

by control burning and mechanical means. In most instances this work has resulted in an increased supply of preferred wildlife food species. Probably more important than the increase in the quantity of preferred foods is the increase in the quality of the foods. Increased wildlife utilization was noted in those areas receiving wildlife habitat improvement.

The authors feel the present wildlife habitat improvement program in Florida National Forests is producing good results and an expansion of this program in future years is anticipated.

#### ACKNOWLEDGMENT

A great deal of understanding and spirit of cooperation aimed toward a specific goal are necessary for any program to operate and function smoothly between two public agencies for a period of more than 20 years.

The authors at this time wish to acknowledge all U. S. Forest Service personnel who have been responsible for and connected with the wildlife management program on the Florida National Forests. Without their understanding and help, the wildlife program, as we know it today, would have been impossible.

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### PUBLIC RECREATION ON PRIVATE LANDS IN THE SOUTHEAST

By RAYMOND D. MOODY  
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It seems that the boom is on to the out of doors and back to nature concept. More and more pressure is being put on all lands for recreation by the increased number of individuals and families seeking the solitude and esthetics that the out of doors has to offer.

Hunters and fishermen, of course, are a part and parcel of the million of people seeking some sort of recreation on any and all lands available.

There are 358,250,000 acres of timberland in this country classified as privately owned. This acreage is shared by 4,510,000 individuals or companies—an average holding of 79 acres each.

Although my paper is entitled "*Public Recreation on Private Lands in the Southeast*", I would like first to give a summary of recreation on Forest Industry Lands in the United States.

These figures were compiled as the result of a nationwide survey by the American Forest Products Industries, and are probably the most complete data available at this time.

As the result of a nationwide public opinion survey in 1956, AFPI made a nationwide survey of the forest industries in 1957 to find out just what was being done on company lands in the way of recreation.

The nationwide public opinion survey revealed that only 24 per cent of the general public thought forest industry lands were open to hunting, fishing and other forms of forest recreation. Thirty-seven per cent thought that all industry lands were closed, while six per cent didn't have any opinion.

The AFPI survey covered approximately 74 per cent of the 62,500,000 acres owned and managed by industry in the United States.

\* Some pertinent figures of the survey are as follows:

Four hundred and fifty-five companies were surveyed, for a total of 46,263,852 acres.

The survey showed that 65 companies were operating public parks, with 137 parks in operation, which included 3,432 acres.

The annual maintenance of forest industry parks was \$156,345.

People using industry lands for recreation including hunting and fishing was placed at 1,533,795.

The acreage open to hunting in season was 42,737,538 or 92.4 per cent of the total area; and 96.3 per cent was open to fishing.

There are 55,928 miles of lakes and streams open to anglers, in addition to 228 artificial lakes built by industry.

Now that the national statistics have been summarized let us take a look at the type of ownership (acres of forest land) in the Southern Region.

#### † PRIVATE OWNERSHIP

	<i>Acres of Forest Land</i>	<i>Per Cent of Total</i>
Farm .....	90,143,000	46.5
Other .....	52,943,000	27.5
	<hr/>	<hr/>
Total .....	143,086,000	74.0

The pulp and paper industry owns approximately 7.0% of the total acres of forest land in private ownership.

Of the 20,385,600 acres of paper company forests in the South, 16,051,700 acres are open to hunting and fishing and an additional 683,000 acres are in state game refuges. In most cases land under state game management can be considered as open to fishing and hunting since provisions are made to manage most of these acres as public shooting preserves.

It must be kept in mind that the primary purpose of industry owning forest land is to grow timber as a crop to serve the nation's needs for wood and wood products, but wildlife, recreation, fishing, water and soil conservation are inherent parts of tree farming.

To be more specific in speaking for industry's part in public recreation, I will necessarily have to stick pretty close to my own company's activities.

International Paper Company takes pride in the fact that the company and its employees endeavor to be a part of any community where it operates. Being a good citizen of the community provides for a warmer friendship and better understanding between the public and industry.

The management of both Woodlands and Production give consideration to the welfare of the public in their operations.

Two recently completed fresh water reservoirs, constructed primarily as a source of fresh water supply for the Springhill and Louisiana Mills included provision for public recreation plans in the overall project.

In November, 1958, we dedicated a 7,000 acre lake in Arkansas, known as Lake Erling. Constructed at a cost of approximately one million dollars to International Paper Company, this body of water is furnishing recreation for thousands of people in the way of fishing, boating, picnicing and waterfowl shooting. Not content with merely making the lake available for public use, we constructed a large picnic area complete with weather shelter, indoor toilets, barbecue pits, tables, benches, two boat launching ramps, piped running water, overnight camping area and all-weather access road. We are further cooperating with the Arkansas Game and Fish Commission in making additional boat launching areas available to the public.

