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Economic Aspects of Recreational Land Use in the Lake of the Ozarks Area

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COLUMBIA, MISSOURI

FOREWORD
SIGNIFICANCE OF THE STUDY FROM A LAND USE
VIEWPOINT

This study of recreational uses of land is significant to the agricultural interests of Missouri for a number of reasons. In the first place, large recreational centers such as that which has developed in the area of the Lake of the Ozarks provide local markets of considerable magnitude for farm produce. Ozark agriculture lost just such markets when the lumbering industry, which was once so important in the area, died down for want of further timber to harvest. Vacationists in increasing numbers were apparently using the area prior to the war emergency and it may well be increasingly important as a recreational center after the war is over. Just how large a market for locally grown farm produce has been provided by recreational developments in the area of the Lake of the Ozarks it was not feasible to determine but it appears to have been considerable. The total expenditures of vacationists in the area in 1939 were, however, estimated to have been approximately \$800,000.

Had it not been for the fact that the great bulk of the really good lands of the lake area were flooded upon the formation of the lake the benefit to the farming of the area would have been much greater. This flooding of good farming land may be a matter to be regretted. However, the land was purchased for a use considered more valuable than for farming and this procedure has been considered by many a constructive withdrawal of land from farming in a period when farm prices were unfortunately low.

Furthermore, the great fact uncovered in this study has been that recreation in the Lake Area offers an effective use for a large amount of land that is submarginal for farming. This use of land, as is pointed out in the study, has returned it to a high status as taxable property. Much of this submarginal land had been delinquent. At present the four counties of Camden, Miller, Morgan and Benton are obtaining considerable revenue from these lands. The revenues so collected appear to have relaxed, somewhat, the tax burdens on other forms of property, that of farmers included. Recreational property is often quite a prize in a community since its owners pay taxes but require little in the way of public service. That is, many owners of recreational property make no demands on local schools though the taxes they pay are an important source of income to school districts.

Fostering the expansion of recreational development in the Ozarks would have, furthermore, additional statewide effects important to virtually everyone. That is, the Ozark counties are not now self-

supporting from a governmental viewpoint as a number of studies have shown. State subsidies particularly for schools are often much greater to Ozark counties than are the receipts of state taxes from these counties. Certainly such subsidies are needed if educational opportunities over the State, particularly for rural children, are to be raised and more nearly equalized. From this viewpoint, the subsidies are desirable. What would be still more desirable would be to improve the tax paying power of Ozark lands by the restoration of the forests and the development of recreational property to the point that these counties would no longer need the subsidies.

The present study was designed as an exploratory investigation of the nature of recreational developments in the Lake of the Ozarks Area, and as an investigation of a type of land use the importance of which may increase in the future. The Lake of the Ozarks Area was singled out because of its large size, its accessibility to the investigators and because certain problems connected with the area were coming into the public eye. However, a number of other recreational areas in the State might have been investigated quite as profitably. It must be recognized that the war emergency, particularly as it affects travel may at least temporarily influence the situation in this and other such areas in the State. Nevertheless this study has uncovered information which should be of value in the future agricultural and recreational development of the region.

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THE GEOGRAPHY OF RECREATION IN THE LAKE OF THE OZARKS AREA

Recreation has been defined as the creative use of leisure time.¹ Although there are many forms of recreation, this study is primarily concerned with the form of recreation that takes place in the natural environment. The natural environment consists of the physical features of the landscape, the flora and fauna associated with the landscape, and the climate of a region—in essence, the natural environment apart from man-made improvements. Recreational geography is concerned with an analysis of the natural environment as to its suitability for recreational utilization. Important recreational areas are dependent upon a suitable natural environment for their acceptance by the public.

Location and Description.—Missouri's Lake of the Ozarks is located somewhat south and west of the geographical center of the State in the rugged hill country of the northern Ozark Highlands. The Lake was formed in 1931 after the completion of Bagnell Dam across the Osage River. The impounded waters of this river and its tributaries now extend some 129 miles above the dam. The shoreline of the lake, totalling over 1300 miles, is often marked with irregular coves extending back into wooded hills with many precipitous limestone bluffs adding scenic grandeur to the area. Many tributary stream valleys have been inundated. As one goes farther above the dam, the lake takes on the appearance of a large river and finally merges imperceptibly into the Osage River at the lake's upper end.

Change of Environment as a Factor in the Use of a Recreational Area.—Change of environment is in itself one of the greatest pulls a recreational area may exert on a population.² People from the agricultural plains of the Midwest and the nearby cities find real enjoyment in spending a few days or longer in the rugged environ-

*Former graduate student, Dept. of Agr. Economics, University of Missouri. For some time during the prosecution of this study, Mr. Snipe was a part-time employee of the Missouri Conservation Commission. It was this fact which made possible much of the field work which was needed to obtain data for the study.

¹National Park Service. The Recreational Use of Land in the United States, Part XI of the Report on Land Planning, p. 2.

²National Park Service, *Op. Cit.*, p. 42.

ment of the Ozark Highlands. The location of a beautiful lake in this rugged setting adds greatly to its attractiveness for few lakes are found in the non-glaciated regions of the United States. It was the formation of the lake and its use by fishermen that really started the recreational development in this part of the Ozarks and introduced outsiders to the charms of the region.

Although the lake shore is the center of recreational development, the surrounding hill country offers the recreationist an abundance of scenic beauty. Until the National Park Service acquired some 16,500 acres of rugged hill country abutting the Grand Glaize Arm of the Lake and constructed roads and scenic trails throughout the tract, the back country was largely inaccessible to the nature lover. These improvements now give the vacationist an opportunity to observe the interesting flora and its associated fauna.

Climate as a Determinant in the Use of a Recreational Area

Climatic elements such as: temperature, precipitation, sunshine, relative humidity, and wind movements are important factors in determining the vacation season of any resort area and the volume of use of that area during the vacation season. "Climates have still a more positive place in the recreational picture for the reason that the principal motive of many recreational outings is the search for a pleasurable climate."³

The Humid Continental Climate of the Lake Area.—The climate of the Lake of the Ozark region is of the humid continental type of intermediate latitudes. This climatic type is characterized by large ranges of temperature and variations in the amount of precipitation from season to season and year to year. In essence, this is a climatic type of many changes—a climate that cannot be understood by studying average conditions. About all that one may reasonably expect is that the four seasons will differ from one another chiefly in temperature. But other than temperature differences there is no certainty about the type of weather any one season will bring.

In the winter the average temperatures in the Ozarks are rather low for pleasurable outdoor activity. Although severe cold waves are the exception rather than the rule, there are few periods of any duration when the average temperatures are high enough or their occurrence dependable enough to encourage recreational activities such as those that are common in the southern states. On the other hand, ice and snow are too undependable for winter sports as in the northern states.

A general rise in temperature occurs late in March and the resulting warmth and plant growth make outdoor activity particularly ap-

³National Park Service, *Op. Cit.*, p. 44.

pealing after the cold of the winter months. However, the general public is not as free to vacation and travel in the spring as in the summer months. Children are in school and the yearly vacations usually come in summer. The springtime use of the Lake of the Ozarks area is, therefore, limited to relatively short periods such as week ends. The Ozark area with its early and interesting spring flora, however, offers the people residing in northern states an excellent early season vacation area that may in time gain greater recognition than it apparently is accorded at present.

In recent years, 1940 and 1941, the Conservation Commission has adopted a new fish management policy for the Lake of the Ozarks and Lake Taneycomo which permits fishing several months earlier than in the past. Under this management policy these lakes were open to all fishing on March 15, in 1941, outside of the areas marked as spawning territory. Since fishing is a major attraction in this area, the early opening of the fishing season under a management policy designed to protect the fish population and yet allow the sportsman more fishing, should do much to encourage the use of this area during the spring season.

The real limiting factor as far as summer use of the area is concerned is the fact that this region does experience periods of hot, unpleasant weather during which the daily maximum temperatures may rise above 90° F. for several consecutive days and occasionally above 100°. Perhaps the high temperatures experienced in the lake area are not as great a handicap in the recreational utilization of this area as might be supposed when it is considered that most of the people visiting the lake come from regions having similar temperature conditions. The presence of the water and its use for swimming and boating provide an excellent means of combating the unfavorable effects of high temperatures.

The maximum temperatures recorded in the lake area during heat waves are often much like the maximums recorded in Kansas City, but they are often higher than those recorded in St. Louis. The minimum temperatures recorded in the lake area are frequently five to ten degrees below those recorded in either city (Figure 1). The rugged topography of this area and the resultant excellent air drainage, permit cooling nocturnal breezes which are practically unknown in the cities and bordering prairie country.

Yet there are a number of people living in Missouri and other states who feel that the average temperatures recorded in Missouri are too high for pleasurable outdoor activity in summer. These people travel to regions of cooler climates and it is perhaps true that one of the most important factors limiting the use of the State's recrea-

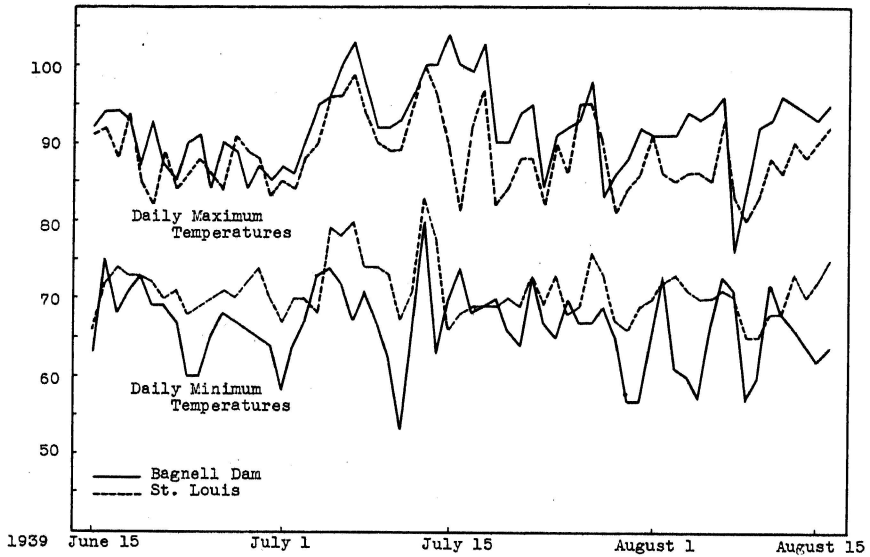


Figure 1a. Daily Range of Temperatures, Bagnell Dam and St. Louis, June 15 Through August 15, 1939.

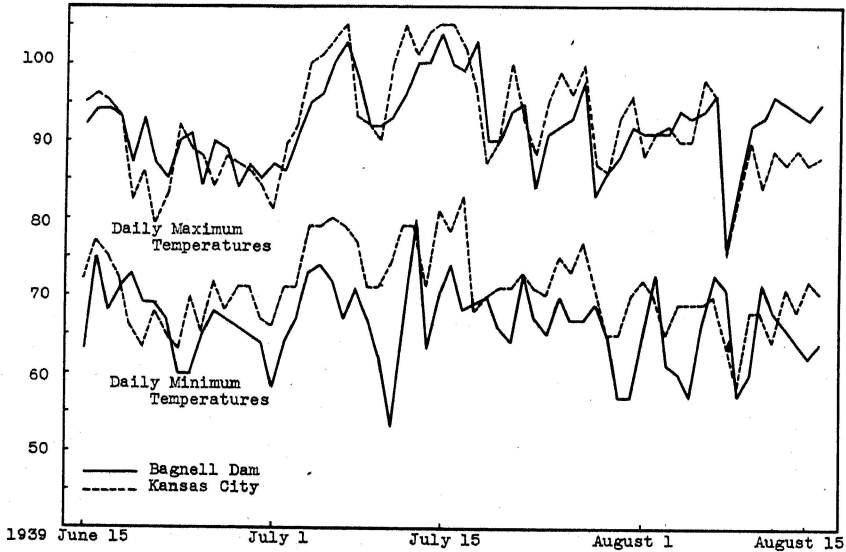


Figure 1b. Daily Range of Temperatures, Bagnell Dam and Kansas City, June 15 Through August 15, 1939.

tional areas is the comparatively high average temperatures of the summer months when vacation travel generally is at its peak.

