

**ECONOMIC IMPACT ANALYSIS OF  
NONCONSUMPTIVE WILDLIFE-RELATED  
RECREATION IN ARIZONA**

**May 2003**

Conducted for the Arizona Game and Fish Department

by Southwick Associates

in conjunction with the Responsive Management project, *Arizona Residents'  
Attitudes Toward Nongame Wildlife*

## **Introduction**

This project assessed the 2001 economic contributions of watchable wildlife recreation in Arizona, statewide, by county and by specific types of activity. Resident and non-resident impacts were considered. Only the economic effects of watchable wildlife activities occurring within Arizona were considered. This report measures the impact of watchable wildlife recreation expenditures on Arizona industries and individuals (in dollar terms) to produce estimates of the total economic benefits created in 2001. This project expands on the *The 2001 Economic Benefits of Watchable Wildlife Recreation in Arizona* (Southwick Associates, Inc., 2003), conducted for the Arizona Game and Fish Department by dividing statewide impacts from that report into county-specific results based on survey data produced by Responsive Management.

## **I. Data Sources and Methods**

The methods used to generate the economic impact estimates of watchable wildlife recreation activities in Arizona are separated into three stages. The stages entailed:

- 1) Tabulating the expenditures made by watchable wildlife recreationists (age 16 years and older) from the *2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation* (hereinafter referred to as the *National Survey*);
- 2) Disaggregating the expenditures into retail, wholesale, and manufacturer categories;
- 3) Generating the economic impact estimates by applying the multipliers from the Regional Input-Output Modeling System (RIMS) model to the adjusted expenditures;
- 4) Calculating state sales tax, state income tax, and federal income tax revenues; and
- 5) Calculating the percentage of expenditures and impacts created at the county level, and by type of activity.

### *Source of Expenditure Data*

Recreationists' expenditures were obtained from the *National Survey* (which is conducted approximately every 5 years by the U.S. Fish and Wildlife Service and the U.S. Bureau of the Census). The *National Survey* provides data required by natural resource management agencies, industry, and private organizations at the local, state, and national levels to assist in optimally managing natural resources. The *National Survey* is funded through excise taxes on hunting and fishing equipment through the Federal Aid in Sport Fish and Wildlife Restoration Act.

Recreationists' expenditures were categorized into resident and non-resident files. Both included information on travel-related categories, such as food and lodging, and equipment expenditures,

such as guidebooks and binoculars. Together, the resident and non-resident files represent all expenditures made in Arizona in 2001.

### *Source of Participation Data*

Information on participants per county and per activity were obtained from the Responsive Management survey regarding Arizona wildlife viewing activities. This survey provided the percentage of each county's residents who participate in wildlife watching, the counties where their activities took place, and also estimated the percentage of statewide expenditures made in each county. This information was used to assign the statewide economic impacts from Southwick (2003) to specific counties.

### *Margins*

Retail sales were separated into manufacturing, wholesale, and retail sub-categories because economic impact analyses treat each segment as separate industries. The amount of each retail sale attributed to each segment is known as a *margin*.

A margin is the percentage, or mark-up, of a sale attributable to either the manufacturing, wholesale, or retail sector. For example, 70% of the final retail dollar value of a spotting scope sale may be attributed to the manufacturer, 5% to the wholesaler, and 25% to the retailer. This means that the manufacturing industry has earned 70% of the final retail price, the wholesaler accrued 5% of the sale, and the retailer received 25%. Because there are no wholesale or manufacturing activities in the service sector, services are not subjected to the above process.

Data used to calculate trade margins are from the U.S. Department of Commerce, Census of Trade series surveys (1999). These data sources contain national sales figures for most retail and wholesale industry sectors as well as gross margins. A gross margin is the revenue remaining after the cost of the goods sold is subtracted. To derive margins, each wholesale and retail industry's gross margin was divided by its total sales. This produces the typical price mark-up for that industry. Next, two formulas are applied to estimate the value added (price mark-up) for each sector:

$R/(1+R)$  = retail margin, where R = retail mark-up.

$W/\{(1+W)(1+R)\}$  = wholesale margin, where W = wholesale mark-up.

These formulas estimate the percentage of a product's final selling price that accrues to each sector. The manufacturing margin is derived by summing the retail and wholesale margins and subtracting the total from 100%.

### *The Input-Output Model*

The estimate of the economic impacts were derived from the data using RIMS-II. RIMS-II was developed by the U.S. Department of Commerce, Bureau of Economic Analysis, for primary use by the Federal government.

Input-output models, such as RIMS-II, describe how sales in one industry impact other industries. For example, once a recreationist makes a purchase, the retailer buys more merchandise from wholesalers, which buy more from manufacturers, which, in turn, purchase new inputs and supplies. In addition, the salaries and wages paid by these businesses stimulate more benefits: the first purchase creates numerous rounds of purchasing. Input-output analyses track how the various rounds of purchasing benefit other industries and generate economic benefits.

