

THE ECONOMIC IMPACT OF TROUT FISHING ON THE LOWER MOUNTAIN FORK
RIVER
ON THE ECONOMY OF MCCURTAIN COUNTY, OKLAHOMA

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ABSTRACT

This paper provides an impact study of trout fishing on the Lower Mountain Fork River, located in McCurtain County, Oklahoma. Information provided includes population, employment, income, and sales tax data for McCurtain County. Expenditure data was collected via survey in 2010 as part of a previous study by Reilley (2011). Analysis of economic impact due to trout fishing activity on the county's economy utilizes IMPLAN Model multipliers.

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Introduction

Economic development efforts are of great concern to local leaders in Oklahoma. Often, estimates of potential impacts due to tourist activities are useful when analyzing economic development options. The overall purpose of this study is to measure the economic impact on McCurtain County of trout fishing on the Lower Mountain Fork River. Specifically, the goals of this study are to:

1. Provide basic economic data for McCurtain County;
2. Review some basic concepts of community economics;
3. Summarize the estimated direct economic activities due to trout fishing; and
4. Estimate the secondary impacts of trout fishing.

Basic expenditure data for this report were collected during survey efforts which occurred in 2010 (Reilley, 2011). Fishermen were interviewed on site at the Lower Mountain Fork River trout fishing areas. The total number of telephone surveys was 507. Of these 507 respondents, 484 were visitors to the area. The remaining 23 lived in McCurtain County.

This report addresses economic impacts of trout fishing in McCurtain County. There may be additional benefits and/or costs not addressed in this report. No recommendations will be made in this report. For example, this report does not address the opportunity costs associated with maintaining the Mountain Fork Fish Hatchery or trout habitat.

Basic Demographic and Economic Data

Before discussing the impacts of fishing activity in McCurtain County, it is useful to review some basic economic and demographic data for the county. Table 1 provides population estimates for cities and towns in McCurtain County. Total county population is shown to decrease from 34,402 in 2000 to 31,151 in 2010—a 3.6% decrease for the decade. This is relatively strong considering that the state’s population increased by 8.7% in the same time frame. Of the communities shown, only Garvin, Idabel and McCurtain increased in population for the ten years. Garvin realized the fastest growth and the largest increase in residents. Broken Bow saw the largest decline in population, though Haworth realized the largest rate of decline.

Table 2 shows McCurtain County employment data for 2001-2009. According to Table 2, county employment totaled 15,756 in 2009. Local government, farming, and manufacturing were the three largest employment sectors for McCurtain County in 2009. Labor force data from the Bureau of Labor Statistics for McCurtain County are listed in Table 3, and labor force data for Oklahoma are listed in Table 4. Unemployment rates for McCurtain County range from a low of 4.8% percent in 2000 to a high of 11.8% percent in 1991. The rate for 2010 is shown at 11.1%. Oklahoma’s unemployment rate for 2010 is shown at 7.1%.

Table 5 provides personal income data by major source from 2001 to 2009 for McCurtain County. Per capita personal income in 2009 was \$25,883 while total personal income in 2009 was about \$864 million. Note that the “adjustment for residence” for McCurtain County is currently positive. This indicates that some people commute from McCurtain County to work in other counties, and thus bring their income home with them.

Table 6 lists sales tax collections for communities in McCurtain County that collect a sales tax. For fiscal year 2010, the City of Idabel collected about \$3.1 million in sales tax at a

rate of 3.0%. Broken Bow collects the next largest amount of sales taxes, receiving \$1.8 million in FY 2010. Valliant collected over \$350,000 in retail sales collections in FY 2010. The remaining four communities all collected less than \$60,000 in sales taxes; listed in descending order, they are Wright City (\$54,540), Haworth (\$32,079), Garvin (\$28,425) and Millerton (\$26,765).

