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Alternatives in Southern Wildlife-Timber Management[1]

by

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The problems of coexistence between wildlife and timber are worldwide and old. As human population increases, as competition for land becomes greater, and as land use intensifies, the problem of space for wildlife habitat becomes more complicated.

In the mid-thirties, Aldo Leopold, the father of wildlife management in this country, toured Europe for clues on how to harmonize management of wood and wildlife. Encouraged by the apparent trend toward natural regeneration of mixed forests, he felt that wildlife's position was ensured in the European forest. In this, however, he was wrong. Today, foresters in Germany, Austria, and Switzerland face the same problems we do here.

In the early forties, the Society of American Foresters appointed a committee to study the dual management of wildlife and timber—especially the effects of stand density, weeding, thinning, and improvement cuttings on understory food plants. The committee recognized that the yield of main timber species on given sites was approximately known for certain rotations, but few yield data were available for wildlife species. They found an almost complete lack of information on how to produce herbaceous food plants.

Specifically for the South the Committee expressed a need for information about (1) the kind of cutting best for quail, deer, and turkey; (2) secondary plant sucession in cutover areas; (3) the furbearing forest animals such as raccoon, opossum, beaver, and mink; and (4) the effect of clear-cuttings on turkey movements and the effect of selection cutting on wildlife food plants.

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DEMAND FOR WOOD

The South is faced with the need of producing about two-thirds of the nation's pulpwood. The most efficient and perhaps the only way to achieve this goal is through intensive even-aged management—that is, by clearcutting, site preparation, and planting of fast-growing timber crops. The variety of habitat components is likely to diminish with such intensive timber culture.

Before one decides to manage exclusively for timber, there are a number of items to consider.

Wood prices are steadily climbing. The rise is encouraging for those engaged in growing and processing wood, but it may result in increased wood imports, as we have already experienced in hardwood plywood. Some wood products may be priced out of the domestic market.

Substitutes may be used in greater quantities to replace both lumber and pulp. However, most of the substitutes are from non-renewable resources, and the energy needed to produce them is much greater than is needed for wood. The air and water pollution created by the manufacture of wood substitutes is also considerable. With the threatening shortage of fossil fuels, substitutes may not compete seriously with wood.

The acreage upon which timber crops are grown will decrease for several reasons. Much of the South's forest acreage is in small private ownerships. Most recently, much of the forest land has changed hands from rural residents to absentee owners whose primary interest may be esthetic values and not timber. A certain and predictable acreage is taken annually for such things as urban development and parks.

Outdoor recreation has increased greatly in recent years. In the South it is mostly water-oriented, but it still relegates the camping sites, and their auxiliary areas such as roadsides, to lessened timber production, or to none at all.

Public attitude toward timber growing may influence both timber production and wood consumption. Public concern for what is happening to our forests is reflected in the demand for environmental impact statements. The February 1973 issue of the *Journal of Forestry* lists a number of conditions under which such statements are required. Under certain conditions, logging must be delayed or modified to meet the requirements of the statements. Through show-me trips and other media, industry has been making special efforts to get the public to accept or at least understand the need for intensive timber management that alters the species composition of trees and understory vegetation.

It appears safe to say that wood will continue to be the primary product throughout most of the southern forest, but that it will be grown under more intensive culture and on less acreage than in the past.

DEMAND FOR WILDLIFE

Predictions of the amount of game to be produced are often vague. In the last decade, white-tailed deer and wild turkey have greatly increased in the South. Habitat conditions, combined with climatic fluctuations and protection, determine the amount of game produced and available annually. And in the long run the quantity of game determines the number of hunters. The number of animals of cer-

tain species that can be maintained by a given forest type is estimated by the Forest Service's Wildlife-Timber Coordination Guide for the South. If these numbers can be attained, and if a certain percentage of hunter success is assumed it can be calculated how many sportsmen will find rewarding hunting.

The pressure for hunting and the need for game in the South is great, as witnessed by the thousands of annual applicants for hunts on State game management areas. In other parts of the nation, notably in the congested Northeast and Pacific Southwest, hunters have decreased during the past 10 years.

In a forest unit, browse, forage, mast, and seeds have to be produced to maintain the principal wildlife species. This can be accomplished silviculturally through dispersal of cutting areas for seed and browse growth, retention of mastbearers along upland watercourses, and manipulations of stand density to encourage understory growth. More intensive habitat improvements call for permanent forest openings and food plots, or even for food supplements. All but the silvicultural measures are additional costs to the unit's operations and must be compensated for by income from game.

In the South, much hunting land is leased to those who can afford it. In some prime areas prices are as high as $200 per gun for a season. Many states charge entrance fees to public game management areas.

Fee-hunting preserves have been increasing rapidly. Prices for quail, pheasant, or ducks range from $3-5 per bird. Smaller but more intensively managed areas can thus provide more animals at a profit, thereby releasing other commercial forest land to intensive wood production.

Where game animals are kept near agricultural or forest crops, they will sooner or later cause damage. In European forestry literature game is almost synonymous with damage. Many European game laws pertain to controlling animal numbers and assigning responsibility for damage.

Concurrent with the increased interest in game, there is a growing anti-hunting movement in this country. To a large extent it is tied in with general resentment against the uncontrolled use of guns. If firearms are restricted, the number of hunters would undoubtly drop sharply.

Interest in non-game animals, especially in rare and endangered species, is increasing. According to a recent report, bird watchers and nature enthusiasts outnumbered hunters two to one. Are we prepared to speak knowledgeably about song birds' habitat needs, and about what happens to snakes in controlled burns? Presently most of the game research and management money comes from taxes on the sale of sporting arms and ammunition. Who will foot the bill for research on non-game animals?

FORECAST

The general principles of wildlife and timber relationships are known, but the data are lacking to predict output from various management alternatives. The Society of American Foresters' wildlife policy statement, as stated in the *Journal's* January 1973 issue reads:

> "Wildlife and fish are **major,** renewable forest resources and are products of their habitats. Timber, forage and wildlife can be produced together when the resource

> manager and public cooperate to keep animal populations in balance with other land uses and food supplies."

If wildlife is to be considered in a modern forest, the needs of the featured species must be taken into account with regard to their coexistence with other forest uses, primarily that of wood production. It would be futile to attempt to grow all wildlife species under all forest conditions, as there are definite affinities not only with timber type, but also with plant successional stages within the type.

The landowner or manager is still allowed to make a choice of alternatives that range from all timber to all game. Today, however, the opportunity to lease hunting rights provides a strong incentive for improving wildlife habitat. If the demand for game increases it may be well to consider habitat improvements to please the sportsmen. Lease prices are usually a function of hunter success and satisfaction.

No data are available on the degree to which income from hunting can replace or supplement income from timber in the South. Were such figures available, a model could be constructed to show trade-offs between wood and game at various levels of timber management and game habitat management intensities.

As yet, little or no direct financial return is realized from catering to nongame species, especially to rare and endangered species. Indirectly, however, the returns gained by pleasing the conservation-minded public are immense. Interest along this line is increasing.

As hunting becomes more and more a prestige activity, the quality of big game trophies will be more important than large numbers of animals. A few animals of high quality have a different impact on timber production than many animals of low quality. Good trophies require good habitats; also they are expensive. A high quality hunting program will require close control over the animal populations; habitat improvements that aid in selective harvest of game, and education of sportsmen and the general public to the importance of the hunting business.

But to accomplish all that is set forth in policy statements and is demanded by the public as sound integrated wildlife-timber management, more data are needed. These can only be gained from continued research into specific areas of southern forest ecosystems.