The relationships between industries are explained through multipliers. For example, an income multiplier of 0.09 for industry X would indicate that for every dollar received by Industry Z, 9 cents would be paid by Industry Z to industry X for its products or services. The RIMS-II model provides multipliers for all major industries in the U.S. The multipliers include direct, indirect, and induced effects.

The RIMS-II model includes output, earnings and employment multipliers. The **output** multiplier measures the total economic effect from economic activity created by the original retail sale. The **earnings multiplier** measures the total salaries and wages generated from the economic activity created by the original retail sale. The **employment** multiplier estimates the number of jobs supported by the economic activity resulting from the original retail sale.

To apply the RIMS-II model, expenditures are each matched to the appropriate output, earnings, and employment multipliers. For example, dollars attributed to gasoline refining are multiplied separately by the earnings, output, and employment multipliers specific to gasoline refinement. The resulting estimates describe the salaries and wages, total economic effects, and jobs supported by the refining industry as a result of fuel purchases made during watchable wildlife recreational activities. This same process is repeated for all reported expenditures. After all expenditures and multipliers have been applied together, the manufacturing, wholesale, and retail results for each category are summed together.

### *Calculation of Tax Revenues*

State sales tax estimates are based on state general and fuel sales tax rates. Sales tax revenues are calculated by multiplying all retail purchases, except fuel, by the 2001 state tax rate (excluding local and city taxes). Sales taxes were not calculated for excluded items (guide fees, public land access fees, memberships and dues to organizations). Sales tax revenues were added to fuel tax revenues which were determined by multiplying total fuel purchases by the 2001 state fuel tax rate. Because the *National Survey* does not include detailed information on where food was purchased, it was assumed that residents purchased food from both restaurants and grocery stores, with one-third assigned to restaurants, whereas it was assumed that non-residents

purchased most of their food at restaurants within the state. As groceries are exempt from sales taxes, sales taxes were not applied to grocery sales estimated in this report.

State income tax revenues were calculated by dividing the total income generated by recreationists' expenditures by the total number of jobs supported by recreationists' expenditures. The result was the average income per job. Next, the state standard deduction was subtracted and the remaining amount was multiplied by the appropriate 2001 state income tax rate. The results were then multiplied by the total jobs to derive the final income tax estimate.

Federal income tax revenues were calculated by dividing the total income generated by recreationists' expenditures by the total number of jobs supported by recreationists' expenditures. The result was the average income per job. From this, a standard deduction of \$3,980 was subtracted. The applicable tax rate was then applied according to the 2001 IRS tax schedule for single filers to determine the average tax paid per job. Finally, the average tax paid per job was multiplied by the total number of jobs to determine the total Federal income tax revenue generated by recreationists during 2001.

## **Statewide Results**

### *Retail Sales*

The expenditure figures in Table 1 describe the total statewide retail sales generated from 2001 watchable wildlife recreation within specific categories of goods and services. In terms of trip expenditures, residents' largest amount of trip expenditure was on food, drink, and refreshments (\$33.2 million), followed by private transportation (mostly gasoline, \$28.2 million). Similarly, non-residents' largest amount of trip expenditure was on food, drink, and refreshments (\$76.5 million), but lodging was second (\$68.5 million).

The largest equipment expenditures by Arizona residents were for off-road and four-wheel drive vehicles (\$225.0 million), followed by boats of all types (\$111 million) and cameras (\$49 million). Note that equipment expenditures are comprised of expenditures that may have been made for residential activities (i.e., those activities that are undertaken within 1 mile of home) and/or non-residential activities (i.e., those activities that are undertaken farther than 1 mile of home).

**Table 1. Expenditures Made by Residents and Non-Residents Participating in Watchable Wildlife Recreation Statewide in 2001 (Participants 16 Years Old and Older)**

	<b>Residents</b>	<b>Non-Residents</b>	<b>Total</b>
<b>Trip Expenditures</b>			
Food	\$33,158,867	\$76,523,656	\$109,682,523
Lodging	\$15,317,068	\$68,511,041	\$83,828,109
Public transportation	\$905,018	\$27,780,815	\$28,685,834
Private transportation	\$28,246,411	\$41,284,636	\$69,531,047
Guide fees	\$1,108,307	\$1,193,379	\$2,301,686
Public land access fees	\$1,910,195	\$3,193,743	\$5,103,938
Private land access fees	\$19,844	\$338,794	\$358,638
Equipment rental	\$278,148	\$340,400	\$618,548
Boat fuel	\$59,518	\$436,625	\$496,143
Other boat costs	\$28,383	\$2,944,163	\$2,972,546
Heating and cooking fuel	\$473,839	\$624,385	\$1,098,224
<b>Equipment Expenditures</b>			
Binoculars, scopes	\$8,824,125	\$0	\$8,824,125
Film and developing	\$16,119,378	\$1,284,450	\$17,403,827
Cameras	\$48,989,431	\$0	\$48,989,431
Day packs, special clothing	\$4,472,909	\$25,205	\$4,498,114
Commercially prepared bird food	\$27,098,836	\$139,480	\$27,238,317
Other bird food	\$8,886,351	\$266,029	\$9,152,381
Food for other wildlife	\$1,536,726	\$0	\$1,536,726
Nest boxes, feeders	\$8,385,498	\$319,095	\$8,704,592
Other special equipment	\$1,434,335	\$419,717	\$1,854,052
Tents, tarps	\$6,299,700	\$42,356	\$56,342,056
Backpacking equipment	\$910,151	\$0	\$910,151
Other camping equipment	\$11,544,625	\$0	\$11,544,625
Magazines and books	\$3,790,471	\$151,146	\$3,941,617
Membership dues, contributions	\$12,360,127	\$368,306	\$12,728,433
Other equipment	\$1,673,472	\$0	\$1,673,472
Off-road and 4WD vehicles, campers, motor homes	\$224,853,208	\$0	\$224,853,208
Boats	\$111,004,758	\$0	\$111,004,758
Cabin	\$0	\$0	\$0
Other equipment	\$0	\$0	\$0
Land purchases	\$0	\$0	\$0
Land leases	\$0	\$0	\$0
Plantings	\$14,840,573	\$0	\$14,840,573
<b>Total Trip and Equipment Expenditures</b>	<b>\$594,530,274</b>	<b>\$226,187,421</b>	<b>\$820,717,695</b>