TABLE 1
POPULATION DATA FOR WAGONER COUNTY AND CITIES THEREIN, 1990, 2000,
2010

| | 1990 | 2000 | 2010 | %Change 2000-2010 |
|------------------|-------------|-------------|-------------|------------------------------|
| McCurtain County | 33,433 | 34,402 | 33,151 | -3.6% |
| Broken Bow | 3,961 | 4,230 | 4,120 | -2.6% |
| Garvin | 128 | 143 | 256 | 79.0% |
| Haworth | 293 | 354 | 297 | -16.1% |
| Idabel | 6,957 | 6,952 | 7,010 | 0.8% |
| McCurtain | 465 | 466 | 516 | 10.7% |
| Millerton | 234 | 359 | 320 | -10.9% |
| Smithville | 111 | 123 | 113 | -8.1% |
| Valliant | 873 | 771 | 754 | -2.2% |
| Wright City | 836 | 848 | 762 | -10.1% |

Sources: http://factfinder.census.gov/servlet/DTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF1_U&-CONTEXT=dt&-mt_name=DEC_2000_SF1_U_P001&-tree_id=4001&-redoLog=true&-all_geo_types=N&-_caller=geoselect&-geo_id=04000US40&-geo_id=16000US4009100&-geo_id=16000US4028700&-geo_id=16000US4033150&-geo_id=16000US4036750&-geo_id=16000US4044950&-geo_id=16000US4048600&-geo_id=16000US4068250&-geo_id=16000US4076650&-geo_id=16000US4082200&-search_results=16000US4076650&-format=&-_lang=en

TABLE 2
EMPLOYMENT BY MAJOR INDUSTRY IN MCCURTAIN COUNTY, 2001-2009
(Number of Jobs)

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Total employment | 17,661 | 16,952 | 16,185 | 16,305 | 16,160 | 16,293 | 16,108 | 16,059 | 15,756 |
| Wage and salary employment | 12,796 | 12,177 | 11,444 | 11,529 | 11,394 | 11,571 | 11,291 | 11,328 | 11,033 |
| Proprietors employment | 4,865 | 4,775 | 4,741 | 4,776 | 4,766 | 4,722 | 4,817 | 4,731 | 4,723 |
| Farm proprietors employment | 1,938 | 1,821 | 1,773 | 1,712 | 1,692 | 1,643 | 1,695 | 1,672 | 1,664 |
| Nonfarm proprietors employment | 2,927 | 2,954 | 2,968 | 3,064 | 3,074 | 3,079 | 3,122 | 3,059 | 3,059 |
| Farm employment | 2,240 | 2,099 | 1,974 | 1,932 | 1,881 | 1,796 | 1,837 | 1,827 | 1,802 |
| Nonfarm employment | 15,421 | 14,853 | 14,211 | 14,373 | 14,279 | 14,497 | 14,271 | 14,232 | 13,954 |
| Private employment | 12,632 | 12,158 | 11,548 | 11,567 | 11,437 | 11,628 | 11,342 | 11,348 | 11,070 |
| Forestry, fishing, and related activities | (D) | (D) | (D) | (D) | (D) | (D) | 675 | 680 | 623 |
| Mining | (D) | (D) | (D) | (D) | (D) | (D) | 32 | 58 | 91 |
| Utilities | 49 | 50 | 49 | 46 | 46 | 46 | 51 | 52 | 53 |
| Construction | 1,181 | 1,057 | 1,111 | 1,288 | 1,426 | 1,639 | 1,198 | 1,186 | 1,034 |
| Manufacturing | 3,462 | 3,317 | 2,522 | 2,233 | 2,060 | 1,913 | 1,783 | 1,836 | 1,801 |
| Wholesale trade | 255 | 237 | 238 | 239 | 224 | 243 | 231 | 214 | 205 |
| Retail trade | 1,685 | 1,576 | 1,506 | 1,618 | 1,611 | 1,526 | 1,512 | 1,500 | 1,493 |
| Transportation and warehousing | 386 | 572 | 589 | 594 | 604 | 606 | 598 | 598 | 542 |
| Information | 143 | 142 | 145 | 152 | 136 | 138 | 150 | 146 | 148 |
| Finance and insurance | 328 | 341 | 358 | 350 | 353 | 366 | 441 | 457 | 465 |
| Real estate and rental and leasing | 158 | 190 | 203 | 230 | 238 | 233 | 232 | 226 | 218 |
| Professional, scientific, and technical services | 489 | 513 | (D) | 579 | 578 | 566 | 577 | 530 | 471 |
| Management of companies and enterprises | 0 | 0 | (D) | 0 | 0 | 0 | 0 | 0 | 0 |
| Administrative and waste management services | 920 | 573 | 561 | 541 | 485 | 516 | 586 | 543 | 558 |
| Educational services | (D) | 83 | 74 | 51 | 52 | 65 | (D) | (D) | (D) |
| Health care and social assistance | (D) | 1,172 | 1,201 | 1,098 | 1,181 | 1,330 | (D) | (D) | (D) |
| Arts, entertainment, and recreation | (D) | 126 | 116 | 110 | 99 | 104 | 96 | 94 | 97 |
| Accommodation and food services | 666 | 648 | 712 | 720 | 629 | 657 | 661 | 676 | 732 |
| Other services, except public administration | 847 | 837 | 949 | 937 | 954 | 950 | 934 | 950 | 934 |
| Government and government enterprises | 2,789 | 2,695 | 2,663 | 2,806 | 2,842 | 2,869 | 2,929 | 2,884 | 2,884 |
| Federal, civilian | 157 | 164 | 153 | 151 | 147 | 149 | 143 | 142 | 141 |
| Military | 169 | 165 | 164 | 156 | 143 | 142 | 144 | 150 | 146 |
| State and local | 2,463 | 2,366 | 2,346 | 2,499 | 2,552 | 2,578 | 2,642 | 2,592 | 2,597 |
| State government | 292 | 291 | 278 | 314 | 305 | 304 | 332 | 331 | 327 |
| Local government | 2,171 | 2,075 | 2,068 | 2,185 | 2,247 | 2,274 | 2,310 | 2,261 | 2,270 |

