

Economic Impacts of Mississippi River Anglers' Expenditures on the Tennessee Economy for 2005

by

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Expenditures by anglers for goods and services, land, labor, capital equipment, and other materials enhance both the local economy and the local tax base. Two measures of economic benefits garnered by an economic region are the number of jobs created and the amount of personal income accruing to residents. These impact measures can be further broken down into *direct, indirect, and induced* (or *ripple*) effects.

Total economic impacts attributable to increased business activity are computed as the sum of the direct, indirect, and induced effects. These impacts are measured for total industry output, employment, total value added, and indirect business taxes.

1. *Direct* effects are those attributable specifically to the new expenditures in a region. For example, expenditures by anglers at a restaurant leads to the employment of waiters, cooks, and cashiers. These workers represent the direct employment impact of the expenditures.
2. *Indirect* effects arise from businesses' expenditures on raw materials, services, supplies, and other operating expenses, which help to support jobs in other local businesses. For example, a restaurant may see its sales expand due to anglers' expenditures, thus requiring more purchases from food services wholesalers and, potentially, greater accounting and legal services from other local firms. Note that only the *value added* via the local production process, not the total *retail sale*, gives rise to additional economic benefits for the community. Only the portion of the expenditure actually retained by the local vendor can be used in the calculation of the firm's indirect income impact on the *local* economy. It is for this reason that retail sales, in isolation, represent a poor measure of economic impact. Hence, when local businesses purchase merchandise for resale, most of the proceeds accrue to the community where the goods were manufactured. Thus, the size of a firm's indirect impact on local incomes depends primarily on the dollar value of locally purchased goods and services and whether or not these same goods and services are locally produced or imported into the community. In addition, the amount of indirect employment generated by the business firm will vary with the amount of under-utilization of workers and capacity existing in local businesses. Although the firm's payments to local vendors increase the amount of local business activity, they will not translate to significant increases in employment if local firms are currently

experiencing excess capacity. The model assumes that firms are operating at full capacity, so estimates of indirect effects may overstate economic impacts if firms were actually operating at less than full capacity. ("Full" capacity, in this sense, can be thought of as a "traditional" operating level, generally 70-80% of true plant capacity, thus allowing firms to expand operations in the short-run.)

3. *Induced*, or *ripple* effects are created as the new income generated by the direct and indirect effects is spent and re-spent within the local economy. For example, part of the wages received by a firm's employees will be spent on housing. When a restaurant employee rents an apartment in Tennessee, a portion of the rent payment will be used to pay local employees of the apartment complex. These employees will in turn spend a portion of their income in the local community on groceries, housing, etc., thus adding to the amount of local personal income attributable to the firm's activities. However, during each of these subsequent rounds of spending, a large portion of the income generated leaks out of the state economy through taxes, savings, and spending outside the state, thereby diminishing the increment to state income attributable to these firms.

For 2005, aggregate capital mean expenditures (fishing equipment) totaled close to \$6.2 million for surveyed Mississippi River anglers (Figure 1). The largest expenditure category was for *reels, rods, and rod-making equipment* at \$3.3 million, which comprised 53.2 percent of total capital expenditures (Table 1).