Total resident expenditures for watchable wildlife recreation equals \$594.5 million. Total non-resident expenditures equal \$226.2 million and may be more important to some because these dollars represent new dollars brought into the state economy by out-of-state visitors.

Table 2 shows average amount spent per day by recreationists on residential (within 1 mile of home) and non-residential (farther than 1 mile from home) activities, as well as an average amount spent annually per participant. Because the *National Survey* does not collect total days of participation broken down into residential (within 1 mile of home) and non-residential activities (farther than 1 mile from home), the residential per day figure is estimated based on the number of days that the individual spent observing wildlife. The non-residential per day figure is estimated by totaling the travel expenses plus several equipment items that would be used away from home: binoculars, clothing, camping gear, backpacks and daypacks, and vehicles, and one-half of cameras, and film and developing. The residential per day figure is estimated by totaling the remaining equipment items. Also, because purchased land may be used for visiting or as a homesite, 50% of its value was assigned to both the residential and non-residential activity estimates.

**Table 2. Average Expenditures for Watchable Wildlife Recreationists in Arizona in 2001 (Participants 16 Years Old and Older)**

	Residents	Non-Residents	Total
<b>Avg. by Participant</b>			
on residential activities, annually	\$75.29	NA	NA
on non-residential activities, annually	* \$1,900.61	\$616.02	** \$1,158.59
<b>Avg. per Day, per Participant</b>			
on non-residential activities	*** \$208.85	\$105.89	**** \$161.22
<b>Total Spent by Recreationists</b>			
on residential activities	\$80.0 million	***** \$1.7 million	\$81.7 million
on non-residential activities	\$514.5 million	\$224.5 million	\$739.0 million
<b>Total</b>	<b>\$594.5 million</b>	<b>\$226.2 million</b>	<b>\$820.7 million</b>
<p>* 56% of non-residential expenditures made by state residents was for vehicles or boats. If these items were removed from the equation, the average annual expense would be \$659.98 per resident annually.</p> <p>** If boats and vehicles were removed from the equation, the average expense would be \$632.07 per participant annually.</p> <p>*** If boats and vehicles were removed from the equation, the average per-day expense would be \$72.52 per resident.</p> <p>**** If boats and vehicles were removed from the equation, the average per-day expense would be \$87.96 per participant.</p> <p>***** Includes bird seed, other wildlife feed, nest boxes, membership dues, and other items typically purchased in one's state of residence, but reported purchased in Arizona by out-of-state residents.</p> <p>Note: numbers above may not appear to sum correctly due to rounding.</p>			

Once boats and vehicles are removed from the equation, residents on average spend less for a day of activity than do non-residents when residents travel away from home to view, feed or photograph wildlife. Residents spend more annually, but that most likely reflects that a higher proportion of their overall annual activities occur in Arizona compared to non-residents.

#### *Total Economic Effect (Output)*

Original expenditures made by watchable wildlife recreationists generate rounds of additional spending throughout the economy. This results in numerous direct, indirect, and induced impacts. The sum of these impacts is the total economic impact resulting from the original expenditures. The economic figures in Table 3 show the total economic effect from 2001 watchable wildlife activities in Arizona to be \$1.5 billion (\$1.1 billion by residents and \$434.7 million by non-residents). Tables detailing the economic impacts of watchable wildlife recreation for each specific category of goods and services are provided in Appendix B.