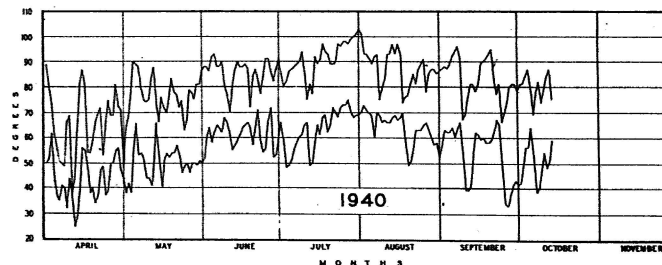
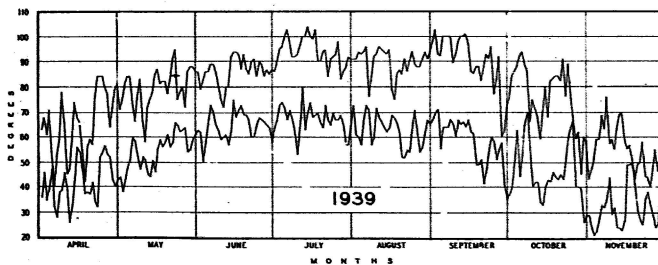
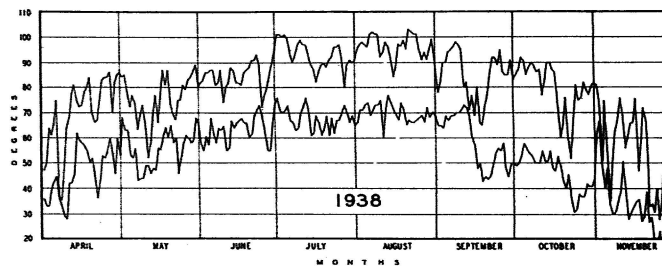
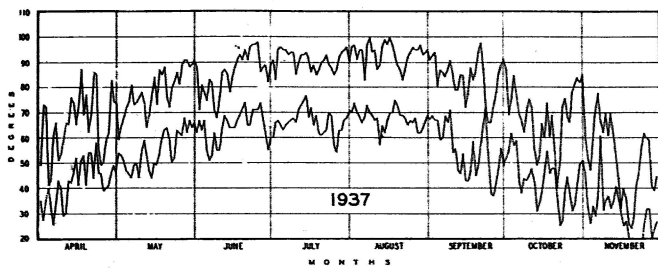
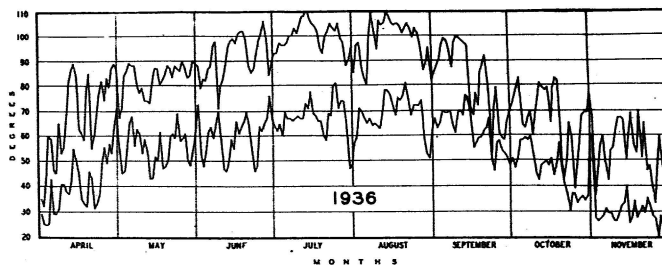
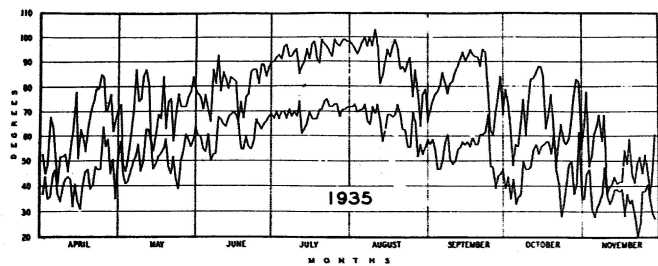


Fig. 2.—Daily maximum and minimum temperatures at Bagnell Dam, 1935-1940.

Temperature conditions are usually most favorable for the recreational utilization of the lake area in autumn. Weather conditions are normally most settled during autumn, and crisp, clear weather often prevails for several weeks at a time. The coolness of autumn suspends plant growth and brings radiant colors to autumn foliage. In many ways this season is the most favorable for outdoor activity. Fishing improves after the passing of the summer heat. Hunting is added to the outdoor activities; and the whole of the natural environment invites outdoor activity.

Figure 2 shows the daily ranges of temperature at Bagnell Dam during a five-year period. These data indicate how temperatures vary from year to year and how one vacation season may be longer than another as determined by the daily range of temperatures. In general, temperature conditions are favorable for outdoor recreation in the Ozarks from early April until late in November.

Precipitation.—Normally the amount and seasonal distribution of precipitation is not a limiting factor in the utilization of this area for recreational purposes during the vacation season. Since the Ozark region lies somewhat south of the main continental storm paths, long periods of stormy, cloudy weather are infrequent especially during the vacation season. Precipitation is most frequent in the spring and the month of May averages 12 days with rain. It is least frequent in autumn, with November averaging only 7 days with rain. The percentages of the total possible sunshine for the months from April through November average well above 60 and are highest in the summer months when the average percentage of possible sunshine is about 70. These percentages are, of course, subject to wide variation during any particular season, but fair weather predominates over stormy weather in this area during the vacation season.*

An excess or deficiency in the amount of seasonal precipitation has adverse effects on the attractiveness and recreational use of the area. An excess of precipitation is especially inimical to the resort business if it occurs during successive week ends. Furthermore, heavy precipitation means an increased run-off from the watershed which fills the lake with silt-laden waters. Months may be required for the lake to clear up after such periods and, needless to say, muddy water does not have the same recreational appeal as clear water. Fishing also is adversely affected, swimming is less desirable, and even boating is less enjoyable when the lake is muddy.

*See U. S. Weather Bureau. Climatic Summary of the United States, Section 54, Southwest Missouri, p. 3.

Deficiencies in the amount of seasonal precipitation are about as harmful as excessive rainfall. If the lake line drops too low, many acres of unsightly shore line are left above the water level especially toward the upper end of the lake. Low water levels also make it more difficult for aquatic organisms to survive. Long period droughts, as in the summers of 1934 and 1936, are particularly unfavorable. A parched landscape has lost much of its beauty and the dried summer foliage means a less colorful autumn landscape.

The Importance of Flora and Fauna in the Lake Area

“Flora and fauna provide the living interest without which no area is recreationally complete. Assume an area—if such a thing were possible—which is recreationally complete as to topography, water resources, and climatic factors, but which is without plant and animal life, and then judge the value of this area as a recreation ground. The mental picture created gives the plain answer to the question implied.”⁵

Forest.—The forest is the most conspicuous form of plant life in the lake area. Almost all the land is covered with some kind of forest growth. Although there are a few red cedars along the bluffs and ridges, the predominant forest is composed almost exclusively of oaks—white oak, post oak, black oak, and black jack oak. The rate of growth of this upland forest is slow and most of the trees are comparatively small.

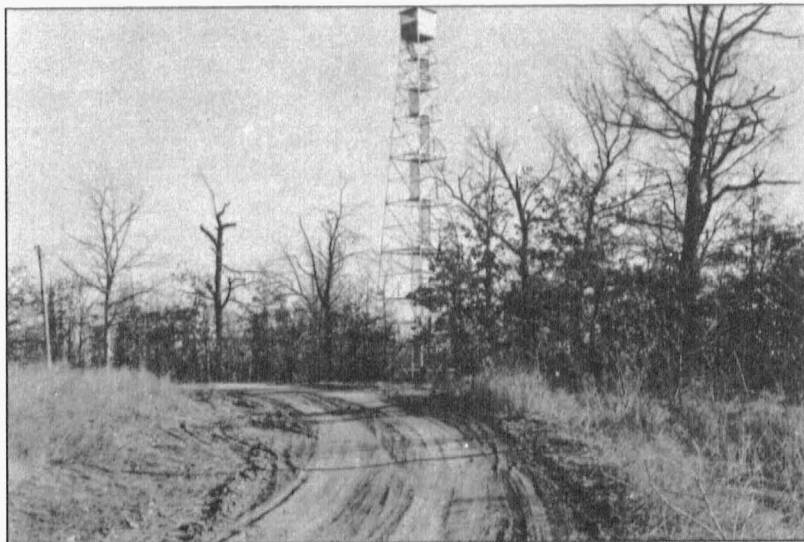


Fig. 3.—Forests in the Lake area are now being provided protection from fire by men employed by the State Department of Conservation. The tower in the picture is located not far from the Lake.

⁵National Park Service, *Op. Cit.*, p. 46.

Although the forest is one of the valuable assets of the area, it has been allowed to deteriorate to a point that has endangered its esthetic value. Periodic fires have left it filled with defective trees and the need for planned forest management is painfully apparent almost everywhere in the area. In any event, an adequate fire protection plan is urgently needed. Such a plan would protect the existing forest and mitigate the pollution of the lake by potash and charcoal. These materials washed into the lake after fires are harmful to aquatic life. Protection is also urgently needed to safeguard the owners of summer homes and resorts in the more remote wooded sections. Fortunately the lake area is included in one of the large fire protection areas recently established by the State Department of Conservation.

Shrubs and Small Plants.—The smaller shrubs and plant life of this region add materially to its charm. The Redbud, Dogwood, Wild Crab, and other flowering trees all enhance the beauty of the early spring in the Ozark hills. A number of visitors come into this region each year to observe and appreciate these and there is an abundance of other interesting plants in the Ozark hills that invite the admiration of the nature lover during summer and fall.



Fig. 4.—Dogwood in full flower contributes much to the beauty of the Lake area in the early spring.

Fauna.—“In the geography of recreation, the variety, abundance, and distribution of fauna are important factors.”⁶ The continued use

⁶National Park Service, *Op. Cit.*, p. 47.

of the Lake by the recreationist is dependent in part upon the restoration and conservation of the area's wildlife resources. Many people have been attracted to the Lake because of good fishing and others come to the area to hunt quail, waterfowl, and other small game in season. Still others, especially organized groups, visit the Regional Recreational Area, and take advantage of the opportunity to study birds and other native fauna in their natural habitat.

The Importance of Fishing.—Shortly after the formation of the Lake a number of sportsmen were attracted to it by the fishing which was, at that time, considered very good. As fishing continued to draw large numbers of sportsmen into this area, a resort industry grew up around the demand for services by the fishermen. In 1940, approximately four out of every five resort businesses in the lake area were dependent on the fishermen⁷ for the bulk of their business. Approximately 42 per cent of the resorts interviewed in 1940, reported a decline in trade since 1938, and all were in agreement that this decline was because of the poorer fishing of the more recent years. Resorts that have escaped the general decline in business reported the bulk of their guests as coming for vacation purposes and as not primarily interested in fishing.

Although it is difficult to measure fishing conditions with any degree of exactness, there is a general agreement that the average catch and the total number of fish caught has decreased since 1937. A number of reasons have been offered to explain the decline. It is believed that the better fishing prevailing in the Lake before 1938 was largely because of the abundance of food available for fish immediately after the lake was first formed. Much organic matter was covered up by the high waters and this, it is said, was the basis for abundant fish food. Fish apparently grew rapidly and good catches were common shortly after the Lake formed.

The Lake of the Ozarks was created primarily as a power reservoir, and the fluctuations of the water levels are much greater here than in most large natural lakes because of the use of water for power production. These greater fluctuations in water levels have made it impossible for aquatic plants to establish themselves abundantly along the shore of the Lake. It is probably true that the lack of such plants needed for food and cover by fish is basic in explaining the decline in fishing of the more recent years.

The recreational interests would like to see the Lake held at a fairly constant level which would permit the establishment of a permanent aquatic vegetation. Probably no such vegetation can be established if water levels fluctuate as much as is necessary if the Lake

⁷See Table 1, page 17.

is to serve its primary purpose as a reservoir.

The Osage hydro-electric station (at Bagnell Dam) is one of six major electric power sources joined with the others by transmission lines to form a unified system serving some one and one-half million people. The power company has a large investment in this hydro-electric plant. The dam was constructed in the first place with the generation of electrical energy as a paramount consideration. Recreational use of the Lake formed has become important but remains a secondary consideration. Great variations in precipitation and in seasonal demands for power are found to lead to commensurate variations in lake levels. These variations interfere with a maximum development of recreation in the area.

The two major uses of the Lake as a power reservoir and as a recreational site, clash rather badly, therefore, and plans are needed to minimize the conflict involved. The data of this study substantiate the judgment that the lake region would become a recreational area of far greater importance if the fish supply in the Lake were greater. Plans to increase the supply are, therefore, most pertinent. The great need, therefore, appears to be further research on (1) how specifically, the variations in the lake level do affect the fish population; (2) what methods of control might be inaugurated to reduce these variations without too greatly prejudicing the use of the reservoir for power production, and (3) alternative methods of maintaining the supply of fish food in the Lake if no method of controlling the level of the Lake within reasonable limits proves feasible.

Hunting.—Although the fishermen greatly outnumber the hunters using this area, this country does offer some very good shooting for quail, waterfowl, and small game in season. Since the area is practically all in forest and rather sparsely populated, hunting might well become a more important recreational activity if the wildlife population could be restored and conserved. A number of resorts remain open through the hunting season to accommodate hunters. Quail hunting is quite good in the fall and a number of city people as well as local residents have reported good shooting in recent years.

The Lake has never been a popular waterfowl refuge as might be expected. Although a number of migratory waterfowl visit this area, their stay here is comparatively short and largely confined to the upper reaches of the Lake where food and cover are more plentiful. Undoubtedly the lack of aquatic vegetation in much of the Lake prevents the waterfowl from using it for longer periods of time. At any rate the waterfowl shooting is largely limited to periods of migration when the birds drop in on the Lake for a brief rest.

CLASSIFICATION OF RECREATIONAL FACILITIES

The foregoing section of this discussion has described the natural environment of the lake area and commented on the suitability of that environment for recreational utilization. The investigation turns now to a consideration of the developments that man has constructed to further the recreational utilization of the area. To determine what these developments have been all recreational facilities in the lake area were inventoried and classified. Only after such classification has been made is it possible to determine the nature of the situation that is developing in the area.

Overall Aspects of Classification

The formation of the Lake of the Ozarks in 1931 with its 65,000 acres of lake surface and 1,372 miles of shoreline opened up a new area for recreational development. Bagnell Dam which impounds the Lake is located 167 miles from St. Louis and 151 miles from Kansas City. Camden County is the principal center of resort development. In 1939, approximately 4,600 acres of the 9,000 acres of land in private recreational ownership in the four lake counties were located in Camden County.

The area selected for study (Figure 5) includes some 237,000 acres of predominantly rough Ozark Highland in which the lake and its recreational lands lie.⁸ In order to obtain a complete inventory of all recreational facilities in this area, all real estate entries for the lands inside the boundary shown on the map were copied from the 1939 tax books of the four counties in which the lake area is located and classified into three broad classes: (1) recreational lands now in use, (2) undeveloped recreational lands, and (3) non-recreational lands.⁹ County officials and local residents aided in making the initial classification, but intensive field work was undertaken before the survey was refined and completed.