(D): Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

SOURCE: Regional Economic Information System 1969-2009, v4.0.4, Table CA25N
<http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=5>

TABLE 3
LABOR FORCE DATA FOR MCCURTAIN COUNTY 1990-2010

| Year | Labor Force | Employment | Unemployment | Unemployment Rate, McCurtain |
|-------------|--------------------|-------------------|---------------------|-------------------------------------|
| 1990 | 13,936 | 12,665 | 1,271 | 9.1% |
| 1991 | 14,376 | 12,682 | 1,694 | 11.8% |
| 1992 | 14,800 | 13,497 | 1,303 | 8.8% |
| 1993 | 14,740 | 13,449 | 1,291 | 8.8% |
| 1994 | 14,954 | 13,573 | 1,381 | 9.2% |
| 1995 | 15,028 | 13,639 | 1,389 | 9.2% |
| 1996 | 14,901 | 13,492 | 1,409 | 9.5% |
| 1997 | 14,770 | 13,387 | 1,383 | 9.4% |
| 1998 | 15,232 | 13,965 | 1,267 | 8.3% |
| 1999 | 15,481 | 14,428 | 1,053 | 6.8% |
| 2000 | 14,852 | 14,137 | 715 | 4.8% |
| 2001 | 15,634 | 14,805 | 829 | 5.3% |
| 2002 | 14,908 | 13,896 | 1,012 | 6.8% |
| 2003 | 14,831 | 13,466 | 1,365 | 9.2% |
| 2004 | 14,686 | 13,549 | 1,137 | 7.7% |
| 2005 | 13,974 | 13,043 | 931 | 6.7% |
| 2006 | 14,023 | 13,136 | 887 | 6.3% |
| 2007 | 13,932 | 13,048 | 884 | 6.3% |
| 2008 | 14,066 | 13,142 | 924 | 6.6% |
| 2009 | 14,687 | 13,099 | 1,588 | 10.8% |
| 2010 | 15,266 | 13,570 | 1,696 | 11.1% |

Source: Bureau of Labor Statistics, Local Area Unemployment Statistics
<http://www.bls.gov/lau/>