**Table 3. Economic Impacts of Watchable Wildlife Recreation in Arizona in 2001 (Participants 16 Years Old and Older)**

	<b>Resident</b>	<b>Non-Resident</b>	<b>Total</b>
Retail sales	\$594.5 million	\$226.2 million	\$820.7 million
Salaries and wages	\$312.1 million	\$117.3 million	\$429.4 million
Full- and part-time jobs	10,235	4,823	15,058
Tax revenues			
State sales tax	\$33.6 million	\$13.1 million	\$46.8 million
State income tax	\$8.1 million	\$2.7 million	\$10.8 million
Federal income tax	\$56.9 million	\$18.6 million	\$75.5 million
<b>Total economic effect</b>	<b>\$1.1 billion</b>	<b>\$434.7 million</b>	<b>\$1.5 billion</b>

#### *Earnings*

Total household income (salaries and wages) generated during 2001 from watchable wildlife recreation in Arizona was estimated at \$429.4 million (\$312.1 million by residents and \$117.3 million by non-residents).

#### *Employment*

During 2001, watchable wildlife recreation supported approximately 15,000 full- and part-time jobs in Arizona (approximately 10,200 generated by residents' spending and approximately 4,800 generated by non-residents' spending). These are jobs that are directly associated with watchable wildlife activities, in addition to jobs in industries that indirectly support these activities.

### Tax Revenues

Expenditures by residents and non-residents generate sales tax revenues for the State. Likewise, the jobs generated by wildlife watching activities creates additional income tax revenues. Total state tax revenues generated by watchable wildlife recreation is estimated at \$41.7 million by residents and \$15.8 million by non-residents. Total federal income tax revenues generated by watchable wildlife recreation is estimated at \$5.0 million.

## County-Specific Impacts

Table 4 presents the overall economic impact of watchable wildlife recreation per county. These include impacts stimulated by expenditures made by residents and non-residents.

**Table 4. Economic Impacts from All Watchable Wildlife Recreation in Arizona, by County, in 2001 (Participants 16 Years Old and Older)**

County		County Residents	Residents from Other Counties	Non-Residents	TOTAL
<b>Apache</b>	Retail Sales	\$1,355,821	\$9,111,560	\$14,415,860	\$24,883,240
	Total Multiplier Effect	\$2,547,094	\$17,020,952	\$27,702,223	\$47,270,269
	Salaries and Wages	\$689,386	\$4,811,329	\$7,471,357	\$12,972,073
	Full & Part-Time Jobs	27	155	307	489
	State Sales & Fuel Tax Revenues	\$78,111	\$518,307	\$838,167	\$1,434,584
	State Income Tax Revenues	\$20,225	\$126,122	\$172,483	\$318,830
	Federal Income Tax Revenues	\$141,527	\$885,972	\$1,186,110	\$2,213,609
<b>Cochise</b>	Retail Sales	\$6,577,878	\$3,170,669	\$3,974,466	\$13,723,013
	Total Multiplier Effect	\$12,300,908	\$5,949,454	\$7,637,529	\$25,887,890
	Salaries and Wages	\$3,352,207	\$1,674,936	\$2,059,860	\$7,087,004
	Full & Part-Time Jobs	131	58	85	273
	State Sales & Fuel Tax Revenues	\$368,389	\$174,082	\$231,083	\$773,554
	State Income Tax Revenues	\$96,909	\$42,615	\$47,554	\$187,078
	Federal Income Tax Revenues	\$677,585	\$297,944	\$327,012	\$1,302,541
<b>Coconino</b>	Retail Sales	\$13,082,782	\$13,155,232	\$20,366,331	\$46,604,346
	Total Multiplier Effect	\$24,257,688	\$24,586,132	\$39,136,942	\$87,980,762
	Salaries and Wages	\$6,817,945	\$6,946,867	\$10,555,329	\$24,320,141
	Full & Part-Time Jobs	214	225	434	873
	State Sales & Fuel Tax Revenues	\$753,167	\$745,634	\$1,184,139	\$2,682,940
	State Income Tax Revenues	\$172,476	\$181,548	\$243,679	\$597,702
	Federal Income Tax Revenues	\$1,210,962	\$1,274,717	\$1,675,704	\$4,161,382

**Table 4 (continued). Economic Impacts from All Watchable Wildlife Recreation in Arizona, by County, in 2001 (Participants 16 Years Old and Older)**

