

Estimated Statewide Economic Impacts of Off-Highway Vehicles: A \$3.4 Billion Industry



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Have you ever wondered how much economic impact a trip by off-highway enthusiasts will have on the economy of the state or the region attended? There are five stages of costs involved — trip preparation, driving to the site, on-site costs, driving home from the site, and recovering from the trip. These costs include such items as meals, lodging, fuel, repairs, and other miscellaneous expenses. Once services and/or items are purchased, the money spent pays for salaries, increases tax collections, and increases profits. Money is then spent on other goods and services. This analysis attempts to quantify the economic impacts resulting from Off-Highway Vehicle (OHV) activities.

Tennessee's state-wide economic impact analysis of the OHV industry is presented in Table 1. Per survey data, estimated economic impacts from OHV activities are close to \$3.43 billion in total economic activity, \$2.33 billion in value added, and over 52 thousand full- and part-time jobs. The estimated top ten sectors impacted as a result from OHV users and activities were *Vehicle Dealers & Service Stations, Miscellaneous Retail, Vehicle Repair & Services, Hotels & Lodging Places, Eating & Drinking, Wholesale Trade, Food Stores, Transportation Equipment, Real Estate, and Owner-Occupied Dwellings*.

The estimated average per trip expenditures for lodging, food & beverages, transportation to the OHV site, OHV (rental fees, repairs and service, trail use fees, plus fuel and oil), and other expenses are presented in Table 2. The food and beverages category has the largest average per trip expenditure followed by OHV, lodging, other expenses, and transportation to the OHV site. Within the food and beverages category (i.e., restaurant dining, food purchased at convenience stores, groceries purchased at food stores), restaurant dining has the largest average at close to \$35 per trip. Likewise, within the remaining categories the largest average per trip expenditures are \$50 for OHV repairs and services (OHV category), lodging at hotels, motels, etc., at \$34, hunting supplies at \$58 for the other expense category, and roughly \$37 dollars on fuel and oil for transportation to OHV sites.

Table 1. Estimated Economic Impacts from Off-Highway Vehicle Survey for Tennessee

	<i>Direct</i>	<i>Total</i>
	<i>(\$ billion)</i>	
Total Industry Output*	\$1.76	\$3.43
Total Value Added*	\$1.30	\$2.33
	<i>(number)</i>	
Jobs	29,800	52,300

**1998 Prices*

Table 2. Average OHV per Trip Expenditure

Lodging	\$17.83
Food & Beverages	\$26.72
Transportation To OHV Site	\$13.82
Off-Highway Vehicle	\$19.96
Other Expenses	\$14.63

DID You Know?

Economists often use computerized input-output models to derive multipliers. These models are very helpful for understanding the inter-relationships in a local economy. An input-output model which can be used to estimate the impacts of outdoor recreation is IMPLAN developed initially by the USDA's Forest Service and currently developed by Minnesota IMPLAN Group (MIG). This model is used in this analysis. IMPLAN contains the relationships between industries in a particular local economy through a transactions table. This dollar flow table lists all the sales and purchases made by the different sectors of the economy over a period of time. Once the dollar flow table is constructed, another table is then constructed to derive multipliers. This final table shows the total dollar amount change in each economic sector caused by a \$1 change in output in any particular sector. When multipliers are used, they can clearly show how attracting new visitor dollars into a region can stimulate considerable economic growth.

The estimated number of households in Tennessee with an OHV user is 259,240. Approximately 60.1% of that value, or 155,803 households, are active users (i.e., actually used an OHV for recreation “off road” in the last twelve months). The estimated average number of users per household is 2.14. The median number of OHV trips taken is 12.

Table 3 contains the average annual OHV related expenditure categories ranked in order of magnitude for Tennessee. The total average annual OHV related expenditure was \$6,647. Off-highway vehicles purchased includes ATVs, four wheelers, dirt bikes, dual sport motorcycles, four wheel drive trucks and jeeps, sport utility vehicles and rail/dune buggies. Support vehicles refers to trailers, car carriers, etc. Special tires, mufflers, engines, etc., are included in the modification/upgrades category. Other support equipment includes air compressors, pressure washers, welders, etc.

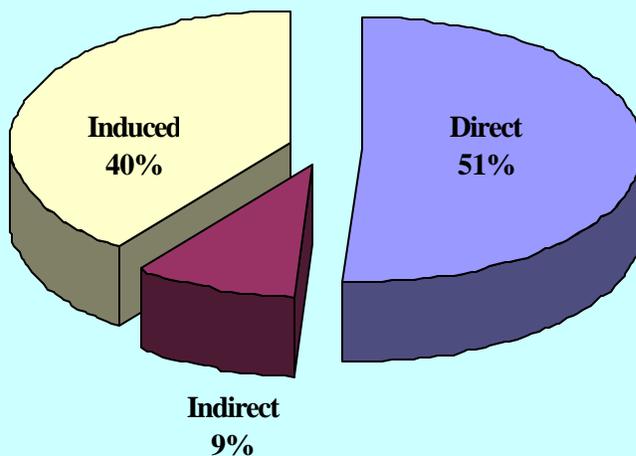
Table 3. Average OHV Expenditures in past 12 Months

OHVs Purchased	\$4,615
Support Vehicles Purchased	\$667
Repairs	\$366
Modification/Upgrades	\$321
Insurance	\$205
Routine Maintenance	\$194
Other Support Equipment	\$137
Riding Apparel	\$109
Club Membership	\$19
Other	\$14

Total Industry Output represents the estimated annual dollar value of production summed across all industries and is a measure of total economic activity. **Jobs** represent 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, interest, rents, royalties, dividends, profits, plus excise and sales taxes.