TABLE 4
LABOR FORCE DATA FOR OKLAHOMA, 1990 to 2010

| Year | Labor Force | Employment | Unemployment | Unemployment Rate |
|-------------|--------------------|-------------------|---------------------|--------------------------|
| 1990 | 1,520,852 | 1,434,566 | 86,286 | 5.7% |
| 1991 | 1,520,524 | 1,426,240 | 94,284 | 6.2% |
| 1992 | 1,526,930 | 1,432,081 | 94,849 | 6.2% |
| 1993 | 1,542,973 | 1,450,076 | 92,897 | 6.0% |
| 1994 | 1,556,432 | 1,469,487 | 86,945 | 5.6% |
| 1995 | 1,562,793 | 1,490,602 | 72,191 | 4.6% |
| 1996 | 1,580,815 | 1,514,880 | 65,935 | 4.2% |
| 1997 | 1,610,541 | 1,543,105 | 67,436 | 4.2% |
| 1998 | 1,640,979 | 1,569,498 | 71,481 | 4.4% |
| 1999 | 1,650,302 | 1,590,838 | 59,464 | 3.6% |
| 2000 | 1,661,045 | 1,609,522 | 51,523 | 3.1% |
| 2001 | 1,676,254 | 1,614,627 | 61,627 | 3.7% |
| 2002 | 1,683,186 | 1,602,118 | 81,068 | 4.8% |
| 2003 | 1,694,085 | 1,598,614 | 95,471 | 5.6% |
| 2004 | 1,689,746 | 1,605,641 | 84,105 | 5.0% |
| 2005 | 1,705,506 | 1,628,655 | 76,851 | 4.5% |
| 2006 | 1,721,171 | 1,650,070 | 71,101 | 4.1% |
| 2007 | 1,736,444 | 1,665,819 | 70,625 | 4.1% |
| 2008 | 1,738,846 | 1,674,485 | 64,361 | 3.7% |
| 2009 | 1,752,772 | 1,636,917 | 115,855 | 6.6% |
| 2010 | 1,754,690 | 1,630,925 | 123,765 | 7.1% |

Source: Bureau of Labor Statistics, Local Area Unemployment Statistics
<http://www.bls.gov/lau/>

TABLE 5
PERSONAL INCOME BY MAJOR SOURCE FOR MCCURTAIN COUNTY, 2001-2009

| (in thousands) | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Wage and salary disbursements | \$311,801 | \$301,703 | \$294,210 | \$309,315 | \$321,326 | \$346,745 | \$338,237 | \$341,352 | \$326,617 |
| Supplements to wages and salaries | \$73,019 | \$75,845 | \$78,754 | \$84,121 | \$90,466 | \$95,389 | \$92,382 | \$96,453 | \$98,556 |
| Farm proprietors' income | \$42,842 | \$41,205 | \$23,630 | \$43,201 | \$43,791 | \$16,661 | \$9,092 | \$8,312 | \$2,213 |
| Nonfarm proprietors' income | \$75,221 | \$79,353 | \$86,942 | \$93,692 | \$87,109 | \$84,785 | \$83,900 | \$71,005 | \$67,991 |
| Earnings by place of work | \$502,883 | \$498,106 | \$483,536 | \$530,329 | \$542,692 | \$543,580 | \$523,611 | \$517,122 | \$495,377 |
| less: Contributions for government social insurance | -\$51,328 | -\$51,498 | -\$51,412 | -\$55,174 | -\$58,870 | -\$63,189 | -\$60,047 | -\$60,726 | -\$60,179 |
| plus: Adjustment for residence | -\$6,265 | -\$4,544 | -\$1,774 | -\$1,975 | -\$1,513 | -\$4,226 | \$2,640 | \$5,015 | \$7,457 |
| Net earnings by place of residence | \$445,290 | \$442,064 | \$430,350 | \$473,180 | \$482,309 | \$476,165 | \$466,204 | \$461,411 | \$442,655 |
| plus: Dividends, interest, and rent | \$92,786 | \$77,531 | \$73,707 | \$79,127 | \$77,482 | \$84,380 | \$106,320 | \$115,801 | \$110,503 |
| plus: Personal current transfer receipts | \$164,062 | \$181,607 | \$192,703 | \$203,775 | \$217,291 | \$238,822 | \$257,834 | \$280,699 | \$310,564 |
| Personal income | \$702,138 | \$701,202 | \$696,760 | \$756,082 | \$777,082 | \$799,367 | \$830,358 | \$857,911 | \$863,722 |
| Population (persons) | 34,030 | 33,915 | 33,773 | 33,475 | 33,458 | 33,467 | 33,472 | 33,489 | 33,370 |
| Per capita personal income (dollars) | \$20,633 | \$20,675 | \$20,631 | \$22,586 | \$23,226 | \$23,885 | \$24,808 | \$25,618 | \$25,883 |

