

IMPACT OF RECREATION ON WATER RESOURCE MANAGEMENT

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INTRODUCTION

The importance and impact of recreation in the planning, development, and use of water resource projects is an easily recognizable factor today. In fact, it would be rare under existing planning functions if recreational potentials were not consciously recognized and incorporated into most water related project developments. This trend in part no doubt stems from the public's increased demands for water recreational facilities resulting from released hours available for leisure. Moreover, as the demands of a complex society become even greater, it can be surmised that ever increasing escape mechanisms will be requested, water recreation being one of many such outlets.

These forces have produced some unique ramifications for the agencies involved in water resource planning, development, and management. With the injection of water recreation under agency umbrellas, it has put an additional stress on existing organizational mechanisms. Agencies have responded to this enlarged need differently, which in turn has resulted in variegated management and operation frameworks. This paper is purposed with providing a sequential analysis of the development of water recreation facilities in the State, identifying the major agencies involved, indicating their response to water recreation in terms of planning, development and management, and suggesting alternative approaches to deal with some of the resulting problems.

MAJOR AGENCIES INVOLVED IN WATER RECREATION

In order to isolate how the present management structure came into existence and to pinpoint the source of some existing problems, which will be analyzed later, it seems beneficial to provide a historical overview of agency development and their relationship to water recreation. Among the selected agencies at the State level are the State Park Commission, the Game and Fish Commission, the three major River Basin Development Districts and the Pearl River Valley Water Supply District. Federal participation includes the Corps of Engineers, the National Forest Service, and the Soil Conservation Service. A brief analysis of each agency's scope and function is developed below.

State Agencies

One of the major water recreational sources at the State level is the Mississippi Park Commission. The Commission covers sixteen parks, almost all of which provide water recreation facilities. Initiation of what was to become the park network began in the early 1930's when the Civilian Conservation Corps developed lands acquired from local citizens and County Boards of Supervisors, later turned into state parks. Ten parks were developed between 1934 and 1941, one in 1943, three in the mid 1950's, one in 1960, and one was transferred from the Game and Fish Commission in 1971. During the early thirties, the parks were loosely controlled by the State Forestry Commission, which was replaced by the State Board of Park Supervisors in 1936. Twenty years later, the Mississippi Park Commission was created and in 1964, the Commission was replaced by the Mississippi Park System. In February, 1972, the coordinating body again assumed the name of Mississippi Park Commission. Thus, what originally started as a project designed primarily to provide work during the 1930's has now become the core of the State Park Commission's program to provide outdoor recreation for people with leisure time. Figure 1 depicts the general location of state parks offering water recreation.

Funding for the system is provided for the most part through legislative appropriations which are supplemented by park revenues resulting from camping facilities, boat launching fees, fishing fees, etc. Previous studies have developed the adequacy and condition of these facilities.¹ To summarize, however, most of the parks are not in adequate condition, which stems basically from a lack of funds and unstable funding arrangements.

Management of each park is carried out by a park ranger while major maintenance is the responsibility of a Superintendent of Maintenance Construction who coordinates a seven-man crew that travels the State.