County		County Residents	Residents from Other Counties	Non-Residents	TOTAL
<b>Gila</b>	Retail Sales	\$5,656,247	\$2,410,104	\$3,480,465	\$11,546,815
	Total Multiplier Effect	\$10,560,864	\$4,510,666	\$6,688,231	\$21,759,761
	Salaries and Wages	\$2,979,240	\$1,272,863	\$1,803,832	\$6,055,935
	Full & Part-Time Jobs	97	42	74	214
	State Sales & Fuel Tax Revenues	\$317,319	\$135,093	\$202,361	\$654,773
	State Income Tax Revenues	\$78,841	\$32,954	\$41,643	\$153,438
	Federal Income Tax Revenues	\$553,669	\$231,041	\$286,366	\$1,071,076
<b>Graham</b>	Retail Sales	\$3,975,171	\$1,294,143	\$1,773,914	\$7,043,229
	Total Multiplier Effect	\$7,354,054	\$2,424,484	\$3,408,841	\$13,187,378
	Salaries and Wages	\$2,081,568	\$683,545	\$919,373	\$3,684,486
	Full & Part-Time Jobs	63	23	38	123
	State Sales & Fuel Tax Revenues	\$234,007	\$71,968	\$103,139	\$409,113
	State Income Tax Revenues	\$52,314	\$17,579	\$21,224	\$91,118
	Federal Income Tax Revenues	\$367,890	\$123,117	\$145,954	\$636,962
<b>Greenlee</b>	Retail Sales	Sample size too small - data not available			
	Total Multiplier Effect	Sample size too small - data not available			
	Salaries and Wages	Sample size too small - data not available			
	Full & Part-Time Jobs	Sample size too small - data not available			
	State Sales & Fuel Tax Revenues	Sample size too small - data not available			
	State Income Tax Revenues	Sample size too small - data not available			
	Federal Income Tax Revenues	Sample size too small - data not available			
<b>La Paz</b>	Retail Sales	\$174,909	\$719,709	\$943,094	\$1,837,711
	Total Multiplier Effect	\$263,960	\$1,349,425	\$1,812,295	\$3,425,680
	Salaries and Wages	\$49,068	\$380,167	\$488,780	\$918,015
	Full & Part-Time Jobs	2	13	20	35
	State Sales & Fuel Tax Revenues	\$24,137	\$39,761	\$54,833	\$118,732
	State Income Tax Revenues	\$1,446	\$9,723	\$11,284	\$22,453
	Federal Income Tax Revenues	\$10,174	\$68,037	\$77,596	\$155,807
<b>Maricopa</b>	Retail Sales	\$241,010,390	\$56,120,457	\$71,203,569	\$368,334,416
	Total Multiplier Effect	\$448,310,508	\$105,282,873	\$136,828,271	\$690,421,651
	Salaries and Wages	\$126,269,423	\$29,645,607	\$36,902,919	\$192,817,949
	Full & Part-Time Jobs	4,070	1,016	1,517	6,603
	State Sales & Fuel Tax Revenues	\$13,742,406	\$3,086,385	\$4,139,916	\$20,968,707
	State Income Tax Revenues	\$3,239,084	\$755,328	\$851,935	\$4,846,347
	Federal Income Tax Revenues	\$22,727,975	\$5,282,078	\$5,858,498	\$33,868,552

**Table 4 (continued). Economic Impacts from All Watchable Wildlife Recreation in Arizona, by County, in 2001 (Participants 16 Years Old and Older)**

<b>County</b>		<b>County Residents</b>	<b>Residents from Other Counties</b>	<b>Non-Residents</b>	<b>TOTAL</b>
<b>Mohave</b>	Retail Sales	\$14,756,769	\$6,931,742	\$9,296,209	\$30,984,720
	Total Multiplier Effect	\$27,585,874	\$12,991,329	\$17,864,050	\$58,441,253
	Salaries and Wages	\$7,711,962	\$3,661,365	\$4,817,978	\$16,191,305
	Full & Part-Time Jobs	268	124	198	590
	State Sales & Fuel Tax Revenues	\$816,246	\$384,239	\$540,500	\$1,740,984
	State Income Tax Revenues	\$205,846	\$93,907	\$111,227	\$410,981
	Federal Income Tax Revenues	\$1,441,815	\$657,404	\$764,875	\$2,864,094
<b>Navajo</b>	Retail Sales	\$7,581,446	\$6,669,276	\$10,171,938	\$24,422,660
	Total Multiplier Effect	\$14,039,768	\$12,468,259	\$19,546,896	\$46,054,923
	Salaries and Wages	\$3,924,547	\$3,521,935	\$5,271,846	\$12,718,328
	Full & Part-Time Jobs	120	115	217	452
	State Sales & Fuel Tax Revenues	\$439,486	\$377,089	\$591,417	\$1,407,992
	State Income Tax Revenues	\$96,702	\$91,852	\$121,705	\$310,259
	Federal Income Tax Revenues	\$678,846	\$644,718	\$836,928	\$2,160,492
<b>Pima</b>	Retail Sales	\$85,322,023	\$36,240,245	\$51,982,423	\$173,544,691
	Total Multiplier Effect	\$158,809,428	\$67,834,927	\$99,891,973	\$326,536,328
	Salaries and Wages	\$44,645,190	\$19,140,009	\$26,941,109	\$90,726,309
	Full & Part-Time Jobs	1,454	635	1,107	3,196
	State Sales & Fuel Tax Revenues	\$4,856,514	\$2,029,235	\$3,022,361	\$9,908,109
	State Income Tax Revenues	\$1,150,771	\$495,093	\$621,958	\$2,267,822
	Federal Income Tax Revenues	\$8,072,475	\$3,470,619	\$4,277,017	\$15,820,112
<b>Pinal</b>	Retail Sales	\$20,687,736	\$12,133,344	\$18,075,961	\$50,897,041
	Total Multiplier Effect	\$38,535,190	\$22,694,280	\$34,735,654	\$95,965,124
	Salaries and Wages	\$10,838,913	\$6,407,698	\$9,368,291	\$26,614,902
	Full & Part-Time Jobs	353	210	385	949
	State Sales & Fuel Tax Revenues	\$1,177,490	\$683,445	\$1,050,972	\$2,911,907
	State Income Tax Revenues	\$282,476	\$166,580	\$216,275	\$665,331
	Federal Income Tax Revenues	\$1,982,471	\$1,168,656	\$1,487,257	\$4,638,383
<b>Santa Cruz</b>	Retail Sales	\$856,960	\$4,347,622	\$6,736,383	\$11,940,965
	Total Multiplier Effect	\$1,640,255	\$8,125,234	\$12,944,964	\$22,710,453
	Salaries and Wages	\$453,907	\$2,295,840	\$3,491,288	\$6,241,035
	Full & Part-Time Jobs	18	74	143	236
	State Sales & Fuel Tax Revenues	\$40,081	\$246,456	\$391,667	\$678,203
	State Income Tax Revenues	\$14,167	\$60,006	\$80,599	\$154,772
	Federal Income Tax Revenues	\$99,352	\$421,332	\$554,257	\$1,074,941

