

Prescribed Burning on International Paper Company Lands

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THERE is a general misconception prevalent about “pulp company” lands and their management, therefore, I would like to spend a few minutes explaining International Paper Company’s role as a forest landowner, why we own land, and how we manage it.

As you probably know, we have a number of paper mills throughout the South worth several millions of dollars and to back up this investment it is necessary to own considerable acreage of forest land. It is generally assumed by the public that on this land we grow pulpwood on a short rotation, however, this is not the case since we purchase the majority of the wood that we use. This comes from smaller landowners, generally in the form of thinnings. Rarely does anyone just grow pulpwood on a short rotation.

Since our lands are privately owned, they are managed primarily for the production of dollars. In many instances, we can make the most profit from the production of poles and pilings and saw logs, therefore, we grow pulpwood on short rotation only when it is economically feasible or within the shadows of the smoke stacks of our mills.

CARROLL J. PERKINS

We employ over three hundred technical foresters in the management of our forests in the South. These foresters prescribe burned approximately a million acres in the last 5 years. So let us now consider some of our foresters' prime objectives in burning.

Seed Bed Preparation.—Most of our lands are still regenerated naturally. This means that the pine seed must fall on mineral soil to germinate. The most economical method of obtaining the required seed bed is by using fire to remove organic litter from the forest floor prior to seed fall.

Hazard Reduction.—In all too many instances, fire has been excluded from some of our lands, and the litter has been allowed to accumulate to such an extent that wildfires can be disastrous. By prescribed burning (which implies favorable weather and fuel conditions) the forester may remove this hazard.

Hardwood Control.—Most of our land is natural pine sites (that is, pine will produce greater volume per acre than any other species). However, with the exclusion of fire, these sites all too often have become infested with non-commercial species. If the area is not burned for a long period of time, these may become well established and can be removed only by costly mechanical or chemical means. Here, an ounce of prevention is worth a pound of cure. The intelligent forester periodically cleans up his pine sites by the use of fire.

Control of Some Tree Diseases.—It is a well known fact that throughout most of the range of the longleaf pine, "brown spot" may be responsible for the seedling remaining in the "grass stage" for many years. Our forester prescribe burns such areas of longleaf seedlings to remove the damaged needle and fungus. The seedlings respond by beginning height growth.

Indications are that another not so well known disease, *Fomes annosus* or root-rot, may also be affected by fire. At present, we are conducting experiments in cooperation with the Southern Forest Experiment Station to learn more about this.

Slash Removal Following Logging.—The economics of today dictate that we should not leave land idle for long periods of time, consequently, the forester quite often clear-cuts an area and burns the logging slash as soon as possible so that the area may be replanted.

BURNING INTERNATIONAL PAPER COMPANY LANDS

Game Management.—First, it may be assumed that, as far as game is concerned, fire used for any purpose is better than complete protection from fire. Since nine out of every ten of our foresters are hunters, we have found that we must exercise caution in explaining to them the beneficial effects of fire on game populations or we will turn a conservative disciple of old Smokey the Bear into a pyromaniac. However, since only a few of our foresters are present, I feel reasonably safe in explaining some of our uses of prescribed burning in the management of our game.

Quail and Turkey.—Many years ago, Mr. Herbert Stoddard, Sr. pioneered in the use of fire in quail and turkey management here in the Southeast and all I can say is that we have followed his recommendation with excellent results. We burn our quail and turkey management areas annually in March and, subsequently, they produce an abundance of food plants such as partridge pea, beggar lice, lespezas and grasses. At the same time, they provide excellent conditions for feeding, nesting, and roosting. We provide the only other requirement of quail, that is, escape cover, by plowing around and protecting certain brushy areas from the fires.

FIG. 1. Burning maintains or increases the production of quail food plants such as partridge pea, *Cassia fasciculata*. Photo by Kirtley-Perkins.