Since this study was undertaken primarily to obtain data on the recreational developments, further study of the lands outside of the lake area boundary was necessary in order to make the inventory of all recreational properties (actual or potential) in this vicinity complete. This latter phase of the study was particularly important in connection with benefit areas along the main highways leading to the Lake.¹⁰ A number of businesses primarily dependent on the tourist traffic to the lake area have been included in this inventory although

⁸The area enclosed in these boundaries is termed the lake area throughout this study.

⁹This classification scheme closely resembles the one used by Dr. George S. Wehrwein and Kenneth Parsons, *Recreation as a Use of Land*, Wisconsin Agricultural Experiment Station, Bulletin 422, April 1932.

¹⁰For a discussion of economic benefit areas see Robert M. Howes, *Recreational Opportunities Arising from Reservoir Construction*, *Economic Geography*, Vol. 15, No. 3, July 1939.

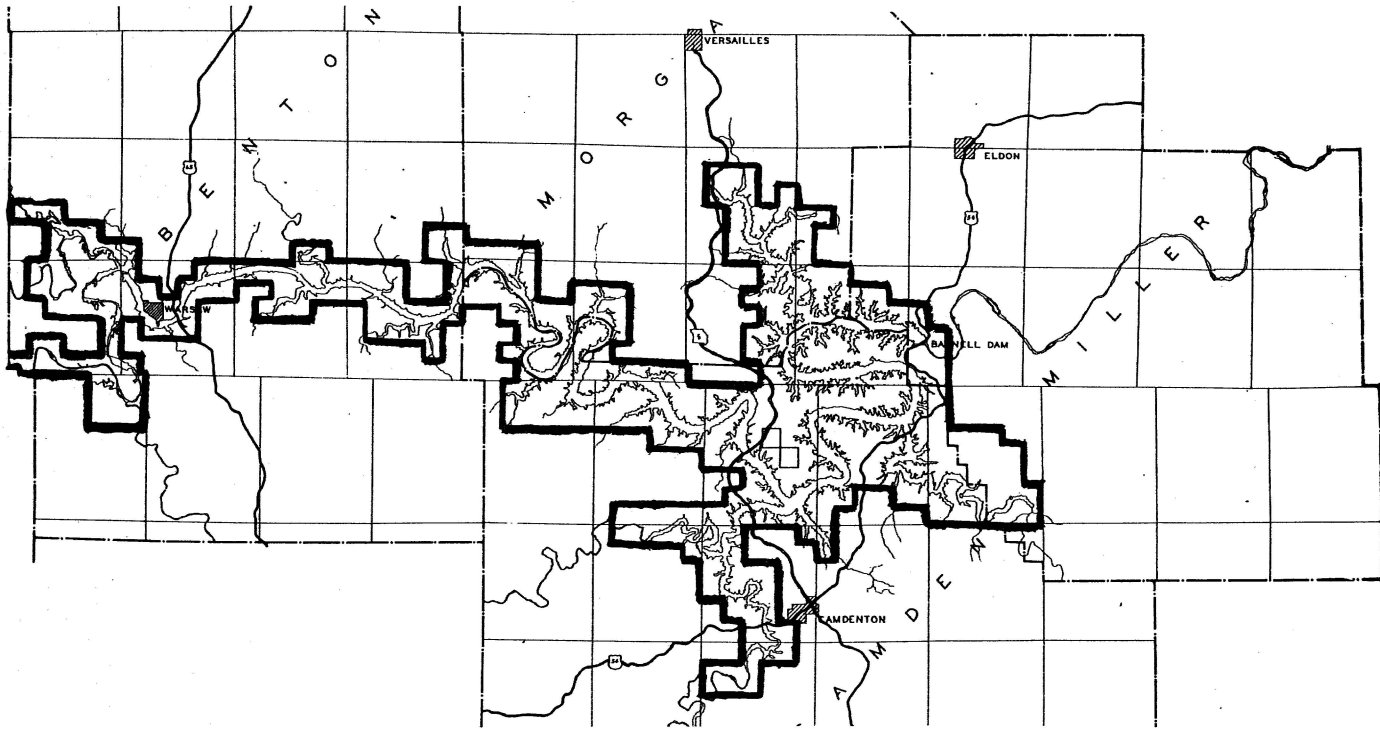


Fig. 5.—Lake of the Ozarks and vicinity showing the area selected for study.

they are located at some distance from the Lake on the primary highways and in the principal resort towns of Camdenton, Linn Creek, Eldon, Gravois Mills, and Warsaw. Such a method of study has made possible a complete inventory of all recreational facilities.

Since the developed recreational lands are largely confined to a discontinuous narrow fringe of lakeshore and highway frontage, over three-fourths of the land entries inside the lake boundary were classified as undeveloped recreational lands and non-recreational lands. The undeveloped recreational lands and much of the non-recreational lands form an area of approximately 111,000 acres of sparsely populated forest lands enclosing the Lake. Toward the upper reaches of the Lake where the stream valley is less subject to inundation, much of the lakeshore is used for farming and the forest lands are confined to the rough lands surrounding the stream valleys.

Commercial Recreational Real Estate

There are some 297 business enterprises in the lake area that are principally dependent upon the expenditures of visiting recreationists. (Table I). These business establishments are the privately owned

TABLE 1
COMMERCIAL RECREATIONAL FACILITIES IN THE LAKE AREA, 1940

Classification	Camden	Morgan	Benton	Miller	Total for Lake Region
Summer Resorts	21	4	0	2	27
Fishing Resorts	62	27	18	6	113
Cabin Camps	28	3	1	11	43
Resort Hotels	11	2	1	2	16
Recreational Businesses	<u>54</u>	<u>7</u>	<u>8</u>	<u>29</u>	<u>98</u>
All Commercial Recreational Facilities	176	43	28	50	297

recreation industry of this region; and the tourist expenditures made in purchase of the services this industry supplies have become the important source of income for an area which was predominantly a farm and forest community before the formation of the Lake. An analysis of these expenditures will be attempted in a subsequent chapter of this study.

Most of these business establishments have been classified as fishing or summer resorts and are located in the immediate vicinity of the

Lake. In general, the other business establishments are located along the main travelled arteries leading to the Lake and in the small resort towns in the vicinity of the Lake. Much of the discussion presented below under the various classifications of business types is descriptive. However, some of the more important problems confronting certain types of business are analyzed.

Summer Resorts.—A summer resort, of which there are 27 in the lake area, is a recreational development of a relatively pretentious type. In general, the more expensive resort developments around the Lake are classified as summer resorts. The usual summer resort consists of several acres of land on which attractive housekeeping cottages have been constructed in harmony with the natural environment. The more accessible private beaches are usually provided by the summer resorts.



Fig. 6.—These pictures, taken in the summer of 1940, illustrate typical developments of the summer resort type in the Lake area.

Although a resort does not have to be modern to be classed as a summer resort, a majority of the summer resorts are well equipped with modern conveniences that include electricity and electrical appliances, running water, modern plumbing, cooking gas, excellent beds, and complete kitchen utilities. Most of the summer resorts have a general store in connection with the resort and it is possible to buy groceries, meats, and miscellaneous supplies from the resort.

Summer resorts seek also to provide diversified recreational opportunities for the guest of the resort. Usually there are attractive surroundings which invite rest and relaxation for those who do not care to enter programs of active recreation. Since most of the summer resorts are located in the immediate vicinity of the Lake, they are equipped to offer boats and other equipment needed for water sports. Equipment and facilities for bowling, tennis, horseshoes, badminton, table tennis, shuffle board, and archery may be had at a number of summer resorts.

The quality of the furnishings and the recreational opportunities available enables such resorts to cater to vacationists who remain at the resort for a week or longer.

Fishing Resorts.—Since most of the early recreational development around the lake was designed to accommodate the fisherman, the fishing resort, of which there are now 113 in the lake area, is the predominant resort type. Many sportsmen were attracted to the shores of the Lake by the excellent fishing conditions that prevailed here shortly after the Lake was formed. These sportsmen created a demand for services that was met by a number of investors who built small resorts along the shores of the Lake. Since the majority of the people using these accommodations were fishermen, such resorts spe-

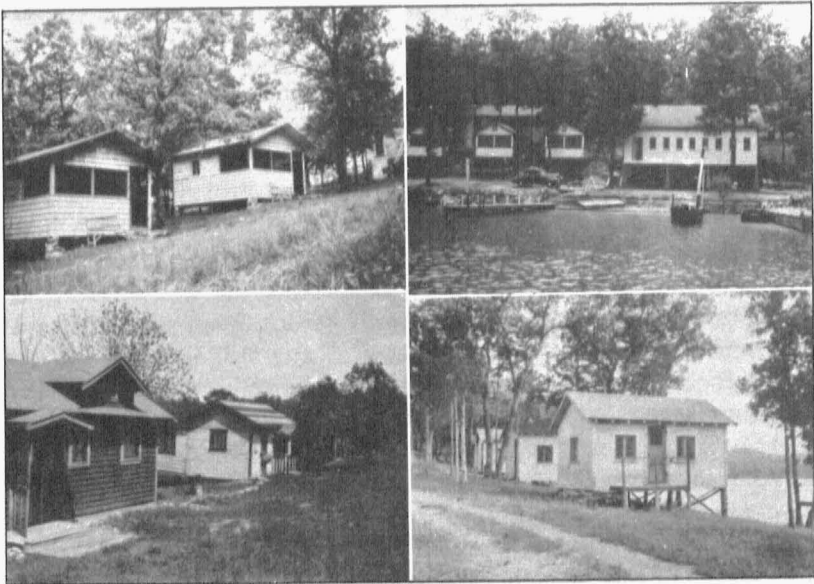


Fig. 7.—Fishing resorts illustrate the type of accommodations commonly provided the fishermen coming into the Lake area.

cialized in serving the fisherman, and it is in recognition of this fact that these resorts are so classified in this inventory.

The typical fishing resort consists of several acres with lake frontage on which a small group of housekeeping cottages have been constructed. In addition to the cottages one usually finds a general store and a gas pump in connection with the manager's office and living quarters. The activity of the resort centers around the boat dock and fishing. Few good beaches or swimming docks are found at the fishing resorts. Even the surrounding countryside is often too rough or impenetrable to permit the guests to explore the environs of the resort. In general, the fishing resort does not have the comfortable accommodations, the attractive surroundings, or the diversified recreational opportunities of the summer resort.

The superior fishing of the early years represented a boom period for fishing resorts. The numbers of fishing resorts multiplied to satisfy a demand based upon a much larger fish supply than the Lake is apparently now able to provide. The surplus of fishing resorts can be remedied in two ways. First, a great improvement in fishing, or second, the adaptation of these resorts for use as summer resorts or vacation camps and the like with lesser emphasis on fishing. Perhaps something will be accomplished in both directions; though, since forthright plans to rejuvenate fishing are hardly yet in a preliminary stage, the chief direction of adjustment must, for the time being, be of the second variety.

Cabin Camps.—Unlike the summer resorts or the fishing resorts, most of the 43 cabin camps found in the lake vicinity are located on the main highways at varying distances from the Lake. The cabin camp caters to all types of travelers and competes with both the summer resort and the fishing resort for the tourist trade. Some of the better cabin camps with pleasant surroundings are able to hold their guest for a week or longer and effectively compete with the summer resorts. Often the fisherman prefers the accommodations offered by the cabin camp and makes his headquarters at such camps and commutes back and forth to his favorite fishing spots on the Lake. However, on the whole, the cabin camp usually serves the transient tourist or the week-ender, and the average stay of all guests at cabin camps is somewhat below the average stay at the fishing resort and definitely shorter than the average stay at the summer resort.

Some of the best developments in the lake area have been classed as cabin camps in this inventory. On the other hand, some of the least attractive developments have also been classed as cabin camps and these, unfortunately, are grouped along the highways where they are

most conspicuous to the visiting public. Usually the cabin camp is found in one of the small resort towns. Too often these camps consist of groups of small cottages closely crowded together without any developmental plan or outward evidence of attempted integration with the environment. In the main, the cabin camps offer modern accommodations for lodging and meals but seldom are they equipped to cater effectively to the recreational interests of their guests.

Resort Hotels.—The 16 small hotels in the lake area that were built after the formation of the Lake have been classified in this inventory as resort hotels. Such a classification assumes that these hotels were built primarily to accommodate tourists visiting the lake area. However, some of these hotels make strenuous bids for other types of business since the tourist trade has not provided a full demand for the available accommodations except during holidays and busy summer week ends. The majority of the resort hotels are located in the small resort towns. However, others are found along the highways or on the lake shore. With the exception of the few hotels located on the lake shore, the resort hotels do not cater especially to recreational travel. Rather they appear to be dependent on the resort area as a whole to provide recreational facilities for their guests.

The accommodations available at the resort hotels are good, but, perhaps because they do not make a direct bid for the recreational trade, the average length of stay of guests at these hotels is short. It is indeed a type of business more dependent on the transient tourist than the vacationist trade.

Recreational Businesses.—There are about 100 small businesses in the lake area that are primarily dependent on the tourist trade. In general, these businesses are found along the main arteries of tourist travel and in the nearby towns. The main business types represented in this classification are: restaurants, groceries, filling stations, souvenir stands, taverns, and miscellaneous businesses which include such unrelated establishments as beauty parlors and lumber yards. In making this classification, it was rather difficult to determine just what businesses in the area were to be counted as dependent on the tourist trade. In general, only those businesses were included that appeared to derive the bulk of their trade from the recreational traffic. Many resorts have small stores and service stations in connection with the resort itself and those have been included as a part of that particular resort and not as independent business types as recognized by their classification.