SOURCE: Bureau of Economic Analysis, <http://www.bea.gov/iTable/iTableHtml.cfm?reqid=70&step=30&isuri=1&7028=-1&7031=40000&7022=10&7023=4&7024=NAICS&7026=40089&7027=-1&7001=610&7029=32&7032=40000>

TABLE 6
SALES TAX COLLECTION BY TOWN AND CITY FOR MCCURTAIN COUNTY, FY 2005-2010

| | Sales Tax Rate | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-------------|-----------------------|-------------|-------------|-------------|-----------------------------|-------------|-------------|
| Broken Bow | 2.5% | \$1,593,358 | \$1,692,000 | \$1,761,106 | \$1,737,412 | \$1,830,833 | \$1,761,344 |
| Garvin | 3% | \$28,011 | \$26,461 | \$41,254 | \$35,371 | \$26,717 | \$28,425 |
| Haworth | 3.5% | \$21,796 | \$22,546 | \$23,552 | \$27,473 | \$27,346 | \$32,079 |
| Idabel | 3% | \$2,720,568 | \$2,877,735 | \$2,996,550 | \$3,066,118 | \$3,194,020 | \$3,122,069 |
| Millerton | 2% | \$14,685 | \$15,572 | \$15,465 | ⁽¹¹⁾ \$18,529.00 | --- | --- |
| Millerton | 3% | --- | --- | --- | ⁽¹⁾ \$496.00 | \$27,279 | \$26,765 |
| Valliant | 3% | \$285,730 | \$303,730 | \$293,799 | \$319,171 | \$374,118 | \$357,060 |
| Wright City | 3% | \$103,752 | \$91,885 | \$78,231 | \$58,776 | \$103,112 | \$54,540 |

^(*) Number of months at which tax was collected at the given rate.

SOURCE: Oklahoma Tax Commission, City Sales Tax Ledger Reports. Fiscal Year Ended June 30, 2005-2010.

Economic Impact of Trout Fishing in McCurtain County

Defining Economic Impact

An economic impact study attempts to place a dollar value on a particular event, business, or sector of an economy. The effects of a particular activity, however, are threefold. **Direct impacts** include the direct or actual revenues generated by the activity itself, as well as spending by participants at locations throughout the community. For example, the direct impacts of a carnival would include revenues from admissions, concessions, souvenir sales, and ticket sales, as well as expenditures by carnival-goers at local restaurants and motels. **Indirect impacts** include additional input purchases made by local businesses as a result of the event. For instance, because carnival-goers ate at local restaurants, the restaurants had to place larger orders with their suppliers and had to bring in extra employees to cover the additional activity. Finally, **induced impacts** are created when local business-owners, suppliers and employees spend the additional income that they were able to earn as a result of the event. Indirect and induced impacts are also referred to as multiplier effects. The idea is that a certain fraction of the direct earnings by event coordinators and by local businesses is re-spent within the local economy. Furthermore, recipients of this revenue will re-spend a fraction of it locally, and so on. With each round of spending, the total amount re-spent diminishes. Eventually, a total impact on the economy can be determined. Thus, the original direct effects are *multiplied* throughout the economy.

Clearly, the multiplier process in an economy is a complex one that is not easily measured firsthand. Most organizations that perform economic impact studies utilize some computer model to estimate multiplier effects. IMPLAN (MIG, Inc.) is a very common example of such a model, and it is used for the analysis in this report. By identifying the county and sector of the

economy in question, the modeler is able to produce a multiplier for the event. For instance, if the aforementioned carnival produced \$100,000 in direct effects and the multiplier for the event was determined to be 1.5, then total economic effects of the carnival would be \$150,000, and indirect and induced effects would equal \$50,000.

The Economic Impacts of Trout Fishing

As mentioned in the previous section, a survey was administered to visitors to the Lower Mountain Fork River in 2010. Personal interviews with the fishermen were followed up with telephone surveys. A total of 507 telephone surveys were completed. The survey was conducted as part of a separate study (Reilley, 2011); however, questions related to personal expenditures were asked and make it possible to analyze the economic impacts of such expenditures.