CARROLL J. PERKINS

Since we use prescribed burning for various reasons in the management of our forests, we may burn at different times throughout the year. In our game management research, we wanted to determine the effects of burning at different seasons, of fires of different intensities, and of various frequencies on quail food production. As a cooperative project with the Southeastern Forest Experiment Station, we worked out a technique for taking a sample of the top one inch of soil, separating the seed from the litter and soil by means of a seed cleaner, weighing the seed and determining the production per acre. Our first sample period was in November at which time we found that our area contained 15.6 pounds of partridge pea per acre. Another sample taken on the same area the following March showed 5.3 pounds of partridge pea seed, indicating that something, presumably quail, had consumed 10.3 pounds of partridge pea seed in the interim. An interesting sidelight was revealed by this study. We found that this land, which had been a quail shooting preserve prior to its purchase by International Paper Company, also contained five pounds of No. 8 lead shot per acre.

We also find that fire can be a useful tool in the management of deer. Under protection from fire, hardwood sprouts and seedlings generally grow out of reach of the deer within three to five years. By prescribed burning the deer range, we can kill the stems, and the subsequent sprouts are highly preferred food for the deer.

Economy of Fire.—Our own Company, until recent years, believed in total exclusion of fire from its forest lands. Fire is such a versatile tool in the management of our forests, I often wonder why it isn't used more by the forester. The reason for this may be more of a psychological one than anything else. We are taught from early childhood that fire is bad. "Don't play with matches. Don't touch the heater, etc." As we grow older, we are brainwashed by propaganda of fire killing our wild animals, destroying the beautiful forest, and laying vast areas subject to erosion, and all of this is true to a certain extent. But, I dare say that this damage is a direct result of man's exclusion of fire to such a degree that fuels accumulated to a very dangerous point. Over protection is the real villain and not the fire.

BURNING INTERNATIONAL PAPER COMPANY LANDS

The cost of prescribed burning is an item of major concern to the industrial forester. Within our Company, we see costs quoted ranging from a few cents to several dollars per acre with the generally accepted average being around one dollar per acre. I have personally observed controlled burns in which at least 40 men were on hand to burn a 200 acre tract. On the other hand, last year one of our experienced men at Southlands Experiment Forest, unassisted, controlled burned 1,500 acres in a little less than eight hours. Of course, his conditions were ideal.

I'd like to take a few minutes to explain how we do our prescribed burning at Southlands. First, let me say that most of this burning is done for game management purposes, primarily quail. This is gently rolling hill country containing nearly mature longleaf timber. The vegetation is primarily wire grass. We try to burn the area annually which keeps our accumulation of fuel very low. This is what we consider ideal burning conditions: During the month of March, a ground soaking rain followed by the passage of a cold front and subsequent strong northwest winds. We generally begin testing burning conditions within a few hours after the wind shifts to the northwest. We set a short string of fire, approximately ten yards long across the wind. If the backfire and the flank fire go out and only the head fire will burn, conditions are right. Of course, we must have something to stop the fire, such as a lake, road, or pre-burned strip. These ideal conditions seldom last over a few hours and when the fire begins to get too hot we stop burning. Generally, we are limited in our acreage burned only by how much we can set. Of course, we prescribe burn in many other ways, such as back fires, night fires, and flank fires.

Quite a few years ago when we began prescribed burning, we seldom started a fire without getting "butterflies" in our stomach. However, today, since we have learned a lot more about predicting the behavior of fires, we don't generally stand around and watch them burn. Quite often at night we go home, go to bed, and even to sleep.

I must admit that we seldom have a burn that I am proud of immediately following with scorched lower limbs and so forth, how-

CARROLL J. PERKINS

ever, I must also state that I have never made a prescribed burn that I wasn't proud of six months later.

Future of Prescribed Burning.—In closing, I would like to spend a little while looking into the future of the use of fire on our lands. First, I believe that, in time, all of our lands will be regenerated by artificial means; that these lands will be planted to super trees which will grow faster, straighter, bigger and better than their wild ancestors; that these trees will be planted in proper spacing and competition controlled to a high degree. I believe that we will grow pulpwood on a rotation that will average approximately 20 years. I also believe that we will grow sawlogs, poles and piling on a 40 year rotation or less. I believe we will practice game management on our land to a high degree. I also am of the opinion that the demands of the public for outdoor recreation will change tremendously and such activities as hiking, camping, bird watching, and just appreciating the wonders of nature will become much more popular. And, I believe that the intelligent use of fire will have a place in all of these operations, whether it be the elimination of competition from hardwoods, removing slash, producing quail and turkey foods or increasing our wildflowers, songbirds, and butterfly populations.