Recreational businesses are dependent on the flow of tourist traffic into the lake area. These enterprises must do a good volume of busi-

ness during the vacation season if they are to be at all successful. Some of these are, indeed, seasonal businesses operated only during spring, summer, and fall. Many of their owners have other sources of income, and interviews with them disclosed the fact that a majority of them have experienced difficult times in recent years.

Non-Commercial Recreational Real Estate

There are approximately 580 separate non-commercial recreational developments in the lake area (Table II). Approximately 7,200 acres of land are assessed to the owners of the 557 summer homes and 18 recreational clubs included in this category. These facilities have been planned and constructed by individuals and groups primarily interested in providing recreational facilities for themselves.

TABLE 2
NON-COMMERCIAL RECREATIONAL FACILITIES IN THE LAKE AREA, 1940

Classification	Camden	Morgan	Benton	Miller	Total For Lake Region
Summer Homes	244	117	164	32	557
Recreational Clubs	9	4	4	1	18
Waysides	1	0	0	2	3
Public Recreational Areas*	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
Total Non-Commercial Real Estate	255	121	168	35	579

* Lake of the Ozarks Recreational Area is located in Camden and Miller Counties.

Also included in this category are about 17,000 acres of publicly owned and developed recreational lands. By far the most important in this category is the Lake of the Ozarks Public Recreational Area which was acquired, planned, and developed by the National Park Service. The State Highway Commission has also provided three waysides, or small roadside park areas, designed primarily for the use of the highway travelers.

Summer Residences.—Approximately 4,000 acres of recreational lands are held by the owners of summer residences. The majority of the summer residences have been constructed in platted subdivisions, but the greatest number of acres of land is held by those who have constructed developments outside of plats. The term summer residence necessarily includes a number of developments of varying types

and values. Small lake shore cottages valued at approximately a hundred dollars and lakeside estates valued in the thousands of dollars are all included as summer residence types.



Fig. 8.—These pictures of summer residences, taken when the leaves were off the trees, illustrate the types of cottages commonly constructed by the summer residents of the area.

The category of “summer residences” is based mainly on the way the development is used. The developments included in this classification are used almost entirely as seasonal residences by their owners. However, there are several cases where the owners of lakeshore homes have retired from active life and have chosen such sites for their permanent homes. However, if a residence site is not in the immediate environs of the lake, or is not used for recreational purposes, it has been classified as a non-recreational land use in this inventory.

Summer Residences on Platted Subdivisions.—Shortly after the formation of the Lake a number of acres of lakeshore lands were surveyed and platted into lots for future recreational development. Most of the platted subdivisions were given attractive names and their promoters made vigorous campaigns to sell lots in these subdivisions to prospective builders of summer residences.

The investment in summer residence real estate is considerable and varies greatly from subdivision to subdivision. In general, the largest investments have been made in subdivisions that offered the best development plans on desirable sites. The well-planned subdivision

provides good roads of access, running water piped to the lots, electric connections on the lot, and deed restrictions regulating and protecting the type of improvements that may be constructed.¹¹

Other subdivisions were laid out on less desirable sites. Some were laid out on high bluffs overlooking the lake where most of the lots are without water frontage or an easy access to the lake. Others are located some distance from good all weather roads. In some cases lots sold well when the lake was first formed, and the general development of recreational lands was in progress. But in recent years there has been little further development on the less well located and planned subdivisions. In fact, it is not unusual for the promoters of poorer subdivisions to have lost interest in their development. This lack of interest is reflected by the number of lots in such subdivisions that appear on the county collector's tax delinquency lists.

Summer Residences in Acreage.—Approximately one-fourth of the summer residences in the lake area are found outside of subdivisions. These developments are found on acreage tracts that range in size from one acre to several hundred acres. In general, most of these developments are made only by relatively well-to-do people because the cost of land, of building roads, and of making provision for utilities runs the investment cost up. In choosing a site for development, the prospective builder has almost an unlimited choice as there are thousands of acres of desirable undeveloped recreational lands to choose from.

The more valuable summer residences in the lake area are located on sizeable tracts of land that include considerable lake frontage and large holdings of rough lands running back from the Lake. Such land holdings insure privacy for the owner and protect him from infringement by inferior developmental types.

Recreational Clubs.—There are 18 private recreational clubs scattered along the shores of the Lake of the Ozarks. Although most of these clubs differ as to organization, they were formed as a method

¹¹The following 14 items of restriction represent those most commonly encountered in the recorded subdivision plats.

1. Improvements constructed on the Plat must be used for residential purposes unless approved for commercial uses.
2. All building plans must be approved by owners of Plat.
3. No further subdivisions of the Plat.
4. Set back lines must be observed.
5. Improvements must be in harmony with the environment.
6. No billboards or advertising.
7. No sale of liquors.
8. No cabins under \$300.
9. No livestock.
10. That all sewage be disposed of through septic tanks as prescribed by the State Sanitation Department.
11. Restrictions are binding 25 years.
12. Property owners may sue violators for damages.
13. Agreement necessary to continue deed restrictions.
14. That all buildings must be faced with not less than 30 per cent of the exterior elevation with stone.

of providing recreational opportunities for groups with common interests. In some cases the facilities of such clubs are owned by individuals, while in other cases they are owned collectively. However, there is always some form of organization and the club has a common name with membership restricted to approved personnel.

While the recreational clubs have been formed by groups interested primarily in hunting and fishing, several of the larger clubs were evolved primarily as vacation centers for club members. Ordinarily the recreational club consists of several buildings used for housing and a club house used as a dining hall and a social center. The land holdings of such clubs range from a lot or two in a subdivision to large acreage tracts with approximately a section of land.

Windemere Club on the Niangua Arm of the Lake, is an instance of this latter class of development. This club was planned by a large mid-western company as a vacation center for its employees and their families. Since this company has branches in some 20 mid-western states, the Lake of the Ozarks is a centrally located vacation center for the majority of those working for the concern. The employees are encouraged to use the club for vacation purposes, and all the accommodations of the club are available without charge to them.

The land holdings of Windemere Club consist of about 625 acres of rough Ozark hill land running back from the Niangua Arm of the Lake. The improvements of the club are built around one of the coves of the Lake and include 42 modern buildings that are used for housing, social centers, and maintenance. The cabins are built of rustic materials and are modern throughout while the club house is a modern building designed for the social activities of the club's guests. The following recreational opportunities are provided: trap shooting, horseshoes, horseback riding, archery, rifle shooting, soft ball, golf, tennis, swimming, nature trails for hiking, boating, and fishing.

Public Recreational Areas

Lake of the Ozarks Recreational Area.—The National Park Service has acquired approximately 16,500 acres of rugged forest land¹² adjacent to 4,000 acres of water surface on the Grand Glaize Arm of the Lake. Nearly all the lands acquired were not only unsuited to cultivation but had been subjected to serious deterioration of soil and forest cover. These lands are now being protected from fire and marked improvement has been made in restoring the area to conditions of natural beauty. In many ways this area is one of the most scenic in the whole State. There are about ninety miles of

¹²The acquisition and development of these lands were made possible by funds and workers from Emergency Relief Administration and Civilian Conservation Corps.

rugged lakeshore line, yet there are frequent sites suitable for beaches and recreational development. The terrain lying back from the lakeshore is marked with bluffs, ravines, creeks, caves, and springs. Many species of native flora and fauna are found in this area and their protection is assured under Park Service policy.

This area has been developed according to the exacting standards prescribed by the National Park Service. Apart from the Park Administration Area there are two principal areas of development. These include (1) the General Use Area and (2) the Organized Group Camp Area.

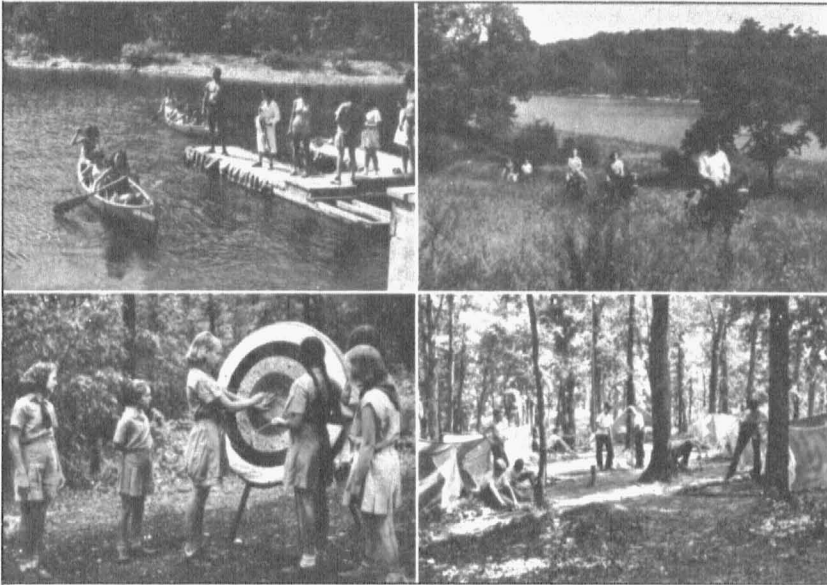


Fig. 9.—Recreational opportunities of many types are available to all in the Lake of the Ozarks public recreational area.

The General Use Area was planned for the use of the general public and includes facilities for picnicking, fishing, boating, hiking, and camping. These facilities are available to individuals and families who want to spend a day out of doors. Sites are also provided for those who wish to camp overnight or over a week end, as well as other groups who wish to camp out for longer periods of time.

In the Organized Group Camp Area several camps have been constructed for the use of groups that are unable or do not desire to finance the purchase of land and construction of their own facilities. These camps are available for use on a permit basis for a full season

or shorter periods to public, semi-public, and non-profit organizations. The fees charged for the use of these camps are based on the equipment used and the cost of maintenance.¹³

Waysides.—The State Highway Commission has acquired lands for three small waysides in the lake area. Two of these waysides are located off U. S. Highway 54 near Bagnell Dam and the other is off Missouri Highway 5 eight miles north of Camdenton. "State waysides are small areas situated along or near highways and designed to provide highway travelers with places where they may stop to rest, picnic . . . or enjoy a view. . . ." ¹⁴

Undeveloped Recreational Lands

Over four-fifths of the desirable recreational lands in the lake area are undeveloped after ten years dating from the formation of the Lake. Most of the recreational construction has taken place in discontinuous narrow fringes along the lake and near the main highways. Development on sites some distance from the main travel routes is sporadic and relatively unimportant.

Approximately 42,350 acres of land have been classed in this inventory as undeveloped recreational lands. Most of this land has some desirable water frontage and, while the suitability of this land for future recreational development is not necessarily implied, it is apparently being offered for sale as sites for future recreational use. Much of this land is practically inaccessible for recreational utilization at this time. Most of it probably never will be developed and utilized at all intensively for recreation. In fact, the 9,000 acres of land now classed as recreational is so underutilized in many places that much of the future recreational development will most certainly be made on it rather than on the lands classified under the heading of undeveloped recreational lands.

The bulk of the land so classified is owned by the Union Electric Land and Development Company. It was acquired when the Union

¹³An outline of the General Development Plan of Lake of the Ozarks Recreational Area is given below.

1. Park administration Area includes: Administration offices, contact station, warehouse, fire control headquarters, maintenance-machine shops, garages, superintendent-staff residences.
2. General Use Area—Picnic and Camping area includes: Ten miles of scenic park road from entrance on State Route "D" and U. S. Highway 54, Picnic area with tables and ovens, parking areas, bathhouse, bathing beaches, boathouse, 20 miles hiking and nature trails, horse trails, stable, picnic shelters, trail shelters, drinking fountains, concession and comfort stations, tent camp and trailer camp grounds, typical farm group restoration and museum, located on Grandglaze basin with 4,000 acres of water surface for recreation.
3. Organized Group Camp Area includes: Six group camps, permanent structures incorporating basic facilities now provided in Camp Pin Oak, Hawthorn and 6-C; trail lodges, pioneer camps, 20 miles nature trails, trail shelters, horse trails, and 20 miles truck trails.

National Park Service, *Lake of the Ozarks Recreational Demonstration Area*, Printed Leaflet, Kaiser, Missouri. 1940.

¹⁴Missouri State Planning Board, *A State Plan for Missouri*, Summary Park Plan, 1938, p. 8.

Electric Company purchased lands for the reservoir site. Most valley farms had holdings of rough forest lands in addition to the crop lands in the river valleys, and the power company usually bought the entire farm where the crop lands were to be inundated. In some cases, however, the owners of the farm retained the rough forest lands and went into the recreational business or retained such lands for speculative purposes.

Many acres of the undeveloped recreational lands have been divided up into tracts of land with some desirable water frontage and a large hinterland of rough lands. The policy carried out in disposing of these lands is one which encourages the ownership of larger land holdings. That is, in some, if not most, cases it is difficult to purchase a small tract of desirable riparian land without also taking a number of acres of adjoining rough lands. Much of the undeveloped recreational land is of considerable importance to the recreational environment. Exploitation or unregulated development of these lands would most certainly bring about a lesser interest in the Lake as a recreational area.

Other undeveloped recreational lands are owned by a number of individuals, but their combined land holdings are relatively unimportant as compared with the holdings of the Union Electric Land and Development Company. These other land holdings include scattered tracts of riparian property and small tracts of highway frontage.

Non-Recreational Lands

There are approximately 117,000 acres of non-recreational lands included in the boundaries of the lake area (Figure 5). These lands have necessarily been considered in this study, despite the fact that their recreational value is almost negligible, because they are contiguous to and surround the Lake and recreational lands. About 69,000 acres of non-recreational lands have been classified as rough forest lands. Although most of the more valuable farm lands were inundated by the Lake, there are still approximately 48,000 acres of land in farms within the boundaries of the area chosen for study.

