's unusual that for a number of years over there we saw very little brownspot even in the places where we successfully kept the fire out for several years. But it has moved in as it does everywhere, and so we have a program of burning there, for hazard reduction, control of hardwood, stand sanitation, and seedbed preparation. In that excellent Longleaf site, burning ahead of seedfall (the burning may begin in late September and continue until the seed begins to fall), has resulted in some excellent stands of natural reproduction. So, at least before we hurt ourselves too bad, we got into the application of fire in the management of Longleaf, and I think the results speak well for the procedures that were carried out through the years. This is one area that we are proud of in that we have proceeded, I think, step by step with the latest information in research, applied it, and found it adequate to do the job. There are still many answers being given us and many questions still to be solved in the management of Longleaf by the Brewton branch of the Southern Forest Experiment Station.

The open grazing of Black Water has changed entirely. There's no longer open grazing. Now we are working on what we call an association type agreement with the cattlemen. Three or four will come to us, we'll negotiate a permit, they'll do the fencing, the area is agreed to, and within the stipulations they will assist us in burning as is required by both parties. We try to work out a compromise there. We supervise the burning and say when they can and they usually supply some of the labor. There is not a great deal of demand. Thus, the association now comprises only about 15,000 acres and involves not

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more than fifteen people, but previous to this development it was a dog-eat-dog proposition and lots of controversy and lots of incendiaries. Hence we have progressed in meeting local needs without getting into too much of a conflict by trying to change the entire policy that was originally in force.

That is our program of burning. We still do not know enough about the technique of applying fire. We occasionally attempt it and run into more expense than we feel is justified. We are constantly in a quandary—does it pay or doesn't it pay? There's one point that I should mention in that regard. We don't have anyone here at this meeting that would get up and question the use of fire strictly from the standpoint of economics, but there are a few foresters and landowners who would question whether it is justified from the standpoint of hazard reduction, because of the economics as they see it, as it applies to their property. In these cases the fire occurrence is very low; they can show you percentagewise their losses over a long period of time. They balance the losses of that one per cent against what it would cost them. They balance their losses against the economics of applying fire and they say, "We don't see where it pays." This is still a problem, and it is still something to take into consideration before we say that everyone is foolish who doesn't use fire for hazard reduction.