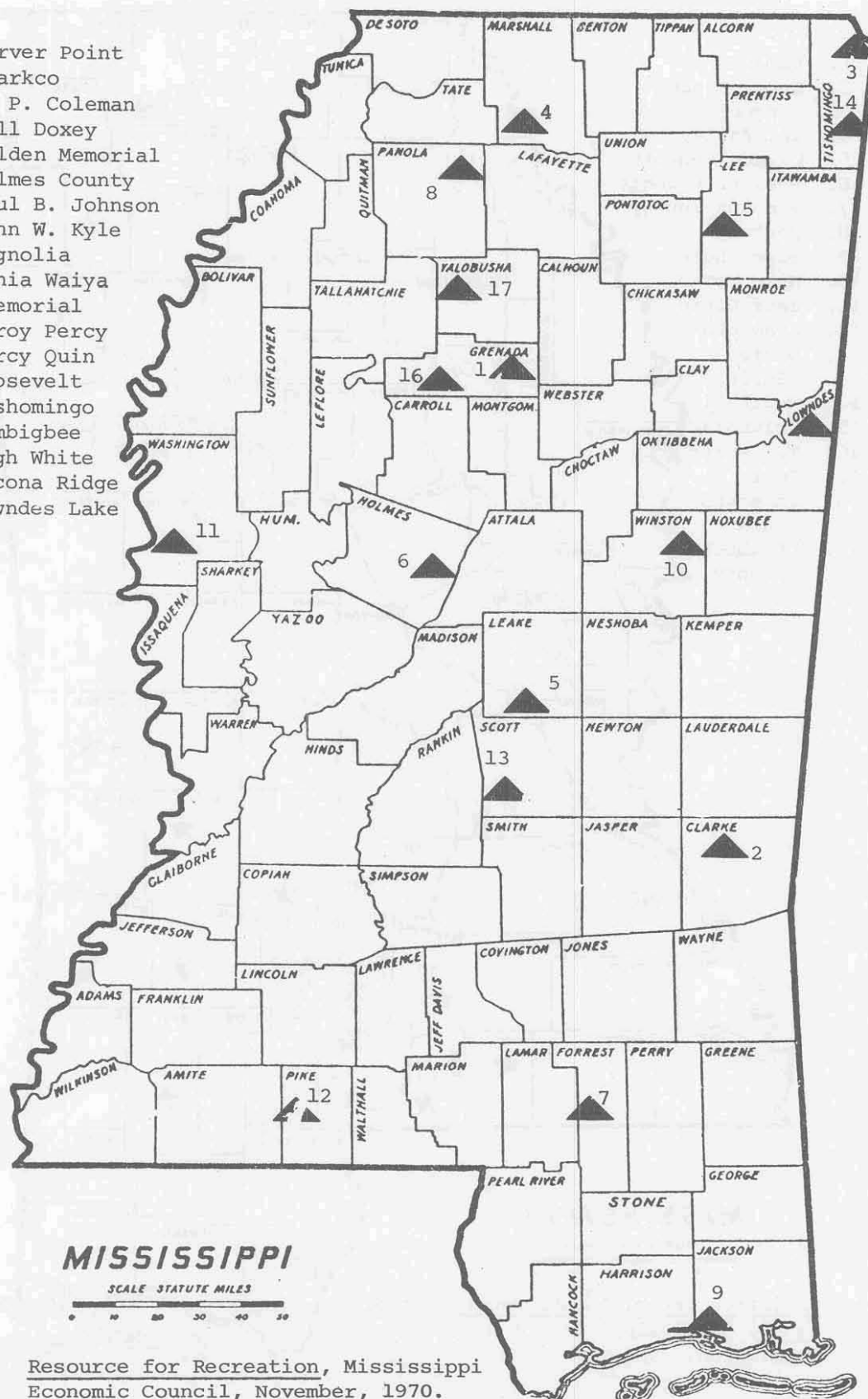
Although the Mississippi Game and Fish Commission's primary purpose is the management of fish and wildlife and its regulation, it has become increasingly involved in water recreation management as well. Involvement in water recreation basically stems from the management of its 19 fishing lakes shown in Figure 2. Outside of the lakes' primary function of providing fishing and hunting opportunities, there has been increased utilization in the areas of boating, skiing, swimming, and use of some primitive camping facilities. Operation and maintenance is the responsibility of full-time managers employed at 16 of the lakes; however, 12 of the lakes employ only one person. The majority of operational funds for the Commission is derived from sales of hunting and fishing licenses and to a lesser degree from fines, user fees, and federal sources. These sources have been very stable, sustained, apparently adequate, and have not been supplemented by additional legislative appropriations outside of what these sources generate. Although the major scope of the Commission's responsibilities does not

¹ Mississippi Economic Council, Resource for Recreation--An Examination of the Mississippi Park System, November, 1970.

FIGURE 1

MISSISSIPPI STATE PARKS OFFERING WATER RECREATION

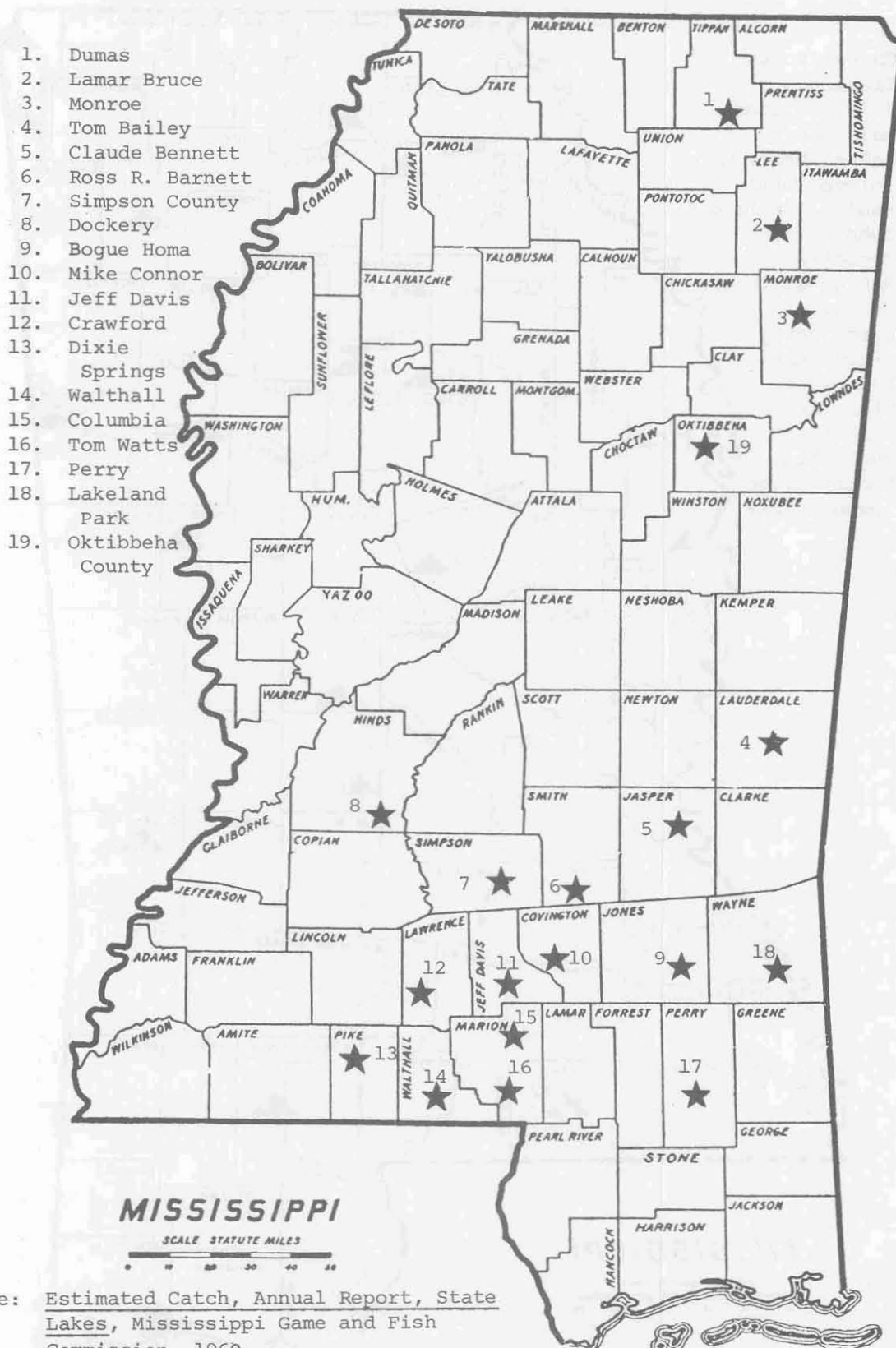
1. Carver Point
2. Clarkco
3. J. P. Coleman
4. Wall Doxey
5. Golden Memorial
6. Holmes County
7. Paul B. Johnson
8. John W. Kyle
9. Magnolia
10. Nania Waiya Memorial
11. Leroy Percy
12. Percy Quin
13. Roosevelt
14. Tishomingo
15. Tombigbee
16. Hugh White
17. Yocona Ridge
18. Lowndes Lake