Rough Forest Lands or Wild Lands in Absentee Ownership.—

Of the 181,500 acres immediately surrounding the Lake of the Ozarks (see Figure 5), more than 134,000 acres are predominantly forest lands. Over 50,000 acres of forest land lying near the Lake have already been classified as recreational and undeveloped recreational lands. Some 68,500 additional acres of the more inaccessible and rougher lands lying back from the Lake have been classified as rough forest lands or wild lands. Few owners of such lands reside

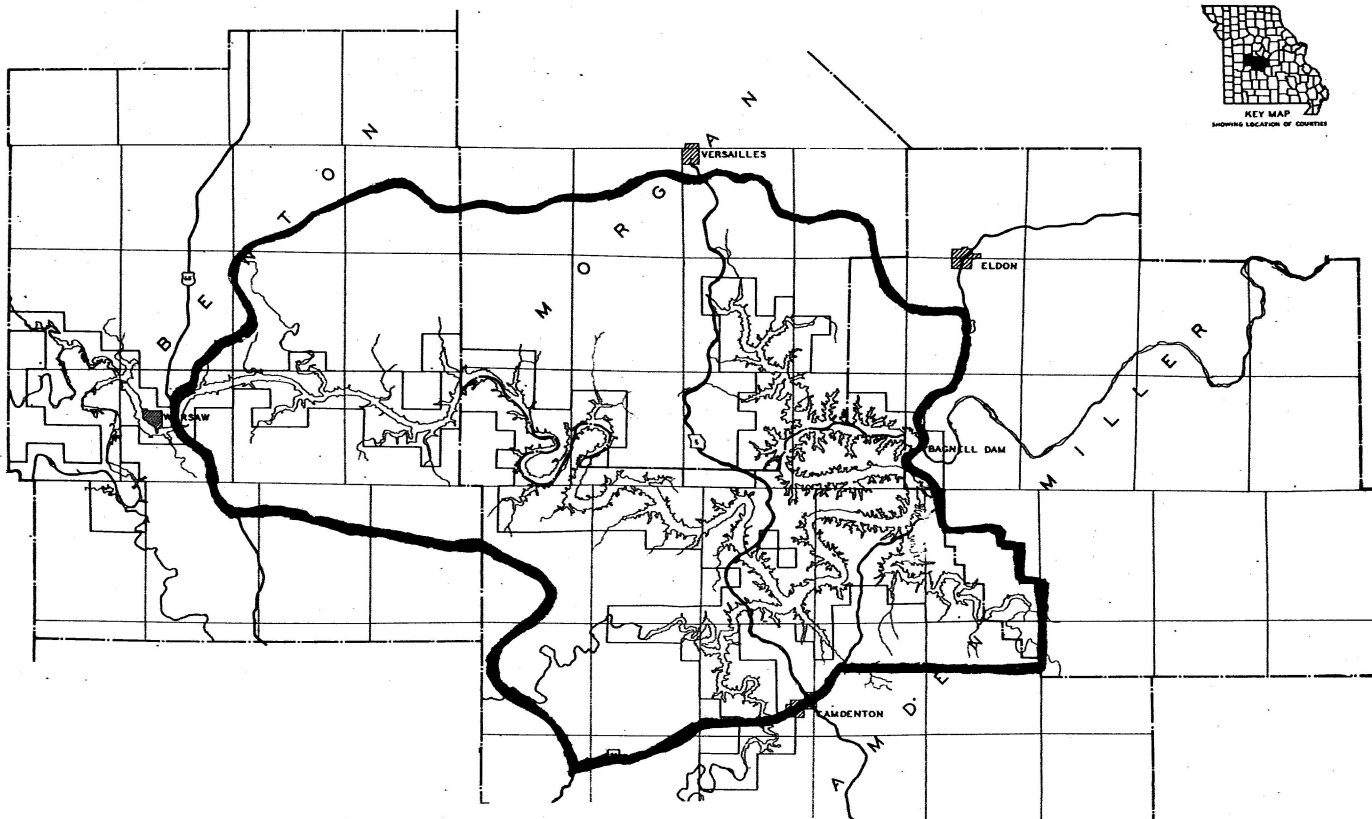


Fig. 10.—Suggested area of public ownership for forest lands in the vicinity of the Lake of the Ozarks.

near them. Most of this land has been cut over two or three times and many subsequent fires have brought about a marked deterioration in the quality of the present forest stand. Tax delinquency runs high on these lands and many acres would undoubtedly revert to the State if a tax reversion law were in existence.

Although most of these rough forest lands are only of modest value from a forest production standpoint, they should apparently be kept in forest under some type of ownership and management that would enhance the recreational desirability of the lake area as a whole. Outside of the boundaries considered in this study there are thousands of acres of this rough forest land that could be effectively combined with the forest lands of the lake area into a National or State Forest (Figure 13). Proposals have already been made for the acquisition of much of this land for a public forest to be known as the Lake of the Ozarks National (or State) Forest.¹⁵ Once under proper protection from fire and exploitation, these forest lands could become more important from a recreational standpoint largely because of the potential hunting they could provide.

Farm Lands.—Most of the better farms in the immediate vicinity of the Osage River in Camden and Morgan Counties, the western parts of Miller County, and the east and central part of Benton County were inundated by the formation of the Lake. However, this inventory showed that approximately 47,600 acres of land are still used for farming in the lake area as defined for purposes of this study.

Most of the better farms are found in the west central and western part of Benton County where the Lake has not covered appreciable acreages of the valley lands. Other farms in the lake area are largely confined to tributary stream valleys of the main Osage River valley that have escaped inundation and to the higher terrace lands lying above water level in the main valley. There are a number of other farms in the hill country with limited crop lands that carry on a type of farming that apparently provides little more than a mere subsistence. These farms could perhaps be purchased along with the rough forest lands for the formation of a public forest area.¹⁶

Other Non-Recreational Land Uses.—In order to make a classification for all taxable lands in the lake area, it was necessary to include a number of different non-recreational businesses, and other land uses that are apart from and independent of the recreational industry and its influences. These miscellaneous non-recreational land uses found inside the boundaries of the lake area include: saw mills, mines, residence sites, and non-recreational businesses.

¹⁵Missouri State Planning Board, *Op. Cit.*, p. 17-18.

Submerged Lands of the Power Reservoir (The Lake of the Ozarks) and Bagnell Dam.—Approximately 50,000 acres of land are submerged by the waters of the Lake of the Ozarks in Benton, Camden, Morgan, and Miller counties.

THE UTILIZATION OF THE LAKE AREA FOR RECREATIONAL PURPOSES

The discussion turns now from the description of the natural environment and the types of recreational facilities found in this area to the actual utilization of the area for recreation. For an understanding of the recreational utilization of this area, it was advisable to make a classification of the recreationists. The classification used here is based mainly on recreational characteristics and recognizes three groups: vacationists, summer residents, and transient visitors.

Data are presented to show where these visitors come from and the changing volume of recreational traffic during the various seasons. The study of utilization is concluded with an examination of the trends in utilization of the lake area since the formation of the Lake in 1931.

Classification of Recreationists

The Vacationist.—The vacationist group is the most desirable type of recreationist visiting the lake area from the resort owner's standpoint. The vacationists spend more for accommodations and services and remain in the area for a week or more as compared to the average stay of three days for all groups. Resort owners also find that this group may be expected to return year after year if the accommodations and services offered are satisfactory. Furthermore, a satisfied vacationist often goes back home and sends his friends to the resort that made his vacation an enjoyable one.

Although the members of the vacationist group are apparently more liberal spenders and remain in the area for longer periods of time, their importance is lessened by their comparatively small number. Less than 10 per cent of the resort owners interviewed reported considerable volumes of vacation business though this type of patronage constituted from 50 to 60 per cent of the gross business of the summer resorts. In the resort area as a whole probably less than 20 per cent of all business could be considered as vacation trade.

The vacationist is a discriminating consumer of recreational services and demands a wide variety of accommodations. One such vacation group comes to the lake primarily to fish. This group places much emphasis on fishing and the length of its stay and probability of its

¹⁰For a discussion on the desirability of purchasing such farms see J. Alfred Hall, *Bright Young Men*, Land Policy Review, November, 1940, p. 17.

return is largely dependent on fishing conditions. Others come here to vacation in quiet, restful surroundings and demand few recreational diversions. Still other vacationist groups, which consist of younger people, prefer a program of active recreational and social activities. Although a single resort may successfully serve all these types of vacationists, such a task is one that requires a well-planned resort under skilful management policy.

The summer resorts in the lake area are well-equipped to accommodate the vacationist but must compete with the resorts in the Rocky Mountains, the Lake States, and New England which have the advantage of a cool summer climate. However, it is possible to make improvements that would undoubtedly improve the ability of the lake area to serve certain vacation groups. Public golf courses, tennis courts, riding trails, beaches, and community centers are perhaps the most urgently needed additions to improve the recreational and social life of this resort area. The sponsoring of sporting events of state-wide interest might prove a feasible means of advertising the recreational opportunities available.

Summer Residents.—This class of recreationists includes the owners and renters of lakeshore property who spend the greater part of the vacation season in the lake area. The majority of the summer residents are family groups who are desirous of getting away from the cities during the summer months. In some cases, the head of the family works in the city and joins his family at the Lake over the week end. Other summer residents who have retired from active business have built comfortable summer residences on the lake shore where they spend the greater share of the warm season. A number of summer residents come here to operate recreational businesses during the tourist season.

During much of the vacation season the average resident population of the resort area is about double that of the winter period. This increased population is an important source of income for the small recreational businesses in the lake area. In a number of cases the owners of summer residences entertain frequently and their orders for food and other household supplies are considerable. The summer resident also spends a considerable amount on maintenance and the operation of his boats, houses, and grounds. In addition to the usual expenditures of summer visitors, this group also pays taxes on its property and thereby contributes to the upkeep of schools and local governments of the area.

The Transient Visitor.—Since the Lake of the Ozarks is within easy driving distance of several million people, it is visited frequently

by many people for short periods of time—especially week ends. This group seldom spends over two days in the resort area and a stay of only one day or less is most common. Although the majority of the transient visitors come to fish, there are others who are interested in picnicking, hiking, boating, and swimming.

However, while the stay of transient visitors is short their number is large and it is this fact that explains why there are many week ends and holidays when these resorts hang out the "no vacancy" sign. Furthermore, the visitors are week-end travellers in larger part than other patrons of the resort area. This fact may be confirmed by the data on traffic flow in the areas illustrated in Figure 14. When a holiday and a week-end occur in sequence travel is particularly heavy. This fact explains why the Labor Day week-end is normally the period of heaviest travel during the vacation season.

Although the transient visitor seldom remains in the lake area for over two days, most resort owners report that the bulk of their gross business is of this type. In fact, the week-end business is about the only business a number of resorts receive during the vacation season and such business is vital to their continued operation.

Among the visitors are a considerable number of out-of-state tourists. Although the Lake is not on the main transcontinental highways it is of sufficient scenic interest to attract visitors from the heavily traveled transcontinental routes such as U. S. 66 and U. S. 40. Many of these visitors pass through the area during the week and represent an important element in the total volume of week day business. Many evidences of their visits are encountered on the guest books of Bagnell Dam and other points of scenic interest.

Origin and Seasonal Volumes of Recreational Travel

This section of the study presents data showing where visitors to the lake area come from and the seasons in which they come. The data on which these determinations are based were secured from the following sources: (1) National Park Service in the Regional Recreational Area on the Grand Glaize Arm of the Lake, (2) resort registers, (3) public tourist registers, (4) State Highway Department traffic flow records, (5) county clerk records of sale of non-resident fishing permits, and (6) personal interviews with owners of recreational businesses in this area.

Use of the Area by Missourians.—Figures obtained on the origin of all recreational travel in the lake area showed that approximately 80 per cent of those visiting the lake area live in Missouri. From a manual count of all visitors stopping at the Lake of the Ozarks Recreational area from March 1 to September 30, 1940, it was deter-

mined that out of the 29,876 visitors 24,947 were from Missouri and 4,929 from other states. In 1917, the United States Forest Service estimated that approximately one-fifth of all cars in the neighborhood of the Lake came from other states. Interviews with resort owners and samples taken from public tourist registers corroborate these percentages.

The proximity of certain resort areas on the Lake to densely populated areas apparently is the important factor in determining points of origin of the traffic. The bulk of resorts (located near U. S. Highway 54 in Camden and Miller counties) reported that approximately two-thirds of their in-state business originates in St. Louis. The resorts off Missouri Highway 5 in Camden and Morgan Counties and the resorts in Benton County receive the bulk of their in-state business from the Kansas City area. These two major cities contribute a major proportion of the recreational traffic but examination of tourist registers showed that a relatively important volume of business had its origin in such cities as Jefferson City, Springfield, St. Joseph, Joplin, Columbia, Sedalia, Hannibal, Moberly, and Boonville.

Use of the Area by Out-of-State Recreationists.—Illinois contributes the largest percentage of out-of-state tourist¹⁷ travel in Missouri as a whole. Percentages from Kansas, Oklahoma, Texas, and Iowa are also relatively large. All states contribute to the traffic and there is even a small amount from Canada (Table 3). Although these data are for tourist travel in all Missouri, the origin of traffic in the lake area appears to have been quite similar as indicated by data on the sale of fishing permits.