\* Source: U. S. Department of Agriculture, Forest Service Resource Review, January, 1953.

† For complete summary see pages 7, 8 and 9.

In February of 1958, working with the Monroe, Louisiana, Fish Hatchery and the Louisiana Wildlife and Fisheries Commission, we added more than 2,000,000 bluegill and crappie fry to "Bussy Brake", our Louisiana Mills' 2,200 acre fresh water impoundment basin north of Bastrop.

Additional thousands of fingerling bass and catfish were stocked in the brake, at the proper time. Within the last month we have executed a contract agreement with the Louisiana Wildlife and Fisheries Commission, giving them the authority to conduct a fish management program on the reservoir, which we hope will be beneficial to the public when the area is opened to fishing.

Near Bussy Brake is the now well known Wham Brake, an IPCo. waste water storage basin which has become a favorite duck hunting spot in North Louisiana. This 5,500 acre reservoir furnishes excellent duck hunting and thousands of man day use is made of the area during the waterfowl season.

Hog and Williams' Lakes in the Delta Area of Louisiana, as well as Murray Lake (700 acre fresh water reservoir for the Springhill Mill), are other examples where we have put fisheries management into practice by removing undesirable fish species from potentially excellent fishing spots. Our thanks to the Louisiana Wildlife and Fisheries Commission, and the U. S. Fish and Wildlife Service for these two projects.

In Bainbridge, Georgia, we recently established a 16,000 acre experimental forest dedicated to the search for new and better trees for our Southern soils. In March of 1959, a Forester with a Master's Degree in Game Management and 15 years experience in Game Management Work was added to the technical staff at Southlands. Concurrently with our forest research, we are conducting wildlife management studies that may produce some eye-opening conclusions in years to come. At present our Southlands Experiment Forest staff is cooperating with the Georgia Wildlife and Fisheries Commission by holding a series of controlled deer hunts on the experiment forest. They expect to add fact to fancy about the deer population and their habits in that state.

Of the land under IPCo., Southern Kraft Division ownership, 78 per cent is open to public hunting—11 per cent is in Game Management Areas, which may or may not have public hunts and the balance is being utilized by community or neighbor clubs. In addition to making this land available for public use, IPCo. has gone a step further in making concessions for game by adopting certain standards in their Timber Management Policy. The timber improvement policy includes leaving groups of hardwoods scattered throughout pine forests; preserving hardwoods in natural drains or in stream bottoms, preserving some of the better mast producing hardwoods when making bulk sales; and leaving undestory plants such as youpon, sweetleaf, dogwood, greebrier and other plants upon which animals might feed.

In addition to the Lake Erling park which has previously been mentioned, IPCo. has constructed and is maintaining 29 parks and/or roadside picnic areas across the South. We have game management agreements with seven states in the South which encompass some 400,000 acres of timberland.

If this trend is to continue the public must share some of the responsibility. Sportsmen must cooperate by properly harvesting the game, by respecting the rights of the landowners, by helping prevent forest fires, and by keeping sportsmanship in the hunt.

We can all help by keeping ourselves informed of the current trends in wildlife management and by helping to keep our legislators posted on these trends. Then, when the time comes for them to establish new rules and regulations affecting wildlife, these rules and regulations can be designed to benefit the most people and at the same time, they will be effective tools in a State's Wildlife Management Program.

One big problem that faces us today is an excess of some game species in respect to the carrying capacity of the land. An excess of the very types of game that we are trying to promote can cause immeasurable damage to the game, itself and to many of our basic wood-using industries and farm crops.

In closing I would like to repeat a statement made some time ago by one of our Company's representatives speaking to a group much like this:

"We tree farmers consider ourselves, along with all informed sportsmen, as genuine conservationists. We both want to promote our natural resources and to provide for the wise harvest of what is available. We believe this is the real article in conservation."