Source: Resource for Recreation, Mississippi
Economic Council, November, 1970.

FIGURE 2

MISSISSIPPI GAME AND FISH COMMISSION LAKES



Source: Estimated Catch, Annual Report, State Lakes, Mississippi Game and Fish Commission, 1969.

include water recreation in its broadest sense, it has over the years become more involved.

The three major river basin development districts in the State are unique in the sense that they are special creatures of the legislature, have special taxing availability which produces a stable source of funds, and have broad planning, development, and management responsibilities. Specifically, the districts are the Pat Harrison Waterway District, created in 1962, composed of 15 counties and covers the Pascagoula River Basin; the Pearl River Basin Development District, created in 1965, composed of 15 member counties and covers the Pearl River Basin; and the Tombigbee River Valley Water Management District, organized in 1963, consists of 12 counties and covers the Tombigbee River Basin. Present delineations of the three districts are shown as Figure 3.

The scope and purpose of each district is basically the same. Each is purposed with water resource development within its own delineated area which may include multi-purpose reservoir development or other water retarding structures for flood control, water quality, recreation, land stabilization, navigation, industrial development, and other purposes. Such work is normally carried out as a joint effort with several federal agencies including the Soil Conservation Service, the Corps of Engineers, Bureau of Outdoor Recreation, and others. Also, as a rule, the districts work with and coordinate the efforts of its member counties and the various local, state, and federal agencies in developing the overall district.

With respect to funding, two of the districts have available the 2-mill state ad valorem levy plus a 1/2 mill ad valorem imposed by the member counties. The other district also relies on an ad valorem levy, but is somewhat less at this time. The funds from these sources are estimated to increase approximately 7.0 percent per year, and thus provide a reliable and relatively stable source of funds for retiring general obligations bonds if utilized.²

Each of the districts is involved (or based on its development plans, will become increasingly engaged) in the development and management of water recreational facilities. This has been particularly true of the Pat Harrison Waterway District where water recreation development has been marked including Flint Creek Reservoir at Wiggins, the Okatibbee Dam Project at Meridian, and several water parks such as Dry Creek at Mt. Olive, Archusa Creek at Quitman, Maynor Creek at Waynesboro, and Little Black Creek at Purvis. Several other early action developments that will include water recreation are in the planning stages. To date, in-house emphasis on management and operation has been the policy.

The other two districts have followed a trend of returning its water recreational projects back to local entities for management and operation, although the district remains ultimately responsible. Recreational developments, however, have not been of the intensive type

²State of Mississippi Budget Report for Fiscal Year July 1, 1970, to June 30, 1971, p. 286.

as compared to the aforementioned District, Pat Harrison. Nonetheless, based on future development plans, these two districts will become increasingly involved in water recreation management. For example, within the Pearl River Basin, 29 multi-purpose lakes and 179 flood water retarding structures are planned in cooperation with the Soil Conservation Service. If the District does not assume the management and operation of the resulting water recreation facilities, local participation will be augmented considerably.