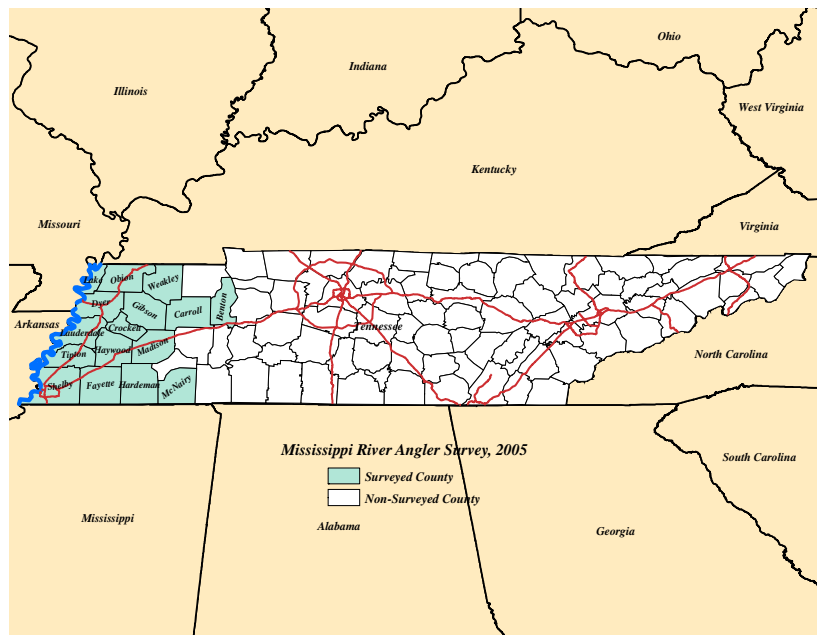


Figure 1. Counties surveyed for the Mississippi River Angler analysis.

The category *other equipment* was next at \$1.3 million (21.6 percent); followed by *artificial lures and flies* at \$0.9 million (14.1 percent); *lines, hooks, and sinkers* at \$0.6 million (9.2 percent); and *creel, fish bags, and nets* at \$0.1 million (1.9 percent).

Table 1. Estimated Capital Expenditures

Item	Mean Capital Expenditures
Reels, Rods, & Rod-making Equipment	\$3,302,199
Lines, Hooks, & Sinkers	\$569,970
Artificial Lures & Flies	\$876,469
Cree, Fish Bags, & Nets	\$120,331
Other Equipment	\$1,342,751
Total	\$6,211,720

The largest trip related expenditure was for *gas*, averaging \$19.46 per trip, followed by *food* at \$10.18 per trip, *boat rental/launch fees* at \$8.37 per trip, *lodging* at \$6.75 per trip, and *bait/ice* at \$6.30 per trip (Table 2). The mean number of trips was 110,961. Aggregate trip related expenditures totaled \$5.7 million for the Mississippi River anglers. Total expenditures by category were \$2.1 million for *gas*, \$1.1 million for *food*, \$0.9 million for *boat rental/launch fees*, \$0.7 million for *lodging*, close to \$0.7 million for *bait/ice*.

Table 2. Average and Total Trip-Related Expenditures

Item	Average Per Trip (n=95)	Total
Food	\$10.18	\$1,129,583
Lodging	\$6.75	\$748,987
Gas	\$19.46	\$2,159,301
Boat Rental/Launch	\$8.37	\$928,744
Bait/Ice	\$6.30	\$699,054
Total Per Trip	\$51.06	\$5,665,669

The estimated level of angler-related annual expenditures in 2005 dollars was \$11.8 million (Table 3). This expenditure financed close to 270 annual jobs. Total value added and indirect business taxes direct expenditures were estimated at close to \$9.7 million and \$1.8 million, respectively. Total impacts for the state's economy were estimated at over \$21.7 million in total industry output from anglers and angling related expenditures with an estimated total number of jobs at 370. Total value added estimated at close to \$15.8 million. Indirect business taxes from angler and angling related expenditures were estimated at over \$2.2 million. For the

economic indicator total industrial output, the estimated multiplier is 1.83. In other words, for every dollar the Mississippi River anglers spent on capital or trip related expenditures, an additional 0.83 cents is generated throughout the state's economy.

Table 3. Estimated Direct and Total Effects from Mississippi River Fishing-Related Mean Expenditures for Selected Counties in West Tennessee, 2005.

Economic Indicators	Direct	Total
Total Industrial Output ^a	\$11,877,388	\$21,733,576
Employment ^b	266	368
Total Value Added ^c	\$9,699,097	\$15,868,778
Indirect Business Taxes ^d	\$1,765,904	\$2,263,182

^aTotal Industrial Output – annual dollar value of goods and services that an industry produces.

^bEmployment – estimated number of total wage and salary employees (both full and part-time), as well as self-employed.

^cTotal Value Added – estimated employee compensation, proprietary income, other income, and indirect business taxes.

^dIndirect Business Taxes -- consists of excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses.