

# MISSISSIPPI'S RECREATIONAL FISHERIES RESOURCES



# RESEARCH ADVANCES

Forest & Wildlife Research Center

March, 1997 • Volume 2, No. 3



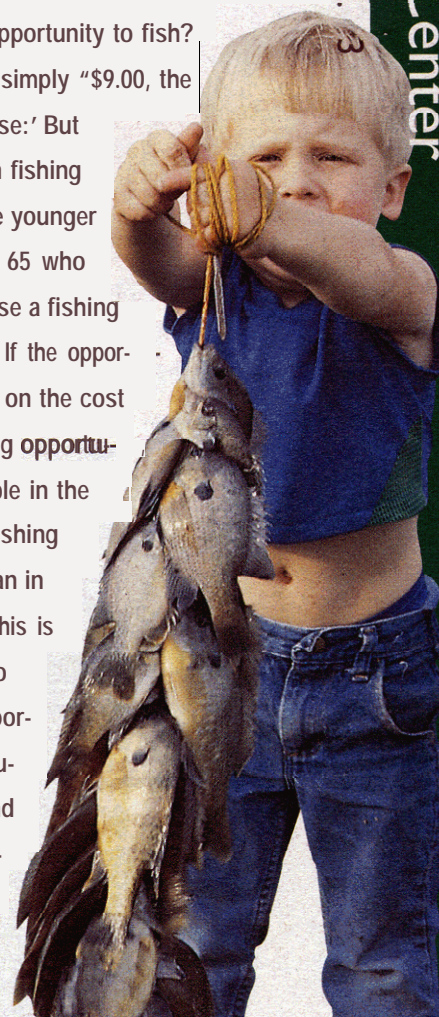
## OPPORTUNITIES AND ASSETS

Mississippi's aquatic resources are abundant and productive. The State has 14,000 miles of streams, 345,000 acres of ponds, and 295,000 acres of larger lakes and reservoirs. These diverse aquatic resources provide easily accessible, high quality fishing not only for Mississippi anglers, but also for anglers from neighboring states.

In 1991, almost a half million Mississippians 16 and older plus a quarter million Mississippi youths participated in recreational fishing. Anglers age 16 and older fished a total of 8.9 million days; 90% of this fishing occurred in freshwater and 10% occurred in saltwater. Mississippi anglers are men, women, and children from all walks of life and all socioeconomic levels. They fish in rivers and streams, reservoirs and ponds, from shore, and from boats. Some seek fish to eat, others seek recreation and release their catch. Some specialized anglers pursue a single species, others fish for anything that bites. Some fish alone, some with fishing buddies, and many with their

families. Although their reasons may vary, all would agree that recreational fishing opportunities are valuable.

How valuable is the opportunity to fish? One answer might be simply "\$9.00, the cost of a fishing license.' But wait -- does that mean fishing has no value for those younger than 16 or older than 65 who do not have to purchase a fishing license? Definitely not! If the opportunity to fish is based on the cost of the license, then fishing opportunities are more valuable in the many states where a fishing license costs more than in Mississippi. Certainly, this is not the case either. To some anglers, the opportunity to fish is so valuable that they build and manage their own private lake. Valuating







fishing based on the purchase of land and development of a lake by this select group of individuals would have limited application to the majority of Mississippi anglers. Thus, assigning a value to recreational fishing opportunities is difficult.

One way to estimate part of the value of the opportunity to fish is to consider the economic value of fishing activities to the whole state. In 1991, 663,000 people 16 years of age and older fished in Mississippi waters; 488,000 of these anglers were residents of Mississippi and 175,000 traveled from other states. These anglers spent \$236 million to fish in Mississippi (Table 1). These out-of-pocket expenditures provide an estimate of economic value. This \$236 million (approximately \$360 per angler) is an index of what anglers are willing to pay to fish. (Clearly, it is more than simply the cost of a fishing license!) However, the direct expenditures do not address the total economic impact of recreational fishing to the State. Economic impact, the economic activity generated by the use of the resource, is the sum of the direct impacts, indirect impacts, and induced impacts that result from the use of fishery resources. Direct impacts are derived from the direct expenditures -- the initial purchases made by the angler from a retail merchant; e.g., buying a fishing reel or lure, tankful of gas, or renting a cabin.

Indirect impacts are the secondary effects from the retail sale. For

example, the fishing lure you bought at a retail store came from a plastic molding company that, in turn, bought

plastic resin from another manufacturer and hooks and wire from yet other manufacturers, and so forth. Induced impacts result from the wages and salaries paid by the direct and indirect businesses. These wage earners purchase other goods and services that create additional indirect and induced effects. The indirect impacts and induced impacts are sometimes referred to as the "multiplier effect." Using economic models developed by the U.S. Department of Commerce, indirect and induced impacts can be measured from direct impacts.

**The \$236 million spent to fish in Mississippi in 1991 had a total economic activity of \$489 million.** If recreational fishing were categorized as a "commodity," it would consistently rank among the Top 5 most valuable crops in Mississippi, along with timber, poultry, catfish, aquaculture, and cotton.