**Table 4 (continued). Economic Impacts from All Watchable Wildlife Recreation in Arizona, by County, in 2001 (Participants 16 Years Old and Older)**

<b>County</b>		<b>County Residents</b>	<b>Residents from Other Counties</b>	<b>Non-Residents</b>	<b>TOTAL</b>
<b>Yavapai</b>	Retail Sales	\$23,601,756	\$6,520,078	\$8,802,207	\$38,924,040
	Total Multiplier Effect	\$43,836,802	\$12,218,323	\$16,914,753	\$72,969,878
	Salaries and Wages	\$12,397,712	\$3,443,885	\$4,561,950	\$20,403,548
	Full & Part-Time Jobs	389	116	188	692
	State Sales & Fuel Tax Revenues	\$1,350,013	\$361,769	\$511,778	\$2,223,561
	State Income Tax Revenues	\$313,488	\$88,401	\$105,316	\$507,205
	Federal Income Tax Revenues	\$2,201,040	\$618,939	\$724,229	\$3,544,208
<b>Yuma</b>	Retail Sales	\$8,274,393	\$1,973,966	\$2,088,279	\$12,336,638
	Total Multiplier Effect	\$15,413,698	\$3,713,756	\$4,012,939	\$23,140,393
	Salaries and Wages	\$4,276,826	\$1,043,016	\$1,082,299	\$6,402,142
	Full & Part-Time Jobs	147	37	44	229
	State Sales & Fuel Tax Revenues	\$472,959	\$106,051	\$121,417	\$700,427
	State Income Tax Revenues	\$114,520	\$26,059	\$24,986	\$165,565
	Federal Income Tax Revenues	\$802,724	\$181,652	\$171,820	\$1,156,196

Table 5 presents the economic impacts from residential activities (activities within 1 mile of home). These include impacts stimulated by expenditures made by county residents and residents from neighboring counties. By definition, residential impacts created by non-residents are rarely possible, because these people usually must travel more than 1 mile from home.

**Table 5. Economic Impacts From Residential Activities, by County, 2001 (Participants 16 Years Old and Older)**

<b>County</b>		<b>Residents</b>	<b>Non-Residents</b>	<b>TOTAL</b>
<b>Apache</b>	Retail Sales	\$412,726	\$197,205	\$609,932
	Total Multiplier Effect	\$780,877	\$376,312	\$1,157,189
	Salaries and Wages	\$204,597	\$104,336	\$308,933
	Full & Part-Time Jobs	8	4	13
	State Sales & Fuel Tax Revenues	\$21,913	\$9,337	\$31,250
	State Income Tax Revenues	\$4,246	\$2,348	\$6,594
	Federal Income Tax Revenues	\$29,060	\$16,073	\$45,134

**Table 5 (continued). Economic Impacts From Residential Activities, by County, 2001  
(Participants 16 Years Old and Older)**