Most of the out-of-state vacationists stopping at the Lake for over a day purchase a non-resident trip fishing permit. The records kept by the county clerks on the sale of these permits provide data for determining where many of the nonresident vacationists come from. Residents of Kansas, Illinois, Iowa, and Nebraska purchased about 92.7 per cent of the non-resident fishing permits sold in four counties bordering the lake (Table 4). The importance of the lake as a fishing center for out-of-state visitors is shown by the fact that 40 per cent of all non-resident fishing permits sold in Missouri during the last five years have been sold in the lake area.

Vacationists from Illinois are apparently more numerous in the lake area while Kansans purchase more non-resident fishing permits. Manual counts of visitors stopping at the Lake of the Ozarks Recreational Area show that 39 per cent of out-of-state visitors are from Illinois and 15 per cent from Kansas (Table 5). These data indicate

¹⁷The term "tourist" as used here is not limited to those traveling for recreation, and includes those making business trips.

TABLE 3
PERCENTAGE OF FOREIGN TRAFFIC IN MISSOURI BY STATES*

State	Percent	State	Percent
Illinois	23.31	District of Columbia	0.57
Kansas	13.22	South Dakota	0.44
Oklahoma	9.02	Washington	0.38
Texas	9.02	West Virginia	0.38
Iowa	6.51	Alabama	0.32
California	4.31	Georgia	0.32
Michigan	3.66	North Carolina	0.32
Indiana	3.48	Virginia	0.25
Ohio	3.48		
Arkansas	2.85	Connecticut	0.19
Nebraska	2.34	Utah	0.19
New York	2.21	Wyoming	0.19
		Canada	0.19
Tennessee	1.52	Idaho	0.13
Colorado	1.45	Maine	0.13
Pennsylvania	1.39		
Kentucky	1.14	Maryland	0.13
Louisiana	1.01	New Hampshire	0.13
		Oregon	0.13
New Jersey	0.89	South Carolina	0.06
Massachusetts	0.76	Delaware	0.02
Mississippi	0.70	Montana	0.02
Wisconsin	0.70	Nevada	0.02
Arizona	0.63	North Dakota	0.02
Florida	0.63	Rhode Island	0.02
New Mexico	0.63	Vermont	0.02
Minnesota	0.57	Total	100.00

* Missouri Traffic Survey, 1934, page 161.

TABLE 4
NON-RESIDENT FISHING PERMITS ISSUED IN THE LAKE OF THE OZARK REGION,
1937 THROUGH 1939

State	Number	Percent	State	Number	Percent
Kansas	9,574	40.04	Minnesota	12	.05
Illinois	7,566	31.64	Wyoming	12	.05
Oklahoma	2,281	9.54	Louisiana	11	.045
Iowa	1,194	8.01	Virginia	10	.04
Nebraska	785	3.28	Florida	7	.03
Indiana	513	2.15	District of Columbia	7	.03
Texas	278	1.16	Mississippi	7	.03
Ohio	209	.87	Oregon	6	.03
Arkansas	161	.67	North Carolina	6	.03
California	131	.55	Montana	6	.03
Colorado	63	.26	Georgia	5	.02
Kentucky	58	.24	Maryland	4	.02
Michigan	57	.24	Utah	4	.02
New York	38	.16	Washington	4	.02
Tennessee	27	.11	Alabama	3	.01
New Mexico	26	.11	Idaho	2	.01
Pennsylvania	24	.10	Delaware	1	.005
South Dakota	21	.09	Nevada	1	.005
Wisconsin	17	.07	Connecticut	1	.005
Massachusetts	15	.06	New Hampshire	1	.005
Arizona	14	.06	Maine	1	.005
West Virginia	13	.05			
New Jersey	13	.05	Total	23,909	100.000

that the bulk of the Illinois visitors stop in the more intensively developed resort areas of Camden and Miller Counties where a greater share of all resort accommodations are located. Furthermore, the majority of resorts visited in the whole lake area reported that

TABLE 5
OUT-OF-STATE AUTOMOBILES ENUMERATED IN THE LAKE
OF THE OZARKS RECREATIONAL AREA FOR THE PERIOD OF
MARCH 1 TO SEPTEMBER 30, 1940* **

State	Number	Percent
Illinois	344	39.18
Kansas	139	15.83
Iowa	118	13.44
Oklahoma	89	10.14
Nebraska	30	3.41
Texas	29	3.30
Ohio	26	2.96
Louisiana	16	1.82
Colorado	14	1.59
Michigan	12	1.37
Pennsylvania	10	1.14
Maryland	10	1.14
Indiana	9	1.03
Arkansas	5	.57
New York	5	.57
District of Columbia	4	.46
Connecticut	4	.46
South Carolina	3	.34
Mississippi	3	.34
California	2	.23
New Jersey	2	.23
Georgia	2	.23
Kentucky	1	.11
West Virginia	1	.11
Totals	878	100.00

* For the Period March 1 to September 30, 1940 a total of 4,736 automobiles visited the area and carried 29,876 passengers. The total number of passengers included 24,947 instate and 4,929 out-of-state passengers.

** Above figures furnished by National Park Service, Lake of the Ozarks Recreational Demonstration Area, Mo-6, Kaiser, Missouri

their most important volume of out-of-state business comes from Illinois. The majority of the Kansans come from Kansas City, Kansas, and stop at the resorts in Benton and Morgan counties. This important area of origin in Kansas is comparatively close to the Lake and an important volume of this out-of-state business comes on week ends. On the other hand, visitors from Illinois come from greater distances and usually remain for longer periods of time.

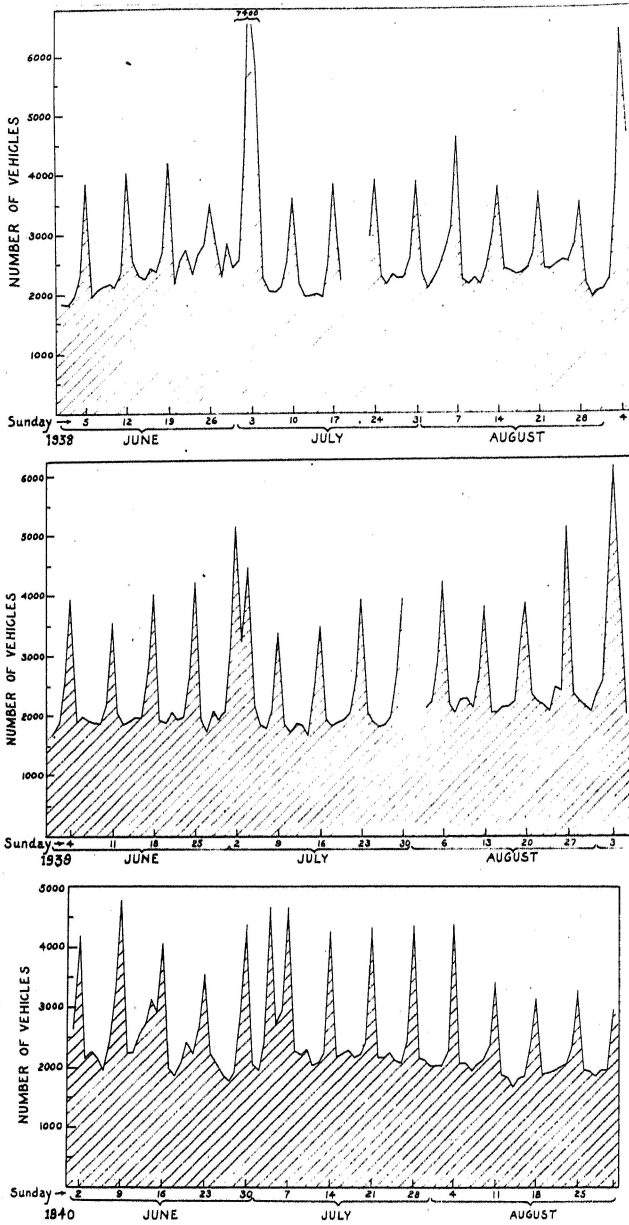


Fig. 11.—Total flow of traffic on U. S. Highway 54 near Bagnell Dam, summer months 1938-1940. (From State Highway Department's automatic traffic recorder records).

Many resort owners believe that an increased volume of out-of-state business could be brought into the lake area by state advertising. In fact, there are a number of proposals under consideration at this time to undertake such a program. If such a program is undertaken it should be understood that States such as Illinois, Iowa, Oklahoma, Texas, Kansas, and Nebraska are the states most likely to send vacationists to Missouri and the lake area. The volume of recreational travel coming from any one of these states is largely dependent on two sets of factors—one of which sends vacationists out from a state and the other which attracts them to a vacation center. The set of factors such as population densities spendable per capita income and automobile registrations determines the number of vacationists any one state may send out of its borders for recreational purposes. The other set of factors largely determines how many vacationists the resort area can attract. These latter factors are the location and accessibility of the area to recreational travel suitability of the natural environment for recreational use, and the type and quality of available recreational facilities.¹⁸

Seasonal Volumes of Recreational Travel.—Travel in the lake area is subject to wide seasonal fluctuations. In order to make some determinations of the volumes of recreational traffic during different seasons the records of tolls paid on Hurrican Deck Bridge on Missouri Highway Number 5 and the records of the automatic traffic recorder just north of Bagnell Dam were consulted. These records show only total movements of all traffic but the relative importance of recreational travel in the spring, summer and autumn may be determined by comparing the volume of travel during those seasons with that of the winter when the bulk of the travel is of local or business origin.

The data of Figure 12 indicates that the greatest volume of traffic flow occurs during the period from April to November. May, June, July, August, and September are the months of maximum travel with the peak for these months most often in July or August. The volume increases more slowly in April and May than it decreases during September and October which would indicate that the travel in autumn is greater than the travel in the spring. The data in this figure were arranged in such fashion as to illustrate again the great importance of the week-end travel.

Seasonal variation in number of in-state and out-of-state visitors are given in Table 6. The only important volume of out-of-state travel comes in July and August. The in-state visitor total is highest

¹⁸For a further discussion of this matter see Bureau of Public Roads, *Tourist Travel in the United States*, Vol. 18, No. 6, August 1937, p. 106.

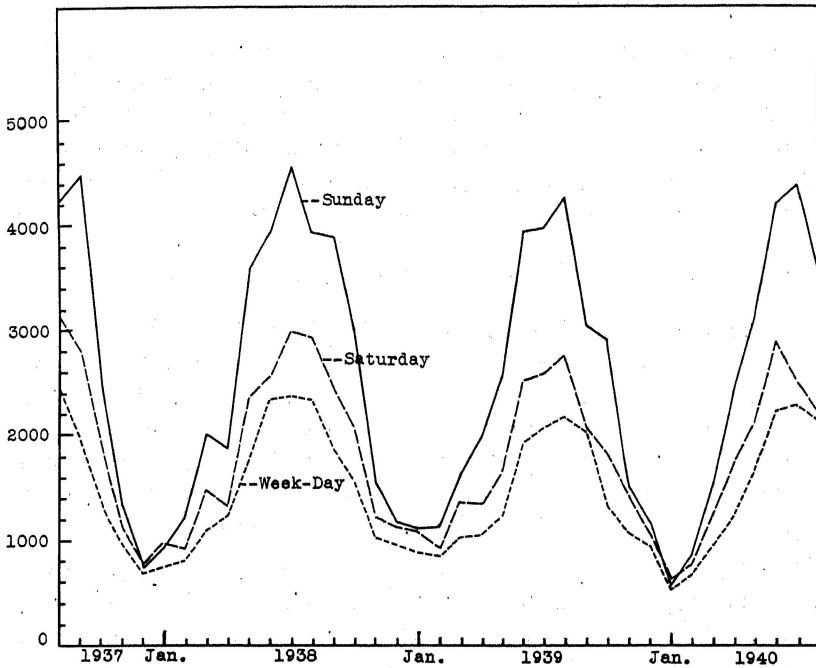


Fig. 12.—Average volumes of traffic on U. S. Highway 54 near Bagnell Dam on an average week-day, Saturday, and Sunday of each month, August 1937 through August 1940. (From State Highway Department's automatic traffic recorder annual records).

during June, July, and August and comparatively high during May and September.

TABLE 6
NUMBER OF INSTATE AND OUT-OF-STATE VISITORS, LAKE OF THE
OZARK RECREATIONAL AREA, * 1936-1940

Month	Instate	Out-of-State
April	587	13
May	2,122	181
June	2,692	362
July	7,007	1,657
August	8,919	2,258
September	3,190	471
Total	24,517	4,942

*During Jan., Feb., and March 1940, 430 in-state and out-of-state visitors were counted. For the period March 1 to Sept. 30, 1940, 4,794 cars visited the area--3,858 from Mo. and 936 from 25 other states.

Resort owners report that recreational travel usually begins early in spring when the weather is favorable and continues until late in fall. In the past, the opening of the fishing season on Memorial Day brought the first large influx but since 1940, the fishing season has

opened several months earlier, a fact which has probably improved the business of the spring season.

There is not complete accord among resort owners as to when their business is best, but in general they are in agreement that June, July, and August bring more week day travel which makes for better business conditions than the more strictly week-end travel of autumn and spring. The operator of one of the more successful resorts reported that the business of June, July, and August runs approximately 100 per cent of capacity, April—7 per cent, May—25 per cent, and September and October—30 and 20 per cent respectively.

Trends in the Recreational Utilization of the Area

Although much has already been said about the general trends in the utilization of the lake area for recreational purposes, the importance of the subject justifies further comment. The data presented below indicate: (1) the trends in the transfer of land for recreational purposes; (2) the trends in the establishment of recreational businesses; and (3) the trends in the volume of recreational travel.