At this point it is worthwhile to note that a potential impact for recreational development, and thus management, is the recent directive issued by the Office of the Bureau of Budget and Management. Specifically, the Bureau increased the interest rate used in computing the benefit-cost ratio for public works projects to 10.0 percent. This change could have a marked effect for the river basin development districts, depending on the rate used in setting the early action programs. For example, when the comprehensive study for the Pat Harrison Waterway District was completed in 1968, the rate was set at 3.4 percent. The re-evaluation of projects with the new 10.0 percent rate has now eliminated several proposed projects that would have included water recreation. As the federal government changes its position on public works funding, its impact will definitely be felt not only in recreation in the State but in other development purposes as well.

The Pearl River Valley Water Supply District, commonly referred to as the Ross Barnett Reservoir, is composed of the five counties adjoining the water development. Although in part purposed with supplying Jackson, Mississippi, with water, the importance and resulting utilization for water recreation purposes of the 50 square mile development are considerable. Recreational development has proceeded with the development of several parks, access roads, boat launches, and etc.

Funding consists of the 2-mill state ad valorem tax with the option to collect up to 2 additional mills from the member counties (presently 1.75 mills). In addition, the District has a one-half million dollar annual contract with the city of Jackson for water. The District's operation is carried out by a general manager and a staff of approximately 80 people. Suffice it to say, water recreation management is an integral function of the total project.

Federal Agencies

The role of federal agencies in the management and operation of water recreation facilities is also significant. For example, the Corps of Engineers and the National Forest Service are significant sources of water recreation development and management at this time. Involvement by the Soil Conservation Service is also important as a source but less from the standpoint of management. Briefly, these agencies' roles in the State relative to water recreation are as follows.

Originally purposed with performing navigation and flood control projects, the Corps was responsible for providing several such projects

in Mississippi. Flood control measures in particular resulted in the construction and maintenance of four major reservoirs including Arkabutla Lake and Sardis Lake in the early 1940's and Grenada and Enid Lake in the middle 1950's. After the reservoirs were constructed, people began to use them for recreation. Then, following a master development plan, the Corps constructed and maintained recreational facilities at these sites. In addition, the Corps has leased sites on two of the reservoirs for three state parks managed under the State Park Commission.

Although federal funds are used in the operation and maintenance of the recreational facilities, the Corps is presently implementing an accelerated 8-year plan to upgrade the facilities (estimated expenditures of \$10 to \$14 million) and upon completion, turn them over to the Mississippi Park Commission for operation and maintenance (the ramifications in the plan will be explored later). New projects by the Corps which incorporate recreation facilities are now on a cost-share basis with the State and will be turned over to the State or other local interests for management and operation as required by the Recreation Act of 1965. Thus, the Corps' role in water recreation management, while significant, is planned to be phased out in the near future.

The major function of the National Forest Service is to manage and maintain the national forests in the State. To maximize the use of these resources, however, water and other recreational facilities are provided within the forests and usually designed to be of a primitive character. In addition, the Forest Service assumes the full operation and maintenance responsibility. While the development cost of such water recreational facilities may be occasionally shared by other agencies, on-going expenditures are borne in part by sales of timber. There are numerous water related facilities within the forests which are delineated in Figure 4. It is apparent, however, that water recreation per se is a small part of the total operational responsibility of this agency.

