

# Some Comments Concerning the Wise Use of Fire

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I WANT to thank Mr. Komarek and the Tall Timbers Fire Ecology Conference for giving me the opportunity to appear on this program. My interest in the wise use of fire in the management of forest wildlife and southern pine forests spans a period of nearly 40 years. In the early 1930's I obtained and began to study Mr. Stoddard's book "The Bobwhite Quail, Its Habits, Preservation and Increase." Soon thereafter, I arranged to visit Mr. Stoddard to see his management program in action. In addition to meeting Mr. Stoddard, I met Mr. Ed Komarek. During this visit I saw forests of magnificent longleaf pine, clear of hardwood brush and supporting heavy stands of legumes, the staff of life of most bobwhite populations. I also saw men with axes thinning young longleaf stands to make shooting possible. Mr. Stoddard pointed out that these stands had developed on areas that had burned annually.

On a subsequent visit I found Mr. Komarek burning a loblolly stand for the second time during one winter. I saw fully stocked

stands of both longleaf and loblolly pines free of undesirable brush, yet forming a high quality bobwhite habitat. In the same general area there were pine stands, many of which were only partially stocked, so wrapped up with dense stands of hardwood brush that pine reproduction was completely eliminated.

Thus, early in the southern forestry program I became convinced that fire was compatible with pine management and often essential if pine were to be perpetuated.

Stoddard had convincingly demonstrated that fire was a must if pine stands were to produce high bobwhite populations. As time passed, it became increasingly apparent that most game species benefitted by the judicious use of fire. Both rabbit and turkey responded with increased production and higher carrying capacity. Fire properly used improves the habitat for deer, an animal that utilizes large amounts of hardwood browse. However, in dense stands height growth and pruning of the lower stems are stimulated. Soon all the browse is beyond the reach of the deer. In addition, both palatability and nutritive value are lower in older browse. It is the tender sprouts that provide the highest quality food and, in turn, are relished by deer.

The forester, aware of the heavy damage caused by uncontrolled fire, especially in young stands, was slow to utilize fire as a useful silvicultural tool. Rather grudgingly he began to admit that fire was essential in the management of young longleaf. But foresters were busy planting loblolly and slash pines on longleaf sites. Also, natural loblolly and slash regeneration was usurping other longleaf areas. However, following World War II, foresters began to use fire for various silvicultural purposes and today, controlled or prescribed burning is widespread throughout the southern pine belt.

The slow acceptance of fire as a silvicultural tool is understandable. When the forestry program began in the 1920's, there was a feeling that the forest could easily be reestablished if fires were kept out and only selected trees were removed from the forest. The first awakening came when it was realized that hogs were destroying young longleaf seedlings, and reestablishment and growth of longleaf required annual or periodic burning.

Then came the realization that the open pine forest so common

to the South was being invaded by aggressive species of hardwood, most of which had little commercial value. Pine reproduction, less tolerant than the hardwoods, was shaded out. To maintain the more valuable pines, the brush had to be controlled and fire was the easiest and cheapest method to accomplish this. Today, a second change is developing. Foresters, both private and public, are turning to clear-cutting or other methods of harvesting timber that will produce even-aged stands. But the modern clear-cut is vastly different from that of the late 1800's and early 1900's. Then the trees were largely over-mature and no effort was made to reestablish the forest. Now the forest may be young—a pulpwood forest—when cut, but every effort is made to establish a new forest at once so that there is only a very short unproductive period. In even-aged management of pine forests the free use of fire is possible. With frequent cuts and subsequent reproduction attempts, required under the selection method, hardwood brush could not be controlled easily or cheaply. Successful pine reproduction was difficult to get and often impossible to maintain in competition with hardwoods.

With a clear-cutting program, the brush is brought under control by annual or periodic fires. When the clear cut is made, planting or direct seeding is relatively cheap and simple. If other reproduction methods are sought to produce an even-aged stand, success is usually assured if the brush had been controlled by fire before the harvest cut.

These comments are not directly related to the papers that follow. However, many wildlife and forest managers are reluctant to employ fire as a management tool, even though its beneficial results have been amply demonstrated. Also, there is a rather strong public belief that all fire in forest, brush and grass is harmful and therefore undesirable.