Of the 507 surveys, 23 respondents (4.5%) reported that they were residents of McCurtain County. This is significant, because the expenditures of these participants will not be counted as economic impact of fishing on the Lower Mountain Fork. The reason for excluding these responses is that any expenditure by these participants within the county would have taken place regardless of the availability of fishing in the river. Column 2 of Table 7 presents expenditure information as reported in the survey by the *non-local* survey respondents. In addition, the telephone survey asked respondents what percentage of their trip-related expenditures occurred within 25 miles of the Lower Mountain Fork River. This was to account for the fact that many anglers might purchase supplies near their home and transport them to the river. Direct expenditures in Table 7 represent those reported by the non-local visitors multiplied by the percentage of purchases made within 25 miles of the river. Lodging expenses were

addressed differently, as it was assumed that all lodging expenses were within McCurtain County.

Direct spending are summarized in Table 7. Total reported expenditures of non-local visitors were \$232,154. The largest category of expenditures was for lodging, at \$98,548. Food and beverage represented an additional \$45,770 of expenses, and transportation expenses were reported to be \$35,255. The direct expenditures generate additional economic activity in McCurtain County, as described above as indirect and induced impacts. The sum of the indirect and induced impacts across all categories was \$299,076. The total impact, based upon the survey responses, was \$531,230.

It is assumed that this sub sample of visitors was representative of all fishermen who fished the Lower Mountain Fork River in 2010, implying that the expenditures of this sub sample can be multiplied to represent the expenditures of all visitors to the area in 2010.

Using a traditional “car count” method, ODWC predicts annual attendance of 23,825. If 4.5% of these were local residents, then the ODWC estimate suggests that the number of out-of-county visitors per year is 22,744. This value will represent the annual visitors in this report. See Table 8 for a summary of this visitor count information.

Using the annual visitors estimate, if the 484 non-local survey respondents are representative of 22,744 visitors for 2010, then their expenditures can be scaled up in order to represent a total amount for the year. These estimates are shown in Table 9. (See Appendix A for a detailed explanation of calculations.) Annual direct spending by visitors within various categories is estimated to total \$10,909,383 (spending by local fishermen is *not* included in this total). After multipliers are applied, the total economic impact is estimated at about \$25 million. (See Table 9).

County Sales Tax Impacts

Some of the local spending by visitors to the Lower Mountain Fork River will be subject to both a county sales tax and a city sales tax. (Since there are several cities near the Lower Mountain Fork River in which visitors could have shopped and no data is available to allocate sales to these communities, no attempt is made to estimate city sales tax collections.) Specifically, direct spending with lodging, food and beverage, retail establishments, and “other” will be treated as subject to sales tax. A *portion* of the induced impacts will also be subject to sales tax (indirect impacts represent the purchase of inputs by businesses, which are not subject to sales tax collections). For McCurtain County, the ratio of retail sales to county personal income is 30.1%¹. Given this, 30.1% of all induced impacts will be treated as subject to sales tax. The results of these calculations are located in Table 10.

Based on the above assumptions, total sales subject to a sales tax in 2010 were \$8,651,629. In that year, McCurtain County collected a 0.15% sales tax, suggesting that fishing activity in the Lower Mountain Fork River supported the collection of \$129,774 in county sales taxes.

¹ This represents the proportion of personal income spent on items subject to sales tax in McCurtain County.

TABLE 7
SPENDING REPORTED BY NON-LOCAL SURVEY RESPONDENTS

| | Direct Spending | Indirect & Induced Impacts | Total Visitor Impact |
|-------------------|------------------|----------------------------|----------------------|
| Lodging | \$98,548 | \$129,097 | \$227,645 |
| Food and Beverage | \$45,770 | \$59,073 | \$104,843 |
| Transportation | \$35,255 | \$44,180 | \$79,435 |
| Retail | \$23,612 | \$30,457 | \$54,069 |
| Services | \$8,349 | \$10,897 | \$19,245 |
| Entertainment | \$10,467 | \$13,955 | \$24,422 |
| Other | \$10,152 | \$11,418 | \$21,570 |
| Total | \$232,154 | \$299,076 | \$531,230 |