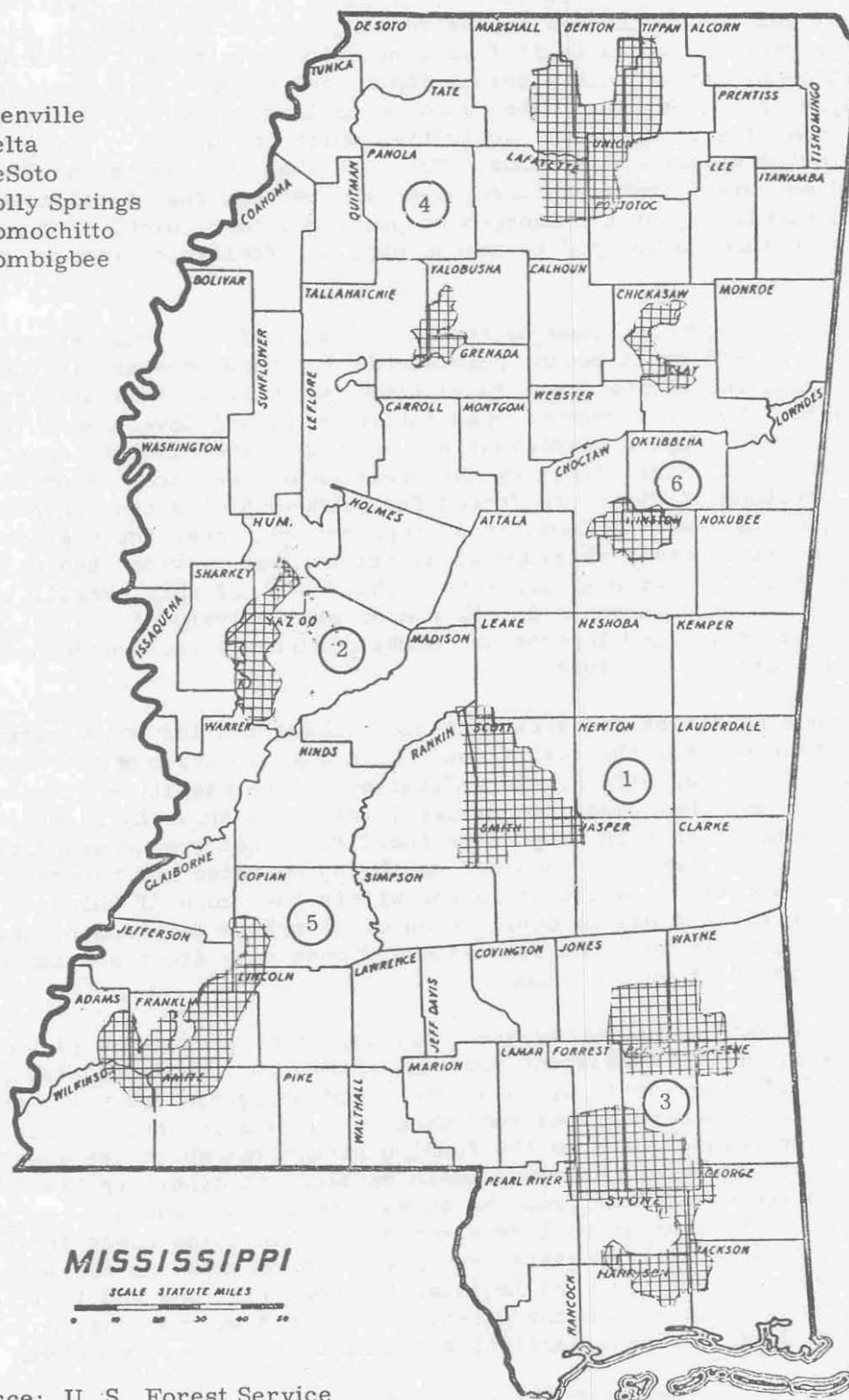
The Soil Conservation Service (SCS) also serves as a major source of water recreation in the State. While this is by no means their emphasis, the incorporation of water recreational development within their watershed planning is quite frequent. These costs, however, are required to be borne on a cost-share basis with local sponsors. Operation and management are never assumed by the SCS but always assumed by the local sponsor which could be a river basin development district, board of supervisors, drainage district, city, or other party. Numerous projects of this nature have been developed in the State and many are planned. This trend points to an increased involvement by some of the parties already treated in this analysis in addition to other elements which have not been developed, e.g., cities, county boards of supervisors, etc.

Recreation and Resource Allocation

Briefly, this has been the pattern and sources of water recreation development in the State and a cursory treatment of how they are funded,

FIGURE 4
NATIONAL FORESTS IN MISSISSIPPI

1. Bienville
2. Delta
3. DeSoto
4. Holly Springs
5. Homochitto
6. Tombigbee



Source: U. S. Forest Service

operated, and maintained. Several conclusions about this evolutionary process seem to be in order. First, it is obvious that development in the past proceeded on a relatively unstructured and haphazard basis as it relates to water recreation. This seems to have been particularly true of what was to become the state park network. Moreover, in these earlier years it seems as if full recreation development was more of an afterthought rather than a normal input, for example, the earlier Corps of Engineers reservoirs. The response to this procedure was to expand the scope of some agencies' activities which in turn no doubt put stress on existing management systems. The fact that the general public, including out-of-state visitors, uses the recreational facilities adds to the complexity of the management problems, particularly for management structures developed to manage physical facilities rather than people.

As more agencies came to recognize the merits of multi-purpose development and as it became permissible for them to share in the additional cost for recreational facilities, activity in this area further increased. With new avenues open for recreational development, we also see more role players participating. Probably the biggest incentive was provided in Mississippi by the creation of the three major river basin development districts formed from 1962-1965 and the concomitant funding mechanism. In fact, it is apparent that over the past few years the river basin development districts have provided the majority of new water recreational projects. The result of this overall trend has been a marked increase in the number and activity of state and federal agencies, development and other districts, local governments, etc., all getting involved.