SUMMARY of The Recreation Survey Follows:

RECREATION ON FOREST INDUSTRY LANDS IN THE UNITED STATES			
Companies Surveyed .....		455	
Lumber, Plywood .....		288	
Paper .....		123	
Integrated .....		14	
Other .....		30	
	* * *		
Acreage Surveyed .....	46,263,852		
Acreage Owned .....	42,601,076		
Acreage Leased .....	3,662,776		
Acres Open to:		<i>Per Cent</i>	
Berry Picking .....	40,544,654	87.6	
Horseback Riding .....	36,634,506	79.2	
Picnicking .....	40,107,670	86.7	
Rock Hunting .....	37,082,304	80.2	
Hiking .....	41,845,001	90.4	
Swimming .....	40,233,796	87.0	
Camping .....	37,708,269	81.5	
Winter Sports .....	20,527,483	44.4	
Trapping .....	35,376,737	76.5	
Fern Picking .....	28,359,101	61.3	
Companies Operating Public Parks .....		65	
Number of Such Parks .....		137	
Acres in Such Parks .....		3,432	
Parks for Employees Only .....		5	
Parks Open to All .....		132	
Per Cent of Companies Surveyed Operating Public Parks .....		14.3	
	* * *		
Number of Companies Providing Following Recreation Facilities:			
(Out of 65 Companies)			
Picnic Tables, Benches .....	56	Playground Equipment .....	14
Fishing .....	56	Overnight Camping .....	40
Free Firewood .....	50	Fire Pits .....	40
Swimming .....	48	Parking Areas .....	38
Toilets .....	42	Boating .....	34
Garbage Pits .....	40	Central Shelter .....	12
Piped Water .....	31	Skiing .....	6
Stoves .....	24	Ice Skating .....	3
Boat Ramp .....	23	Ski Tow or Lift .....	2
Horseshoe Court .....	15	Other .....	8
Bath House .....	15		
Companies Planning Additional Parks in 1957 .....			31
Companies Planning Additional Parks in the Future .....			69
Annual Maintenance of Forest Industry Parks .....			\$ 156,345
People Using Industry Lands for Recreation Including Hunting and Fishing .....			1,533,795
	* * *		
Companies Reporting Principal Troubles with Recreationists:			
Fires .....	207	Ingratitude .....	134
Garbage Litter .....	196	Vandalism .....	132
Shooting Signs .....	192	Endangering Employees .....	98
Broken Gates, Locks .....	182	Slowing Operations .....	91
Road Damage .....	158	Getting Lost .....	84
Thievery .....	137	Other .....	66
Trespassing .....	134		
	* * *		

Companies Giving Special Consideration to Game in Cutting Operations	104
Companies Planting Game Food Species .....	44
Acres Planted .....	8,637
Average Big Game Kill on Industry Lands .....	127,490

\* \* \*

#### *Use of Lands for Hunting*

Acreage Closed to Hunting, Exclusive of Game Refuges .....	2,635,037
(5.8 per cent of total area)	
Acreage in Game Refuges .....	891,277
(1.9 per cent of total area)	
Acreage Open in Season .....	42,737,538
(92.4 per cent of total area)	

\* \* \*

#### *Use of Lands for Fishing*

Acres of Industrial Lands Open to Fishing .....	44,567,341
(96.3 per cent of total area)	
Miles of Lakes and Streams Open to Anglers .....	55,928
Companies Taking Steps to Improve Fishing .....	41
Companies Stocking Streams .....	22
Artificial Lakes Built by Industry .....	228

\* \* \*

## ACORNS IN THE DIET OF WILDLIFE

By PHIL D. GOODRUM

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### INTRODUCTION

There is a paucity of knowledge of the nutritive values of wild feed stuffs as well as the basic food requirements of wildlife species. The main purpose here is to summarize known nutritive values of acorns from southern oaks and to report the results of acorn water content determinations. Additionally, the number of oaks by species and size classes required per acre to sustain given levels of game species is also listed. This information is essential in coordinating wildlife needs with the timber stand improvement program in the southern pine region.

### IMPORTANCE OF ACORNS

The fact that acorns are one of the main foods of wildlife in the southern states is convincing proof of their importance. One hundred and eighty-five species of wildlife are known to feed on acorns (8 and 19). It is common knowledge that most game animals feed avidly on acorns. However, many non-game species are also heavy users of acorns, including woodpeckers, crows, bluejays, and a variety of rodents. Furthermore, feral domestic hogs and sometimes cattle and goats are serious competitors of wildlife for acorns (14 and 15).

The importance of acorns in the diet of southern quail has not been generally recognized. Analysis of 6,589 quail crops collected over an eight-year period during the months of November through February each year in the longleaf pine woodland revealed that acorns made up from 5 to 39 percent by volume of all food consumed with a yearly average of 15.8 percent (14 and 16).

Acorns are sought by wildlife as long as they are available. They are extracted from litter by game species long after they have fallen. During years of good crops they are available to most game animals for about eight months or longer. Squirrels bury the nuts in the ground, making them available all year (15 and 16). Squirrel stomach analyses substantiate this statement (6).