TABLE 8
ESTIMATE OF TOTAL ANNUAL VISITORS (FISHERMEN) TO AREA

| | Survey Sample | Total Annual |
|-----------------|---------------|--------------|
| Total Fishermen | 507 | 23,825 |
| Local | 23 | 1,081 |
| Non-local | 484 | 22,744 |

TABLE 9
ESTIMATED ANNUAL DIRECT IMPACT OF SPENDING BY VISITING FISHERMEN*

| | Direct Local Spending | Indirect and Induced Impact | Total Expenditure Impact |
|--------------------------|-----------------------|-----------------------------|--------------------------|
| Lodging | \$4,630,979 | \$6,066,563 | \$10,697,542 |
| Food & Beverage | \$2,150,817 | \$2,775,982 | \$4,926,799 |
| Transportation | \$1,656,723 | \$2,076,091 | \$3,732,815 |
| Retail | \$1,109,575 | \$1,431,227 | \$2,540,802 |
| Services | \$392,330 | \$512,053 | \$904,383 |
| Entertainment | \$491,876 | \$655,766 | \$1,147,642 |
| Other | \$477,083 | \$536,548 | \$1,013,631 |
| Total (As Summed) | \$10,909,383 | \$14,054,231 | \$24,963,614 |

* Spending by fishermen who live in McCurtain County is NOT included in this expenditure data.

TABLE 10
MCCURTAIN COUNTY SALES TAX IMPACTS

| | Direct Exp. Subject to Tax | Induced Exp. Subject to Tax* | Total Exp. Subject to Tax | County Tax Collections at 0.15% |
|-------------------|-------------------------------|---------------------------------|------------------------------|------------------------------------|
| Lodging | \$4,630,979 | \$151,973.17 | \$4,782,952 | \$71,744 |
| Food & Beverage | \$2,150,817 | \$64,724.16 | \$2,215,541 | \$33,233 |
| Retail | \$1,109,575 | \$47,302 | \$1,156,877 | \$17,353 |
| Other | \$477,083 | \$19,176 | \$496,259 | \$7,444 |
| Total (As Summed) | \$8,368,454 | \$283,175 | \$8,651,629 | \$129,774 |

* For McCurtain County, the ratio of retail sales to county income is 30.1%, to reflect the level of consumption subject to retail sales tax.

Summary

The 2010 annual economic impact of trout fishing in the Lower Mountain Fork River has been estimated in this report. Expenditure data from a 2010 survey of fishermen were used to estimate a total expenditure impact on McCurtain County. The economic impact is estimated to be almost \$25 million. This translates into annual county sales tax collections of \$129,774.

Other benefits and/or costs may exist which were not included in this study. No recommendations have been made regarding the information in this report. For further information about this report, contact the authors.

REFERENCES

MIG, Inc. IMPLAN System Version 3.0 (software, 2008 data), 502 2nd Street, Suite 3010, Hudson, WI 54016. www.implan.com

Reilley, Michael. 2011. Essays on Recreational Demand for Trout Fishing on the Lower Mountain Fork River and Municipal Water Conservation. M.S. Thesis. Oklahoma State University.

APPENDIX A

The annual visitors estimate will be used as an example to show how expenditure data as reported by non-local survey respondents is expanded to represent expenditure data from all non-local visitors. This example will focus on lodging expenditures, but the method applies to any category of expenditure.

Non-local survey respondents = 484
Annual non-local visitors (low estimate) = 22,744

Expenditures reported for lodging by survey respondents = \$98,548
Expenditures for lodging for all annual visitors = unknown, denoted as L

If it is assumed that survey respondents are representative of all annual visitors, then the ratio of the survey visitor count to annual visitor count should equal the ratio of survey lodging expenditures to annual lodging expenditures, as shown in equation (1) below.

$$(1) \quad \frac{484}{22,744} = \frac{\$98,548}{L} \quad \text{solving for L}$$

$$(2) \quad L = \$98,548 \times \frac{22,744}{484} = \$4,630,941.55^*$$

In general, the equation for converting survey expenditures to annual expenditures is represented by equation (3).

$$(3) \quad \text{Annual Expenditures} = \text{Survey Expenditures} \times \frac{\text{Annual Non-local Visitor Count}}{\text{Survey Non-local Visitor Count}}$$

* Note: this total may vary by a few dollars from what was shown in the report due to rounding differences.