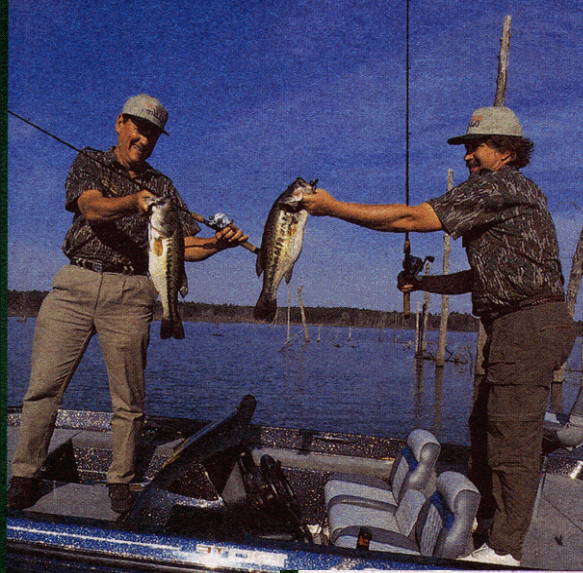
There are many components in this total economic value of recreational fishing to Mississippi. Recreational fishing in Mississippi directly creates 8700 person-years of employment and more than \$131 million in personal income annually (this amount is an induced impact and is included in the total economic activity).

State sales tax revenue from direct expenditures is



\$14 million, Income tax revenues total more than \$15 million, of which almost \$3 million is Mississippi state income tax.

Each year, Sport Fish Restoration funds are apportioned to states based on a funding formula that incorporates the number of licensed anglers. Sport Fish Restoration funds originate from excise taxes on certain fishing tackle, marine electronics, and marine fuels. These funds, almost \$200 million per year nationwide, are collected by the Internal Revenue Service and administered by the U.S. Fish and Wildlife Service. Sport Fish Restoration funds and fishing license revenues provide the funds used by Mississippi Department of Wildlife, Fisheries and Parks and Department of Marine Fisheries to manage fisheries resources. The ~~1991~~ Sport Fish Restoration appropriation for Mississippi was \$2.7 million. Fishing license revenue was \$3.1 million in 1991. These funds (total \$5.8 million) are specifically dedicated to management of fishery resources, boating access, and aquatic education programs. **It is these funds that create, maintain, and enhance the fishing opportunities that result in far more than a half billion dollar recreational fishing business in Mississippi.** In terms of total economic impact to Mississippi, the benefit: cost ratio exceeds 100:1 !



Although the information presented above reveals the significant economic value of recreational fishing to the

Mississippi economy, these statistics still do not address the total value of fishing as a recreational activity. In economic parlance, time spent fishing has an opportunity cost. Opportunity cost, although not yet estimated for recreational fishing in Mississippi, includes the value as a leisure alternative, the cultural value, the psychological value of being outdoors and "getting away from the usual routine," and sociological values of being with family and friends. Some of these values can be estimated by quantitative methods. However, how does an economist measure the value of memories or the value of a healthful recreational activity to a child, youth, or adult whose present activities may be destructive to themselves and to society? In this sense, recreational value may be priceless,

Recreational fisheries has, yet, another value. Fishes require clean water and good habitat. Therefore, fishing can be likened to a "miner's canary" -- good fishing means healthy aquatic resources, Because fishery resources are impacted by the totality of activities on the land and water, good fishing also requires wise management of all resources. Although only ~~19%~~ of Americans fish, a recent survey reported that 95% support fishing as a desirable activity.





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Table I

EXPENSE CATEGORY	EXPENDITURE, MILLION \$	
	Nationwide	Mississippi
<b>Trip related</b>		
Food and lodging	4,953.4	60.2
Transportation	2,799.3	32.4
Guide and package trip fees	450.3	0.6
Public and private land use fees	1152.9	3.5
Equipment rental	1169.2	0.4
Boat launching, mooring, storage, insurance, fuel, repairs	2,171.3	20.1
Bait, ice	1,150.7	119.5
Fishing equipment and tackle	3,463.7	57.2
Fishing electronic equipment	276.4	1.9
Auxiliary equipment (camping equipment, specialized boots and clothing, taxidermy costs, etc.)	619.4	5.3
Special equipment (boats, campers, cabins, trail bikes, etc.)	5,005.7	29.6
Other (magazines, membership dues, land leasing and ownership)	2,290.5	2.4
Licenses, stamps, tags, permits	486.7	3.1

Whether people fish or not, good fishing can be more than a miner's canary; recreational fishing opportunities can be the cause for the best possible use and management of our resources.

Aquatic resources are plentiful and fishing is a long established and popular activity in Mississippi. The number of people enjoying Mississippi's waters increases every year. Thus, maintaining healthy and productive fisheries resources becomes more important and, at the same time, more difficult every day. Extensive research will be needed to learn more about the anglers who pump over \$0.5 billion into the Mississippi economy. Answers and innovation are needed by fisheries managers charged with providing the healthy aquatic ecosystems and the productive fisheries anglers seek. Recent fisheries research on such topics as angler satisfaction, behaviors, and attitudes, crappie length limits, aquatic vegetation, fish population dynamics, and habitat management and protection in rivers and streams has provided useful information to

fisheries and aquatic resource managers.

Continued fisheries research, coupled with sound fisheries management, vital educational programs, continued efforts to maintain and improve water quality, and wise use of the watersheds of Mississippi's waters, are necessary to ensure good fishing and good water for everybody.

The abundant natural resources, including fisheries resources, that make Mississippi the wonderful place it is are public trusts. Fisheries resources contribute quietly, yet very significantly, to Mississippi's well being. These natural resources seem to have a way of returning great dividends on our management investments. Mississippi's fisheries resources are, indeed more than "paying their keep." We have known for a long time that our fisheries resources are good places to play, but only recently have we realized that they are also places that pay