



Economic Impacts From Tennessee Valley Authority's Chickamauga Reservoir's Shoreline Property Owners Recreational Expenditures

Chickamauga Reservoir Facts: Named for a tribe that broke away from the Cherokee Nation, the reservoir stretches 59 miles upriver from the Chickamauga Dam to Watts Bar Dam. The reservoir has 784 miles of shoreline and roughly 36,240 acres of water. Flood storage capacity is estimated at 345,000 acre-feet. Hydroelectric generating capacity is 160,000 kilowatts. The lock is a major artery for barge traffic and an important source of economic commerce (1.2 million tons in 2006) for the area and state.

Approximately 2,125 Chickamauga Reservoir shoreline property owners with dock permits were surveyed June through September 2008. Approximately 76.5 percent (1,626) of the shoreline property owners were permanent residents; the remaining (499) were part-time. The annual mean expenditure for all fixed expenses was \$1,132.74 (Table 1). The top five mean fixed expenditures were watercraft purchases at \$5,028.54, followed by dock/dock maintenance (\$3,034.30), boat repairs/service (\$587.05), dock/marina fees (\$210.98), and vehicle repair/service (\$137.67). For annual variable expenses, the average mean expenditure across all categories was \$167.38 (Table 2). Likewise, for annual mean variable expenditures, the top five expenditures were food and beverage at \$977.85, followed by fuel for watercraft (\$949.74), fuel for vehicles (\$240.38), purchases of retail goods (\$164.81), and purchases of fishing supplies (\$131.59).



This analysis employed an input-output model, IMPLAN, to measure the economic impacts from Chickamauga Reservoir shoreline property owners. Numerous communities and/or towns around the lake are impacted economically. Using survey data, annual multi-county (counties surrounding the reservoir) and state-wide economic impacts were conducted from property owners along the reservoir (Table 3). For the

Table 1. Annual Mean Fixed Expenditures from Chickamauga Reservoir Shoreline Property Owners

Category	Average
<i>Annual Fixed Expenses</i>	
Watercraft Purchases	\$5,028.54
Dock/Dock Maintenance	\$3,034.30
Boat Repairs/Service	\$587.05
Dock/Marina Fees	\$210.98
Vehicle Repairs/Service	\$137.67
Fishing License/Fees	\$35.58
Private Land Access Fees	\$19.61
Hunting License/Fees	\$8.24
<i>Overall Average</i>	<i>\$1,132.74</i>

multi-county analysis, estimated direct and total impacts (economic activity) were \$24.9 million and \$46.9 million, respectively, as measured through total industry output. This impact financed more than 470 jobs. Total value added was estimated at \$29.1 million. For the state model, total impacts were estimated at \$52.3 million of economic activity. Estimated total impacts for value added were \$32.1 million. Estimated total number of jobs was over 500.

Multipliers measure the additional total industry output, employment, or total value added for an additional million dollars in economic activity. Total industry output (economic activity) multipliers ranged from 1.88 for the multi-county analysis and 2.10 for the state. For every dollar Chickamauga Reservoir shoreline property owners spent, an additional \$0.88 was generated throughout the multi-county analysis or \$1.10 throughout the state. Likewise, employment multipliers ranged from 1.81 for the multi-county

Table 2. Annual Mean Variable Expenses from Chickamauga Reservoir Shoreline Property Owners

Category	Average
<u><i>Annual Variable Expenses</i></u>	
Food & Beverages	\$977.85
Fuel for Watercraft	\$949.74
Fuel for Vehicle	\$240.38
Retail Goods	\$164.81
Fishing Supplies	\$131.59
Other Expenses	\$73.47
Entertainment	\$40.72
Hunting Supplies	\$34.74
Camping Supplies	\$22.91
Lodging Expenses	\$16.54
Guide/Outfitter Fees	\$8.01
Souvenirs/Gifts	\$6.51
Boat Rental Fees	\$4.32
Horseback Riding	\$4.19
Other Equipment Rentals	\$1.70
Tour Fees	\$0.59
<u><i>Overall Average</i></u>	<u><i>\$167.38</i></u>

analysis and 1.93 for the state. For every job created based on Chickamauga Reservoir shoreline property owners expenditures, an additional .81 to .93 jobs are created in other industries throughout the state.

For indirect impacts, the top five industries impacted were real estate, management of companies and enterprises, federal electric utilities, telecommunications, and radio/television broadcasting. Likewise, for induced impacts, owner-occupied dwellings, state and local education, real estate, health care professionals (doctors, dentists, etc.), and state/local non-education were the top five industries impacted.

Total Industry Output represents the estimated annual dollar value of production summed across all industries and is a measure of total economic activity. Employment represents the estimated number of total wage and salary employees (both full- and part-time), as well as self-employed. *Total Value Added* represents the estimated dollar value of wages and salaries including benefits, self-employed income, interests, rents, royalties, dividends, profits, plus excise and sales taxes.

Direct Impacts represent the estimated economic impacts of activities from Chickamauga Reservoir shoreline property owners from the survey conducted. *Total Impacts* are the sum of direct impacts, plus the estimated economic impacts from businesses (i.e., restaurants, lodging, fuel, retail sales, etc.) providing goods and services (*Indirect Impacts*), and increased expenditures of new household income (*Induced Impacts*) as a result of shoreline property owners' activities.

Table 3. Annual Estimated Economic Impacts from the Chickamauga Reservoir Shoreline Property Owners

	Total Industry Output ^a		Employment		Total Value Added ^a	
	<i>Direct</i>	<i>Total</i>	<i>Direct</i>	<i>Total</i>	<i>Direct</i>	<i>Total</i>
	<i>(Million \$)</i>		<i>(Number)</i>		<i>(Million \$)</i>	
Multi-County ^b	\$24.9	\$46.9	261	472	\$15.8	\$29.1
State	\$24.9	\$52.3	261	504	\$15.9	\$32.1

^a2008 dollars; ^bMulti-County region includes Bledsoe, Bradley, Cumberland, Hamilton, Loudon, Marion, McMinn, Monroe, Polk, Rhea, Roane, and Sequatchie counties.

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