Trends in Primary Transfers of Land for Recreational Purposes.—Virtually all the land now in recreational use in the lake area was purchased after the formation of the Lake. This land was sold either as lots in platted subdivisions or as acreage tracts. The transfers of such land have been determined by examining the land transfer records in the courthouses of Miller, Morgan, Camden, and Benton counties.

Fifty-nine subdivisions have been platted into 9,132 lots in the lake area since 1929. Approximately 1,934 lots have been transferred during this period as shown by the 1939 tax books. That is, 21.17 per cent of the lots platted have been transferred at least once. In order to determine the trend of transfers in subdivisions, ten of the larger of these, all platted by 1931, were selected for study. These subdivisions contained, in 1939, 57 per cent of all lots platted and the 571 transfers recorded comprise the bulk of all transfers made in all subdivisions. In these 10 subdivisions the great bulk of the lot transfers occurred in the three years 1931-1933 with a pronounced peak in 1932 (Figure 3). Subsequently the traffic in these lots fell off severely so that by 1939 only three transfers were recorded for all these 10 subdivisions.

These lot transfers present only a part of the picture however, and the transfer of acreage tracts reached a peak at a much later date or in 1936 (Figure 16). By 1939, however, there was little further transferring of these acreage tracts taking place so that,

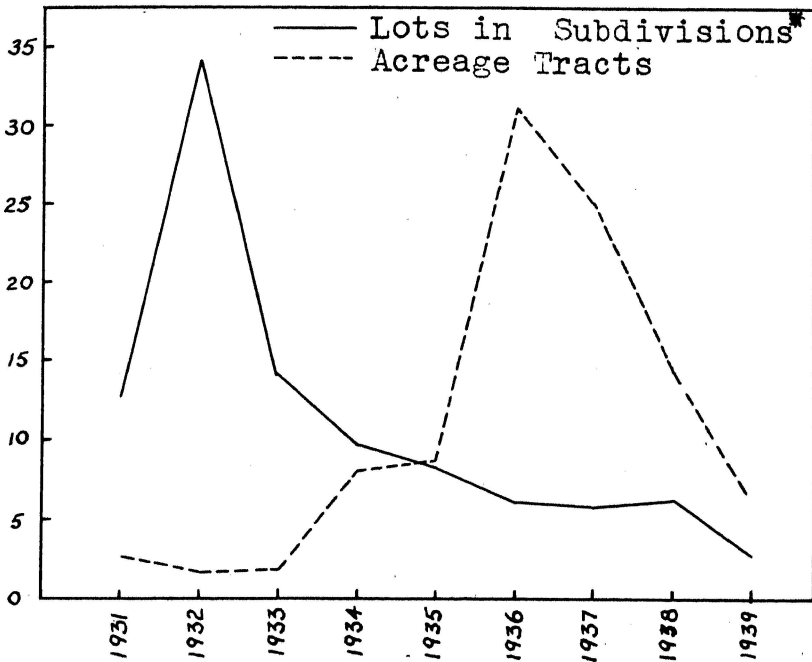


Fig. 13.—Trends in the transfers of recreational lands.
*Includes only those subdivisions which had been platted in 1931 or earlier.

temporarily at least, the interest of purchasers of recreational property in the lake area is at a lull.

Trends in the Establishment of Recreational Businesses.—Table 7 shows the dates of establishment of 183 commercial recreational developments as compiled from a questionnaire submitted to resort owners. The boom period in recreational investment came shortly after the formation of the Lake, the peak of the development

TABLE 7
DATES OF ESTABLISHMENT OF COMMERCIAL
RECREATION DEVELOPMENTS IN THE LAKE OF THE OZARKS AREA

Years	Number	Years	Number
1929	1	1935	19
1930	4	1936	13
1931	16	1937	19
1932	40	1938	16
1933	18	1939	8
1934	24	1940	5

occurring in 1932 or in the same year in which the bulk of the transfers of lots in platted subdivisions took place. The establishment of additional recreational developments continued at a modest rate up until 1939 when a sharp decline set in which continued through 1940. Although the establishment of additional recreational facilities in this area has practically ceased in recent years there has been considerable investment in the improvement of existing developments.

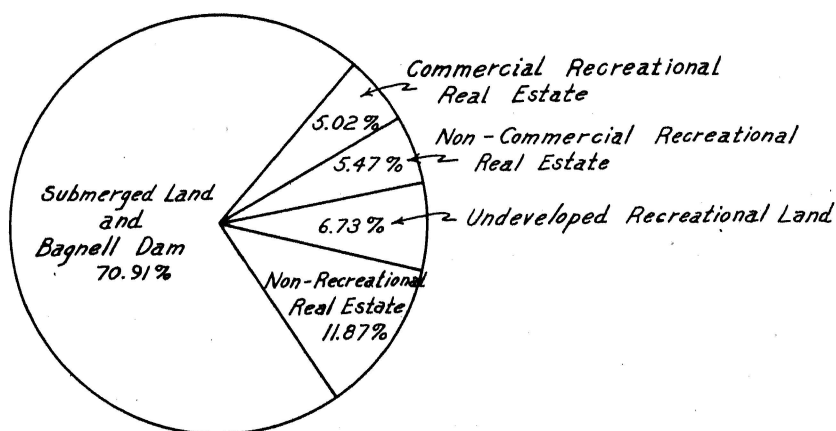
Trends in the Volumes of Recreational Travel.—It is difficult to determine trends for this type of travel because of the lack of data and the character of the available data. The data available to indicate recreational travel volumes before 1935 are both limited and inconclusive. However, this was the period when the Lake was formed and when many came for the first time to see the dam and Lake. Others came again and again to fish. As is well known, most of the resort developments during this early period were concentrated along the important highways or near the dam. Informal reports confirm also the fact that established resort facilities were overcrowded during these early years and the construction of new facilities stimulated to meet the rising demand.

The records of the sale of fishing permits in the Lake area since 1935 indicate an increasing use of the lake area by fishermen up until 1938 when a decline was begun that continued through 1939. These records have some pertinence as indicators of the volume of recreational travel during these years if as is presumed, the number of visitors purchasing permits was a reasonably constant proportion of the total of all visitors.

SOME ECONOMIC ASPECTS OF LAND USE AND RECREATION IN THE LAKE AREA

The construction of Bagnell Dam and the formation of the Lake was followed by a number of important shifts in land use. All the better farms in the area were located in the valleys of the Osage River and its tributaries, while the bordering rough lands were used mainly for grazing and for wood lots by the valley farmers. The filling of the Lake inundated these valley crop lands for approximately one hundred miles above the dam. At present, therefore farming is restricted to the limited sites in the surrounding uplands that can be used for agriculture. A modest acreage of the rough bordering lands are, of course, used for recreational purposes but the vast share of them lies virtually idle. While all the rough land has at least some recreational value, only a small portion will in the visible future be used intensively for this purpose so that most of it could and surely should be devoted to some type of forestry.

Changes in Tax Base.—Assessed valuations of all real estate inside the boundaries of the lake area as of 1928, before the formation of the Lake, were compared with those of 1939 to determine the changes in the tax base subsequent to the building of the dam and the formation of the Lake. The area selected for study, as shown in Figure 5, includes a number of survey sections of land which contain the Lake, the riparian lands, and a considerable acreage of rough land. All real estate valuations listed on the tax rolls in the area selected for study were tabulated from the 1928 and 1939 tax books with the listed acreage, assessed valuation, and taxes levied on each taxable entry. Since most of the 1928 real estate consisted of valley farms and their adjoining rough lands, no classification was made for the



Classification	Assessed Valuations	Per Cent of Total Valuation
Commercial Recreational Real Estate	\$ 455,425	5.02%
Non-Commercial Recreational Real Estate	496,430	5.47%
Undeveloped Recreational Land	610,430	6.73%
Non-Recreational Real Estate	1,077,035	11.87%
Submerged Land and Bagnell Dam	6,433,745	70.91%
Totals	\$9,073,065	100.00

Fig. 14.—Assessed valuation of all real estate in the Lake of the Ozarks area, 1939.*

*For delimitation of area analyzed see Fig. 3.

separate taxable entries on the 1928 book. However, the 1939 real estate entries have been classified in order to show the relative importance of the new types of land use.

TABLE 8
ASSESSSED VALUATION AND TAXES LEVIED ON REAL ESTATE IN THE LAKE AREA¹
1928 AND 1939²

Counties Affected By Lake	Approximate Acreage of Area in County	Assessed Valuations		Taxes Levied	
		1928	1939	1928	1939
Miller ³	17,077	\$ 207,455	\$ 3,708,075	\$ 2,933	\$ 57,760
Camden	121,457	1,332,150	3,054,350	21,480	47,583
Benton	58,150	989,820	1,357,330	12,665	14,058
Morgan	41,287	432,960	953,310	7,280	14,058
Total Area	237,971 ⁴	2,962,385	9,073,065	44,358	133,957

1. For map of area see Figure 5.
2. Data taken from 1928 and 1939 tax books. Assessments are for 1927 and 1938 while taxes are for 1928 and 1939.
3. Bagnell Dam is located and assessed as real estate in Miller County.
4. There are 16,500 acres of land in Camden and Miller Counties included in the National Park Service's Lake of the Ozarks Recreational Area that have been removed from the tax rolls since 1934

In the lake area as a whole assessed valuation of real estate increased 206 per cent during the period 1928-1939. Table 8 shows how this increase has been distributed among four counties. Miller County in which Bagnell Dam is located had an increase of 1,687 per cent in assessed valuation, despite the fact that 8,055 acres of the 17,077 listed on the tax rolls in the area of study in 1928 have been taken from the tax rolls since 1934 when the National Park Service started acquiring land for the Lake of the Ozarks Public-Recreational Area. For Camden County, with the largest number of acres of land affected by the reservoir the increase in real estate assessment amounted to 129 per cent. Camden County also lost over 8,000 acres of taxable lands after 1934 because of the purchases of the National Park Service. In Morgan County the increase in assessed valuation of real estate in the lake area amounted to 120 per cent. In Benton County, where the lake is smaller and comparatively fewer acres of submerged lands are included, the increase in real estate valuation amounted to only 37 per cent.

This increase in assessed valuations in the lake area is particularly significant in light of the fact that the property tax base in the State as a whole has declined¹⁹ during the same period. In fact this general decline was more than sufficient to offset the increases in the lake area in the two counties of Morgan and Benton and it was only in Camden and Miller counties that assessed valuations for the entire county rose during the period.

Importance of the Dam and Submerged Lands in the Tax Base.

—The increase in the assessed valuation of the real estate in the lake area is largely due to the valuation placed on Bagnell Dam and the submerged lands after 1931. Table 9 compares the valuations of real estate assessed to the Union Electric Company with that assessed to all other real estate owners in the lake area. The dam is assessed in Miller County and submerged lands in all counties. It should be noted that the submerged lands comprise approximately a third of the total number of acres in the lake area, but these lands bear over half of the taxes levied on all lands in this area.

TABLE 9
THE IMPORTANCE OF BAGNELL DAM AND POWER RESERVOIR IN THE TAX BASE
OF THE LAKE AREA¹, 1939

	Acres		Valuation		Tax Levied	
	Power Company	All Others ²	Power Company	All Others	Power Company	All Others
Miller ³	2,923	7,262	\$ 3,533,270	\$ 174,805	\$ 55,113	\$ 2,647
Camden	32,265	84,032	1,713,100	1,341,250	26,385	21,198
Morgan	9,872	30,869	550,460	402,850	7,958	6,100
Benton	12,525	45,716	693,720	663,610	7,391	7,165
Total	57,585	167,879	6,490,550	2,582,515	96,847	37,110

1. Area as delimited in Figure 5.
2. Includes all other owners of real estate in this area.
3. Bagnell Dam is located and taxed in Miller County.

Bagnell Dam and the submerged lands comprise 70.9 per cent of the real estate tax base in the lake area (Figure 17). The dam alone accounts for approximately one-half of the total.

¹⁹The assessed valuation of all property declined, according to reports of the State Board of Equalization, from \$4,933,074,349 in 1928 to \$3,793,597,137 in 1939. The decline in real property valuations during the same period was from \$3,553,034,203 to \$2,803,411,262.

An examination of the increase in assessed valuations of real estate by survey sections, disclosed that the most significant increases in real estate assessments have occurred where the Lake has inundated the greatest number of acres of valley land. Increases in real estate assessments have been most significant in Camden and Morgan counties, and these increased assessments have more than made up for the loss of taxes formerly levied on valley farmers. Furthermore, the taxable personal property owned by all resort owners undoubtedly exceeds the taxable personal property lost to the counties when farmers were forced out of this area by the inundation of valley farms.

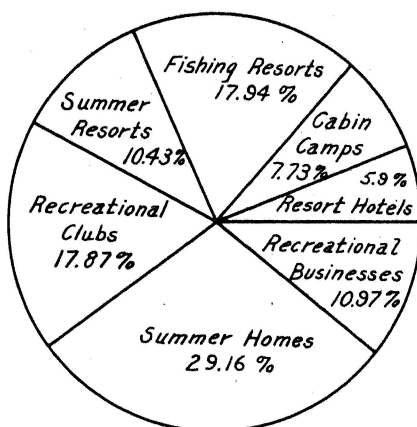
In Benton County the increase in assessed valuation of real estate is less apparent. The reservoir becomes smaller in the upper reaches of the area and the influence correspondingly less. In a number of sections in Benton County assessed valuation has decreased since 1928. However, the sections containing large acreages of submerged lands have shown the typical increases.

As one goes back from the Lake the increase in assessed valuations is of lesser moment. Indeed further study of assessed valuation of real estate outside the limited area selected for study showed that with few exceptions the assessed values of rough lands have declined since 1928.²⁰

Valuation of Recreational Property.—Some recreational improvements have been constructed outside the lake area (as delimited in this study) along the highways in the economic benefit area of the Lake. Including these recreational improvements the assessed valuation of all recreational real estate appearing on the 1939 tax books was \$1,055,695. The taxes levied on this real estate in this same year amounted to \$16,633.53. The percentage distribution of these valuations among the different classes of recreational real estate is given in Figure 15.

Table 10 indicates the relative importance of recreation as a land use in the four counties in which the Lake lies. Camden County with the greatest number of acres of lake surface is also the most important recreational county. In 1931, approximately 5,678 acres of land were in recreational ownership in this county, and the assessed valuation of this land and its recreational improvements accounted for 60 per cent of the assessed value of all recreational real estate in the lake area and vicinity. The bulk of the recreational development in Camden County is located near U. S. Highway 54 from Osage Beach to the Niangua Bridge.

²⁰Tabulations of widely scattered sections outside the lake area revealed that the decrease in assessed valuations averaged \$1,955 for 37 sections tabulated. The decrease in taxes levied amounted to \$57.31 per section.



Type	Assessed Valuation	Per Cent of Total Valuation
Summer Resorts	\$ 110,120	10.43%
Fishing Resorts	189,395	17.94
Cabin Camps	81,620	7.73
Resort Hotels	62,280	5.90
Recreational Businesses	115,850	10.97
Summer Homes	307,810	29.16
Recreational Clubs	188,620	17.87
Totals	\$1,055,695	100.00

Fig. 15.—Assessed valuations of recreational real estate in the Lake of the Ozarks area, 1939.*
 *The above figures include all recreational real estate in the delimited area of study and other recreational real estate in the economic benefit of the Lake region.

TABLE 10
 ACRES, ASSESSED VALUATION, AND TAXES LEVIED ON RECREATIONAL
 REAL ESTATE IN THE COUNTIES OF THE LAKE AREA*

Counties	Acres	Assessed Valuation	Taxes Levied
Camden	5,678	\$ 628,030	\$ 10,336.12
Morgan	1,663	181,530	2,964.57
Miller	455	127,705	1,983.37
Benton	3,062	118,430	1,349.47
Total	10,858	1,055,695	16,633.53

* Data from 1939 tax books of four counties.

In Morgan County the bulk of the 1,633 acres of land in recreational use are those on the west shore of the Gravois Arm of the Lake. About 17 per cent of the assessed valuation of all recreational real estate around the Lake is found in Morgan County.

Most of 455 acres of recreational lands in use in Miller County are those near Bagnell Dam and those paralleling U. S. Highway 54. The value of all recreational real estate in this county amounts to 12 per cent of the total value placed on recreational real estate around the Lake.

In Benton County the majority of the recreation lands in use are those in large tracts and platted subdivisions between the Camden county line and Warsaw. Although 3,061 acres are in recreational ownership the total assessed valuation of all recreational real estate is only 11 per cent of the total for the entire lake region.

Recreational Investment in the Lake Area.—One of the most important aspects of the development of the Lake Area was the fact that investment in recreational developments gave much employment during years of severe depression. Data on the amount of such investment was obtained by interviews with owners and by direct field appraisal of the properties. All properties were divided into the two broad classes of (1) commercial and (2) non-commercial types. The total outlays of owners from the time of their original investment up to 1940 was, according to the estimates, \$3,976,000 of which \$2,318,000 represented outlays by commercial resort owners and \$1,658,000 by owners of non-commercial property.

On the whole most investment was on a modest scale as far as individual establishments are concerned and most businesses established during the depression are still owned by the original investor. Up until 1940, only 15.3 per cent of the recreational businesses had changed hands. However, some of those included in the 15.3 per cent have changed hands several times. Smaller roadside businesses apparently change hands most frequently.

The comparatively low rate of primary transfers of recreational businesses does not necessarily indicate that investment in such businesses has been particularly satisfactory from a business standpoint. A survey of business conditions in the area in the spring of 1940 disclosed that, out of a total of 172 businesses interviewed, 42.4 per cent had experienced a decline in business since 1937. For 22.1 per cent, business had increased, 19.8 per cent reported little change and 15.7 per cent made no comments.

Expenditures by Recreationists²¹

No available data indicate directly the expenditures by recreational groups in the lake vicinity. However, some quantitative measure of these expenditures can be made by estimates based on sales tax data and data indicative of various phases of recreational travel and expenditures. In making expenditures estimates it seemed pertinent first to arrive at an estimate based on the average expenditure of all groups stopping at commercial resorts. Expenditures made by summer residents and transient visitors not using resort accommodations are somewhat different and are estimated separately. It should be understood too that these estimates were made before the war emergency interfered with the free use of motor cars.

Expenditures by Groups Stopping at Commercial Resorts.—

Estimates of expenditures by guests of commercial resorts were determined by multiplying the estimated average daily expenditures by an estimated number of days such groups spend in the area. By means of a questionnaire submitted to resort businesses and a study of costs of services and commodities in the area it was found that the average group of 3.5 persons spends approximately \$31 during a three day stay in the lake area. These expenditures were divided approximately as follows: Lodging \$9, food \$11, amusements \$8 and transportation \$3. The average expenditure per individual was about \$2.95 per day.

The per day resort capacity of the resort area is 5,274 individuals. This capacity is largely available from May 1 to October 1 making the total available capacity during this period 796,222 guest days. From the data secured from resort owners it was estimated that the facilities of the resort area were utilized at approximately 22 per cent of capacity during the period May 1 to October 1. This being the case approximately 175,395 guest days were spent in commercial resorts during this period. At an average expenditure of \$2.95 per guest day, \$534,954 were spent by guests of commercial resorts during this period. During April, October, and November the resort capacity was estimated to be 365,770 guest days. This capacity was estimated to have been utilized at 9.7 per cent (of capacity) and the expenditures to have been \$105,459. Total expenditures for all months and at all commercial resorts in 1939 were, therefore, \$640,413.

Expenditures by Summer Residents.—The owners of the 557 summer residences are mainly considered as summer residents. Expenditures made by these groups are difficult to determine and no

²¹It should be understood that these expenditure estimates are only for expenditures made with the businesses included in this study. No attempt is made to estimate outlays for supplies, transportation, or other commodities purchased for use in the area.

great volume of indicative information was uncovered during the course of the survey. The majority of the summer homes are small and the expenditures of their owners consist mainly of outlays for maintenance and repairs, expenditures for boats and fishing equipment, and for household outlays. It is estimated from the data available that all owners of summer residences and their guests spent approximately \$75,000 in the lake area during the vacation season of 1939.

Expenditures by Transient Visitors.—It is most difficult to determine just how many visitors come to the Lake for one day, and it is still more difficult to determine the expenditures for such groups. However, field observation in the area disclosed the fact that there are many visitors using the Lake for recreational purposes or driving through the area who do not remain over night. The expenditures of individuals in this group are relatively small, but because of the large number of such transient visitors the total expenditures of the group as a whole is considerable during the course of the vacation season. Souvenir stands, gas stations, restaurants, boat docks, and other small businesses benefit most from this type of recreational business. Data obtained from traffic flow records and manual count of visitors in the Lake of the Ozarks Public Recreational Area indicate that approximately 100,000 transient visitors pass through this area during the vacation season. Expenditures of this group probably average about \$1 per person and expenditures of all transient visitors approximate \$100,000 a year.

A combination of these estimates indicates that recreational expenditures in the lake area totaled in 1939 approximately \$800,000. A further analysis of the volume of expenditures based upon sales tax information gave closely similar estimates. In addition to these expenditures of recreationists, however, are considerable outlays of resort owners and of public agencies on construction and improvement. The total yearly volume of business in the area to be attributed more or less directly to recreation in recent prewar years has been, therefore, not far from a million dollars.

CONCLUSIONS AND RECOMMENDATIONS

This study of the recreational development in the Lake of the Ozarks Area as it affects land use has been brief rather than comprehensive. Nevertheless, certain major conclusions stand out rather clearly. In the first place, the recreational development of the lake area has been so considerable that it now quite definitely occupies a place of first importance as an outdoor recreational center in the State. Second, the amount of investment in recreational improvements is large. Third, these recreational improvements are now an established and important part of the tax base of the four counties in which the Lake is located. Fourth, the number of people who visit the lake area during the course of the year runs into the tens of thousands, and fifth, total expenditures for recreation in the area are in the neighborhood of a million dollars per year.

Finally, the period of initial rapid recreational development is now apparently over and further development will come only if a considerable effort is made to improve the recreational attractiveness of the area. Such improvement appears distinctly possible, if the war does not interfere too seriously, and the recommendations as to what might be done to increase the attractiveness of the area from a recreational viewpoint fall rather easily into three categories concerning (1) the Lake itself (2) the riparian lands and (3) the rough lands that surround both of these.

(1) The data of this study are not to be interpreted as a factual study of what has happened to fishing in the lake. The investigators of necessity were forced to place their dependence upon the judgments of resort owners and others that fishing in recent years had been less good than formerly and that the lack of fishing luck was a factor of much importance in the future of recreation in the area. Recommendations with respect to what may be done to improve fishing also fall outside the province of this study. Many questions of a distinctly technical nature are apparently involved. The attention of the biologists on the one hand and of the hydraulic engineer on the other are apparently needed.

The fact that recreation is the secondary and not the primary use of the lake may make it impossible to control the lake level in such a manner as to encourage a maximum growth of aquatic plants which supply food for the fish. Perhaps, however, ways and means may be worked out for reducing the violence of the fluctuations. Barring that

possibility there may be other means of encouraging aquatic plant life that may be within reach. About all this study can recommend is that a continuous search for solutions be made. There seems little reason to doubt but that improved fishing would very promptly be reflected by an increased popularity of the Lake as a recreational area.

(2) With respect to the riparian lands the one major recommendation arising from the study is that the further development of the recreational facilities of the area be made according to some established plan. Development so far has been hit and miss with no shadow of a central plan for guidance. As a result the excellent and the not so excellent recreational structures are completely intermixed and the impression upon the vacationist is wholly good only, when by accident, he sees only the finer sections of the area. Some vacation areas have been all but spoiled by a multiplicity of flimsy and garish structures and innumerable signs all clashing with the landscape that is their setting.

Vacationers must, on the whole, wish to get away from things such as these that are so reminiscent of the less desirable aspects of their own urban environment. Almost certainly an area such as the country about the Lake of the Ozarks rests and pleases them by the contrast it provides with the things they are accustomed to in everyday life. A vacation area probably loses charm in direct proportion to the extent that it becomes like a city suburb and there are already a few parts of the lake area that are hardly to be distinguished from city suburbs.

Just how to put any plan of development into effect is beyond the province of this study. Much more detailed study of the area must indeed be made before any such plan could be drawn up. Furthermore, under existing state statutes no plan could formally be put into effect after it was drawn unless indeed some public agency purchased all undeveloped land as a preliminary. That is, there is no zoning law now in Missouri statute books that would permit a comprehensive zoning²² of the entire lake area and, probably, in no other way could control over future developments be established. A first need, therefore, for the effectuation of a proposed plan would be the passing of a rural zoning enabling act by the General Assembly.

²²The bill (Senate No. 172) providing for county planning and zoning passed by the last (61st) General Assembly is specifically limited in its application to counties in which there are or may be located national defense projects and to counties immediately adjoining these. Only Camden of the four lake counties would qualify at present.

(3) With respect to the rough lands of the area the recommendation that arises out of this study is that they be made a much more effective part of the recreational area. A rejuvenated hunting on these lands might be made to compensate for the decline in fishing (assuming such decline to have occurred) and particularly to increase the popularity of the area during the fall season. Fortunately there is little question but that the hunting in the area may be improved greatly by a game propagation and management plan. Management of the area for game production can hardly become intensive, however, until several other steps have been taken.

First, the area should be put into public ownership since only if it is publicly owned will the rights of all to hunt over it be guaranteed. Since public funds will almost certainly be employed in the game restoration program the right of the public to access to the game must be assured.

Second, a program of forest restoration needs to be inaugurated since the game will need food and protection from fire and since the management of an area for game alone can hardly be sufficiently remunerative to justify the expense. Forest products will, in such a program, be the main product and game the by-product. As a further by-product, however, the protection of the forest and game from fire would be an important safeguard to any recreational structures in the area. There would be, furthermore, two additional by-products of some importance. That is, forest management and fire protection would restore the leaf mold and reduce erosion and run-off in the immediate area of the Lake and so contribute toward maintaining the clarity of the lake water. A constant washing into the lake of the ash residues of burning is known to be detrimental to fish life and would be all but eliminated by a program of fire protection for the area.

Finally, the most important by-product of all would be the employment that could be afforded to residents of the area by undertaking its restoration to forestry. Most of the best farming land of the area was flooded and such farming as remains is on the upland and not very profitable. A considerable amount of part-time employment is often available in areas where forest development on a large scale is undertaken, and would provide a welcome addition to the slender incomes of the resident rural population of the area.

In briefest categorical form therefore, the recommendations arising from this study are (1) that steps be taken to find means of im-

proving the fishing in the lake area, (2) that a general overall plan of recreational improvement for the lake area be drawn up (3) that a rural zoning enabling act be passed by the State General Assembly so that a needed public control over the development of the area may be established, and (4) that a great area of rough lands surrounding the lake area be put into public ownership and developed for forests and game and so managed in general that they contribute a maximum to the recreational attractiveness of the area.