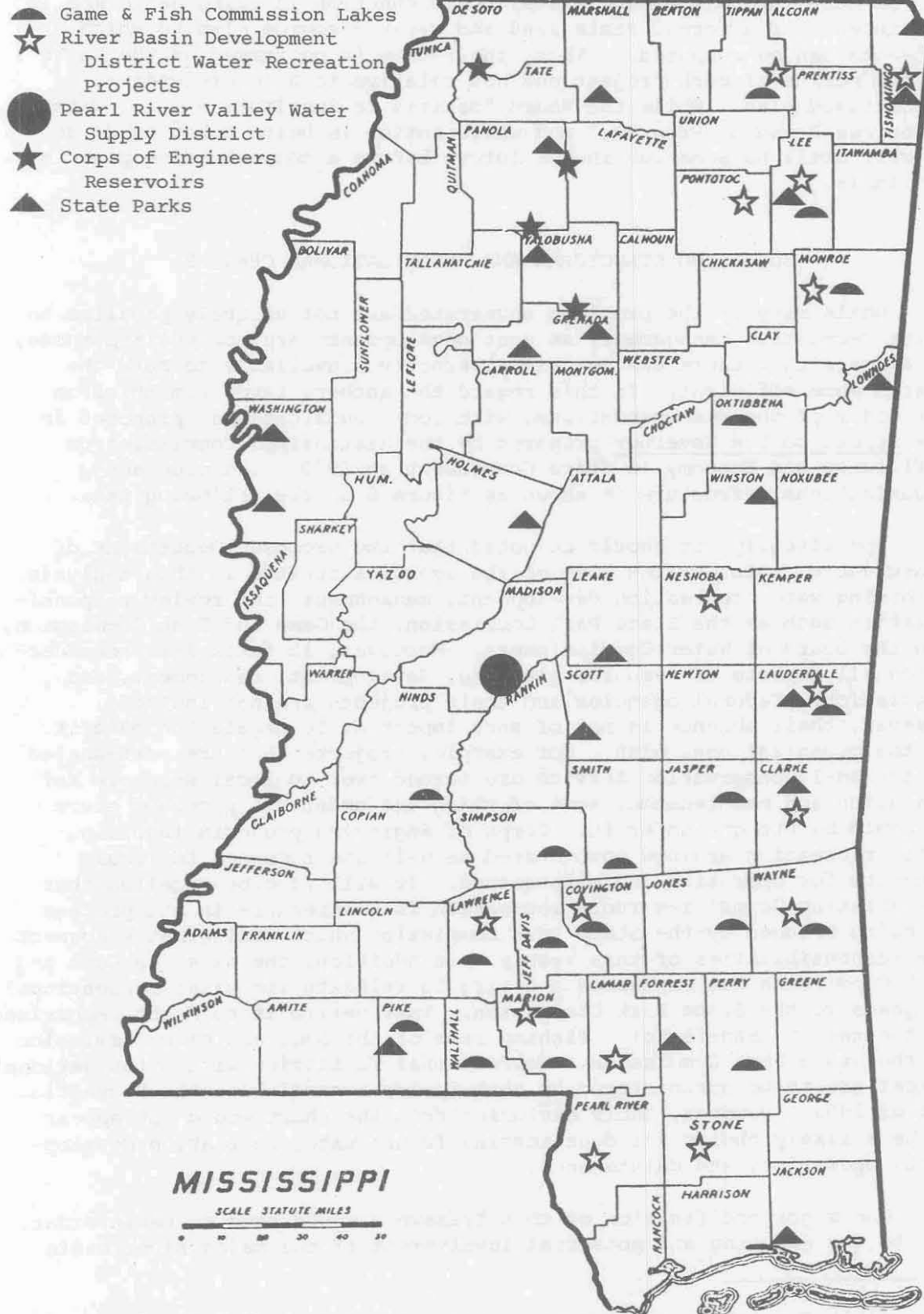
Since no formalized structure of coordination for recreational development exists, the result could be a misallocation of resources and duplication of effort. An indication of the magnitude of water recreation and the number of parties involved is shown by Figure 5. It should be noted that in many cases facilities that are geographically close have been developed and are now being operated and managed by different entities. While it is not within the scope of this paper to develop specific cases of duplication of effort in development and/or management, it is apparent from Figure 5 that many areas are subject to several levels of jurisdiction.

While each group vested with some aspect of recreation planning development and/or management proceeds within its own delineated area, we find differing levels of development and management as well, which immediately raises questions regarding resource allocation. This, in turn, often relates back to the funding structures which are equally varied. For example, the river basin development districts have a very stable source of revenue from the ad valorem levies; and a cursory analysis of the recreational developments within these areas indicates what can be done with adequate resources. In contrast is the State Park Commission that must rely on legislative appropriations and limited revenue generators within the parks. Yet providing and managing water and related recreational facilities comprises its major function.

While it is true that the Board of Water Commissioners stands in the position of "determining whether proposed developments are in the

FIGURE 5

SELECTED WATER RECREATION DEVELOPMENTS IN MISSISSIPPI



best interest of the people of Mississippi" and are "required to review federal projects dealing with water resources to determine if they are in the best interest of the State," this function is being performed in the absence of a formal state land and water resource plan to which projects can be compared.³ Thus, the review is performed on the basis of the merits of each project and not relative to a comprehensive, prioritized plan. While the Board "desires to institute a . . . Water Resources Planning Program," and while action is being taken to do so, it will still be sometime in the future before a comprehensive plan is available.

SUGGESTED STRUCTURAL AND ORGANIZATIONAL CHANGES

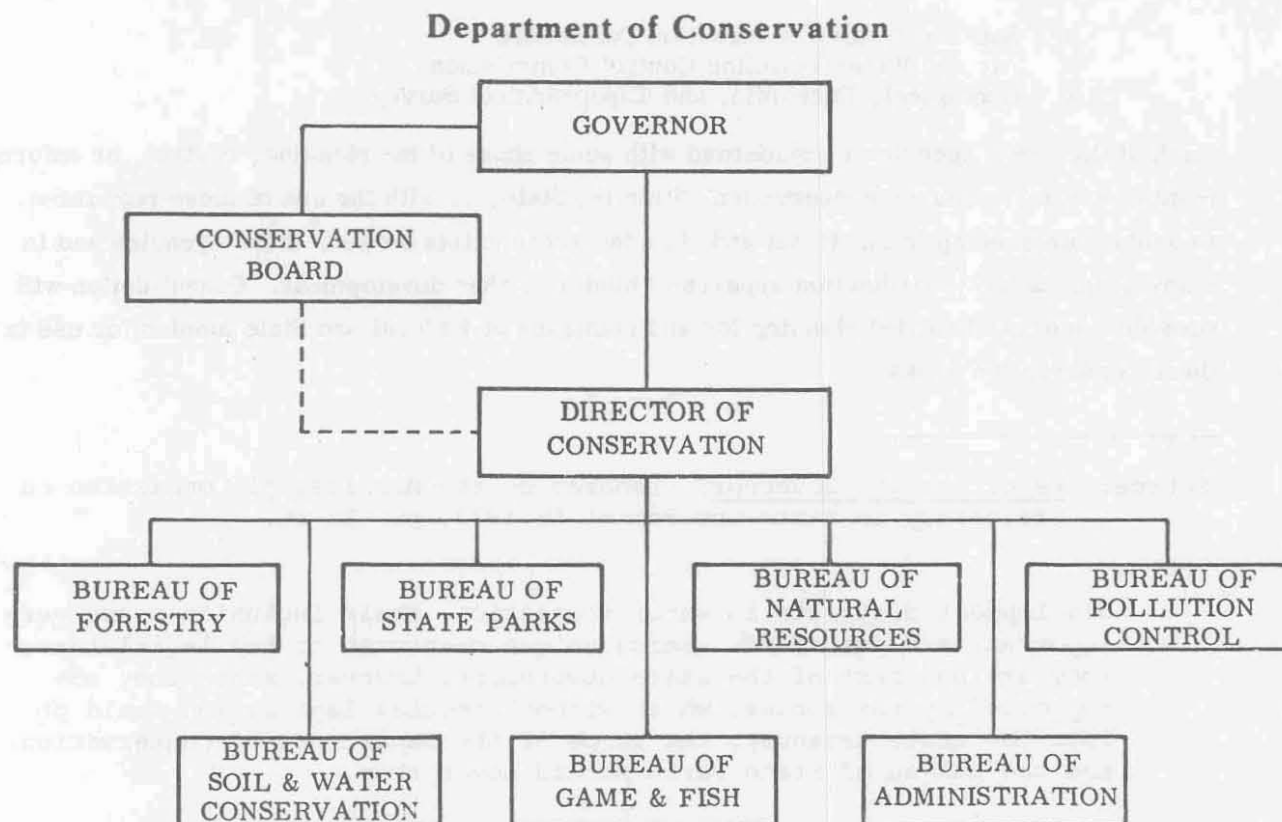
While many of the problems enumerated are not uniquely peculiar to water recreation management, as most developments are now multi-purpose, it appears that there are certain alternatives available to make the system more efficient. In this regard the authors favor something on the order of the recommendations, with some modifications, proposed in the Report to the Governor prepared by the Mississippi Commission on Efficiency and Economy in State Government in 1970. The proposed organizational structure is shown as Figure 6 on the following page.

Specifically, it should be noted that the proposed Department of Conservation incorporates most of the agencies treated in this analysis as having water recreation development, management, and review responsibilities such as the State Park Commission, the Game and Fish Commission, and the Board of Water Commissioners. Moreover, it takes into consideration all aspects of resource planning, development, management, and regulation. Federal agencies and their projects are not included; however, their absence is not of such import as to negate the benefits of the organizational plan. For example, projects that are cost-shared by the Soil Conservation Service are turned over to local sponsors for operation and maintenance, some of which are under the proposed chart or could be brought under it. Corps of Engineers projects involving water recreation are now cost-shared as well and returned to local sponsors for operation and maintenance. It will also be recalled that the existing Corps' reservoir recreation facilities are in the process of being assumed by the State Park Commission which will greatly augment the responsibilities of this agency. In addition, the existing Game and Fish Commission has expressed a desire to relegate its water recreational programs to the State Park Commission. This desire is no doubt emphasized by the recent transfer of a fishing lake of the Game and Fish Commission to the State Park Commission. Recreational facilities within the National Forest are to be administered by that system according to the Recreation Act of 1965. However, their exclusion from the chart would not appear to be a likely choice for coordinating future water recreation development, operation, and maintenance.

One major modification of this framework would seem to be in order. Due to the existing and potential involvement of the major river basin

³1968 Cumulative Supplement to Mississippi Code, (1942), Annotated, Vol. 5.

FIGURE 6



FUNCTIONAL RESPONSIBILITY

This Department should plan and enforce regulations directed toward the conservation of natural resources of the State and encourage the preservation of natural scenic beauty and the development of appropriate facilities with the state park system.

RECOMMENDATIONS

- The Conservation Board should be appointed by the Governor as an advisory body to the Director. The Director should be responsible for the administration of the Department.
- The following existing agencies should be dissolved and their duties and functions transferred to the Department of Conservation:
 - Game and Fish Commission
 - Forestry Commission
 - State Park Commission
 - Marine Conservation Commission
 - Boat and Water Safety Commission
 - Board of Water Commissioners
 - Oil and Gas Board
 - Mineral Lease Board

FIGURE 6--Concluded

- Soil and Water Conservation Committee
- Air and Water Pollution Control Commission
- Geological, Economic, and Topographical Survey

Each of the above agencies is concerned with some phase of the planning, control, or enforcement of natural resource conservation within the State, or with the use of these resources. Considerable overlap in functional and planning areas exists between these agencies and in many areas lack of coordination appears to hinder further development. Consolidation will provide a means of unified planning for, and managing of Federal and State monies for use in these conservation areas.

Source: Report to the Governor, prepared by the Mississippi Commission on Efficiency in State Government in 1970, pp. 15-16.

development districts in water recreation, their inclusion seems very important and justified. Being unique creatures of the legislature, they are not part of the state government; however, since they are supported by tax monies, which without special legislation would go into the state treasury, the scope of the Department of Conservation and the Bureau of State Parks should cover them.

While it is not within the scope of this paper to treat the intricate operational details of the proposed system, selected problems to be resolved will be noted, and if handled appropriately, could result in economies to the State. Probably the largest problem posed by the suggested framework is the increased scope of the Bureau of State Parks and its present, limited funding methods. Relying heavily on the legislature and its related vicissitudes, adequate funds have not been provided. As a solution to this deficiency, a coordinated budget could perhaps be considered by the Department of Conservation. Following this approach would negate the traditional single agency "hat-in-hand" methods and would allow for the allocation of funds within the Department to the various subunits on a relative need basis.

In addition, the Bureau of State Parks could, in concert with the Board of Water Commissioners (which would also be an integral and coordinating part of the Department of Conservation), allocate recreational resource developments based on needs and priorities to best maximize resident use, notwithstanding out-of-state participants. Overdevelopment in certain areas to the exclusion of others where marginal benefits would have been much greater has no doubt occurred in the past. For example, due to the mobility of people, a project in one location can provide recreation for people from a relatively large geographic area and because of the availability of federal funds, there is a tendency and incentive for each agency to plan and develop recreational facilities in their particular district to meet the needs of all the people who could be served from that particular site without much regard for plans and/or developments in other areas. This factor has a tendency to result in excess development and hamper efficient

management. A chance to effectively evaluate all proposed recreational developments under one screening process should eliminate misallocation of resources, redundancy in operation and maintenance efforts, and make for better utilization of expensive equipment and supplies.

Realigning agency relationships and revising agency functions under the Department of Conservation would further enhance the State's review process of federal projects in addition to coordinating elements under state government as noted earlier. Apparently in the past, the review process has been cumbersome and time consuming and perhaps neglected or taken lightly by some of the agencies. The new structural framework would facilitate such reviews by having the Board of Water Commissioners work closely with each agency and the agencies in turn establishing better lines of communication. Under this method, a coordinated approach to review with the various functional elements of the Department represented could be achieved and thus increase the State's voice in determining its resource planning and development.

With the increased role of water recreation as a drawing card for the State, it seems quite appropriate to develop and administer such a tool as effectively as possible. That it has an import is easily established. During 1970, for example, almost 6.7 million people visited the Corps of Engineers' Reservoirs; over 1.7 million people visited the state parks; and over 134,000 sportsmen fished the Game and Fish Commission lakes. The point is that almost all water resource developments and their related management needs and functions do not include dealing with the public; however, water recreation usually does, and as such, should command due attention in promoting the image of the State. This unique factor also puts additional pressure on existing management frameworks which may not be equipped to deal with this aspect of management as it should be. Hopefully, the proposed system of management would recognize this factor and develop it to its relative advantage.

In summary, it appears both feasible and practical at this time to reorganize agencies and agency relationships to provide economical use of the State's resources, water recreation being one aspect of the total problem. The suggested Department of Conservation appears adequately structured for this function, and the Bureau of State Parks seems particularly suited to coordinate water recreation development and management. However, in the coordination of these functions, it seems paramount that a comprehensive inventory of the State's land and water resources be made to establish development and use priorities. Hopefully, such a study will be forthcoming. Plans by the Board of Water Commissioners are to utilize Title III State Planning Grant monies under the Water Resources Council Act to develop in-house capabilities in the future as opposed to directing these funds to the master water management districts of the State as in the past. In addition, bills have been introduced at the national level, such as H.R. 2173 to augment the authority of the Water Resources Council to include land as well as water. Federal support of State comprehensive planning for land and water is included. With these developments potentially materializing, the creation of the proposed Department of Conservation would provide a ready mechanism to take advantage of these programs. In addition, water recreation could be placed in proper perspective and funded and managed to realize its appropriate potential for the State.