Direct Impacts represent the estimated economic impacts of off-highway vehicle recreational activities from the surveys conducted at each event site. **Total Impacts** is the sum of the direct impacts, plus the estimated economic impacts from businesses (i.e., restaurants, retail stores, lodging, gasoline, etc.) providing goods and services (indirect impacts), and increased expenditures of new household income (induced impacts) as a result of the events taking place.

How much of the impact is induced?



One billion seven hundred thousand dollars are spent by those participating in off-highway activities. Initially these dollars are used to purchase inputs creating another \$300 million dollars of economic activity. However, another \$1.3 billion dollars of economic activity is induced through these expenditures. The top ten sectors impacted through induced effects include: *wholesale trade, owner-occupied dwellings, state and local government education and no education, real estate, doctors and dentists, eating and drinking, hospitals, new residential structures, and banking*. Jobs created also follow a similar pattern. Of the 52,000 jobs created in the state by the off-highway vehicle sector, 19,000 are through induced effects, with nearly 30,000 created directly.

Estimated Economic Impacts differ by TWRA Regions of the State

The state was divided into the four TWRA regions — west, middle, plateau, and east. Information on expenditures by respondents in each of the regions were used to develop a regional set of expenditures. These expenditures per household were then multiplied times the number of households. Next, this value was multiplied by the median number of trips taken by households in each region to develop the direct impacts (Table 4).



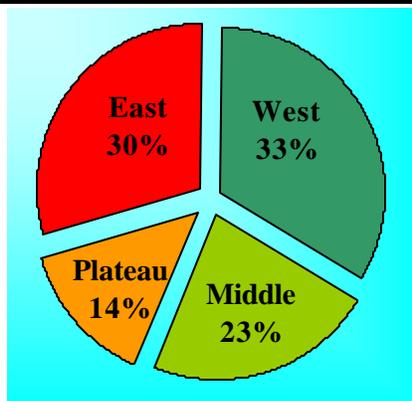
Table 4. Estimated Number of Households and the Median Number of Trips taken per Year by TWRA Region

TWRA Region	Number of Households	Trips per household
West	41,597	15.0
Middle	45,583	10.0
Plateau	28,121	13.3
East	40,422	13.8

Economic impacts from OHV activity varies by region (Table 5). The west has the largest estimated direct expenditures (\$600 million dollars). The east and middle TWRA regions' direct expenditures are estimated at \$500 and \$450 million dollars, respectively. The plateau TWRA region has the smallest level of expenditures estimated at \$270 million dollars. These direct expenditures result in an estimated 88 percent increase in economic activity in the west region accounting for \$1.1 billion. In the middle TWRA region, economic activity resulting from OHV totals \$867 million, an estimated 94 percent change in the economy. Two other sets of information provide information on the impact OHV has on each regions' economy. The total employ-

ment impact is 52 thousand jobs. The west TWRA region benefits claiming an estimated 33% of the jobs. The plateau's OHV expenditures result in 7.6 thousand jobs, or 14% of the total number of jobs created because the OHV industry exists.

Where are the jobs?



Total value added consists of wages and salaries, self-employed income, interests, rents, royalties, dividends, profits, and excise and sales taxes. OHV household expenditures for the state result in \$2.3 billion dollars in value-added with the west TWRA region accounting for an estimated \$784 million followed by the east, middle, and plateau TWRA regions (Table 6).

Table 5. Direct and Total Impacts and Total Industry Output Multipliers for the Off-Highway Vehicle sector by TWRA region.

TWRA Region	Direct	Total	TIO Multiplier
(\$ million)			
West	602.4	1,130.6	1.88
Middle	448.0	867.1	1.94
Plateau	271.2	472.1	1.74
East	512.0	950.2	1.86

Table 6. Total Value-Added from OHV Expenditures by TWRA Region

TWRA region	Direct	Indirect	Induced	Total
(\$ million)				
West	452.4	60.0	271.2	783.5
Middle	328.8	46.2	211.9	586.8
Plateau	199.9	23.2	99.2	322.4
East	373.1	51.8	221.3	646.2

Findings:

- An estimated 156 thousand Tennessee households participate in OHV activities.
- Total economic impacts from OHV activities in the state are estimated at \$3.4 billion. The expenditures for the state that take place in preparing for, participating in and recovering from OHV activities appear to have a multiplier of around 1.95. Each expenditure almost doubles in value when examining economic activity.
- Many of the expenditures do not necessarily occur onsite, but rather in preparing for and transporting to and from the event.
- For the state, average trip expenditures are greater for food and lodging and OHV categories. The remaining categories are split relatively equal.
- Close to 80 percent of the average OHV expenditures in the last 12 months are from OHV and support vehicle purchases.
- Economic impacts vary by TWRA regions. The west has the largest estimated direct expenditures (\$600 million) followed by the east, middle, and plateau regions.
- The middle TWRA region has the largest multiplier (1.94) followed by the west (1.88), east (1.86), and plateau (1.74) regions.

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