<b>County</b>		<b>Residents</b>	<b>Non-Residents</b>	<b>TOTAL</b>
<b>Cochise</b>	Retail Sales	\$1,987,697	\$712,974	\$2,700,670
	Total Multiplier Effect	\$3,787,438	\$1,360,511	\$5,147,949
	Salaries and Wages	\$1,040,182	\$377,213	\$1,417,395
	Full & Part-Time Jobs	44	16	60
	State Sales & Fuel Tax Revenues	\$96,129	\$33,758	\$129,888
	State Income Tax Revenues	\$23,108	\$8,491	\$31,599
	Federal Income Tax Revenues	\$158,156	\$58,112	\$216,267
<b>Coconino</b>	Retail Sales	\$1,377,048	\$561,277	\$1,938,325
	Total Multiplier Effect	\$2,616,905	\$1,071,041	\$3,687,946
	Salaries and Wages	\$706,164	\$296,955	\$1,003,119
	Full & Part-Time Jobs	29	13	42
	State Sales & Fuel Tax Revenues	\$69,141	\$26,576	\$95,717
	State Income Tax Revenues	\$15,298	\$6,684	\$21,982
	Federal Income Tax Revenues	\$104,701	\$45,748	\$150,449
<b>Gila</b>	Retail Sales	\$543,239	\$257,884	\$801,123
	Total Multiplier Effect	\$1,035,564	\$492,100	\$1,527,663
	Salaries and Wages	\$285,222	\$136,439	\$421,661
	Full & Part-Time Jobs	12	6	18
	State Sales & Fuel Tax Revenues	\$26,107	\$12,210	\$38,317
	State Income Tax Revenues	\$6,362	\$3,071	\$9,433
	Federal Income Tax Revenues	\$43,540	\$21,019	\$64,560
<b>Graham</b>	Retail Sales	\$151,398	\$197,205	\$348,603
	Total Multiplier Effect	\$286,954	\$376,312	\$663,265
	Salaries and Wages	\$76,066	\$104,336	\$180,401
	Full & Part-Time Jobs	3	4	8
	State Sales & Fuel Tax Revenues	\$7,878	\$9,337	\$17,216
	State Income Tax Revenues	\$1,605	\$2,348	\$3,953
	Federal Income Tax Revenues	\$10,982	\$16,073	\$27,055
<b>Greenlee</b>	Retail Sales	\$22,534	\$45,509	\$68,043
	Total Multiplier Effect	\$43,225	\$86,841	\$130,066
	Salaries and Wages	\$12,388	\$24,077	\$36,465
	Full & Part-Time Jobs	1	1	2
	State Sales & Fuel Tax Revenues	\$985	\$2,155	\$3,140
	State Income Tax Revenues	\$291	\$542	\$833
	Federal Income Tax Revenues	\$1,993	\$3,709	\$5,703

**Table 5 (continued). Economic Impacts From Residential Activities, by County, 2001  
(Participants 16 Years Old and Older)**

<b>County</b>		<b>Residents</b>	<b>Non-Residents</b>	<b>TOTAL</b>
<b>La Paz</b>	Retail Sales	Sample size too small - data not available		
	Total Multiplier Effect	Sample size too small - data not available		
	Salaries and Wages	Sample size too small - data not available		
	Full & Part-Time Jobs	Sample size too small - data not available		
	State Sales & Fuel Tax Revenues	Sample size too small - data not available		
	State Income Tax Revenues	Sample size too small - data not available		
	Federal Income Tax Revenues	Sample size too small - data not available		
<b>Maricopa</b>	Retail Sales	\$30,645,770	\$12,090,213	\$42,735,983
	Total Multiplier Effect	\$58,414,429	\$23,070,793	\$81,485,221
	Salaries and Wages	\$16,080,210	\$6,396,576	\$22,476,786
	Full & Part-Time Jobs	682	274	956
	State Sales & Fuel Tax Revenues	\$1,474,537	\$572,455	\$2,046,992
	State Income Tax Revenues	\$358,388	\$143,981	\$502,369
	Federal Income Tax Revenues	\$2,452,864	\$985,429	\$3,438,293
<b>Mohave</b>	Retail Sales	\$3,030,667	\$1,183,233	\$4,213,900
	Total Multiplier Effect	\$5,782,247	\$2,257,869	\$8,040,116
	Salaries and Wages	\$1,601,500	\$626,014	\$2,227,514
	Full & Part-Time Jobs	68	27	95
	State Sales & Fuel Tax Revenues	\$143,839	\$56,024	\$199,863
	State Income Tax Revenues	\$35,997	\$14,091	\$50,088
	Federal Income Tax Revenues	\$246,367	\$96,441	\$342,808
<b>Navajo</b>	Retail Sales	\$772,843	\$379,241	\$1,152,085
	Total Multiplier Effect	\$1,473,820	\$723,676	\$2,197,496
	Salaries and Wages	\$406,949	\$200,645	\$607,594
	Full & Part-Time Jobs	17	9	26
	State Sales & Fuel Tax Revenues	\$36,934	\$17,957	\$54,891
	State Income Tax Revenues	\$9,108	\$4,516	\$13,625
	Federal Income Tax Revenues	\$62,339	\$30,911	\$93,249
<b>Pima</b>	Retail Sales	\$11,883,095	\$4,095,806	\$15,978,901
	Total Multiplier Effect	\$22,649,888	\$7,815,701	\$30,465,589
	Salaries and Wages	\$6,233,788	\$2,166,971	\$8,400,758
	Full & Part-Time Jobs	264	93	357
	State Sales & Fuel Tax Revenues	\$572,011	\$193,931	\$765,941
	State Income Tax Revenues	\$138,898	\$48,777	\$187,674
	Federal Income Tax Revenues	\$950,637	\$333,834	\$1,284,471

**Table 5 (continued). Economic Impacts From Residential Activities, by County, 2001  
(Participants 16 Years Old and Older)**

<b>County</b>		<b>Residents</b>	<b>Non-Residents</b>	<b>TOTAL</b>
<b>Pinal</b>	Retail Sales	\$2,514,042	\$955,688	\$3,469,730
	Total Multiplier Effect	\$4,790,317	\$1,823,664	\$6,613,980
	Salaries and Wages	\$1,315,540	\$505,626	\$1,821,166
	Full & Part-Time Jobs	56	22	77
	State Sales & Fuel Tax Revenues	\$121,599	\$45,250	\$166,850
	State Income Tax Revenues	\$29,223	\$11,381	\$40,604
	Federal Income Tax Revenues	\$200,007	\$77,895	\$277,902
<b>Santa Cruz</b>	Retail Sales	\$158,337	\$182,036	\$340,373
	Total Multiplier Effect	\$301,688	\$347,365	\$649,053
	Salaries and Wages	\$82,831	\$96,310	\$179,141
	Full & Part-Time Jobs	3	4	8
	State Sales & Fuel Tax Revenues	\$7,663	\$8,619	\$16,282
	State Income Tax Revenues	\$1,839	\$2,168	\$4,007
	Federal Income Tax Revenues	\$12,589	\$14,837	\$27,426
<b>Yavapai</b>	Retail Sales	\$2,268,368	\$1,077,045	\$3,345,414
	Total Multiplier Effect	\$4,334,927	\$2,055,240	\$6,390,167
	Salaries and Wages	\$1,213,348	\$569,833	\$1,783,181
	Full & Part-Time Jobs	53	24	77
	State Sales & Fuel Tax Revenues	\$105,078	\$50,997	\$156,074
	State Income Tax Revenues	\$27,664	\$12,826	\$40,490
	Federal Income Tax Revenues	\$189,337	\$87,786	\$277,123
<b>Yuma</b>	Retail Sales	\$1,484,146	\$682,634	\$2,166,781
	Total Multiplier Effect	\$2,825,339	\$1,302,617	\$4,127,956
	Salaries and Wages	\$771,253	\$361,162	\$1,132,414
	Full & Part-Time Jobs	32	15	48
	State Sales & Fuel Tax Revenues	\$72,730	\$32,322	\$105,051
	State Income Tax Revenues	\$16,988	\$8,129	\$25,117
	Federal Income Tax Revenues	\$116,266	\$55,639	\$171,905
<b>Statewide</b>	Retail Sales:	\$57,251,911	\$22,754,479	\$80,006,390
	Total Multiplier Effect	\$109,123,617	\$43,420,564	\$152,544,180
	Salaries and Wages	\$30,030,037	\$12,038,726	\$42,068,763
	Full & Part-Time Jobs	1,272	515	1,788
	State Sales & Fuel Tax Revenues	\$2,756,544	\$1,077,393	\$3,833,937
	State Income Tax Revenues	\$669,014	\$270,981	\$939,995
	Federal Income Tax Revenues	\$4,578,838	\$1,854,634	\$6,433,472

Table 6 presents the economic impacts from non-residential activities (activities farther than 1 mile from home). These include only impacts of wildlife watching and include impacts stimulated by county residents, residents from neighboring counties within the state, and from non-residents.

**Table 6. Economic Impacts From Non-Residential Activities, by County, 2001  
(Participants 16 Years Old and Older)**

County		Residents	State Residents From Other Counties	Out-of-State Residents	TOTAL
<b>Apache</b>	Retail Sales	\$943,094	\$8,914,354	\$14,415,860	\$24,273,308
	Total Multiplier Effect	\$1,766,217	\$16,644,641	\$27,702,223	\$46,113,080
	Salaries and Wages	\$484,788	\$4,706,994	\$7,471,357	\$12,663,140
	Full & Part-Time Jobs	19	150	307	476
	State Sales & Fuel Tax Revenues	\$56,198	\$508,970	\$838,167	\$1,403,334
	State Income Tax Revenues	\$15,979	\$123,773	\$172,483	\$312,235
	Federal Income Tax Revenues	\$112,466	\$869,899	\$1,186,110	\$2,168,475
<b>Cochise</b>	Retail Sales	\$4,590,181	\$2,457,696	\$3,974,466	\$11,022,343
	Total Multiplier Effect	\$8,513,470	\$4,588,943	\$7,637,529	\$20,739,941
	Salaries and Wages	\$2,312,026	\$1,297,723	\$2,059,860	\$5,669,608
	Full & Part-Time Jobs	87	41	85	213
	State Sales & Fuel Tax Revenues	\$272,260	\$140,323	\$231,083	\$643,666
	State Income Tax Revenues	\$73,801	\$34,124	\$47,554	\$155,479
	Federal Income Tax Revenues	\$519,430	\$239,832	\$327,012	\$1,086,273
<b>Coconino</b>	Retail Sales	\$11,705,734	\$12,593,955	\$20,366,331	\$44,666,021
	Total Multiplier Effect	\$21,640,783	\$23,515,092	\$39,136,942	\$84,292,816
	Salaries and Wages	\$6,111,781	\$6,649,912	\$10,555,329	\$23,317,022
	Full & Part-Time Jobs	185	212	434	831
	State Sales & Fuel Tax Revenues	\$684,026	\$719,059	\$1,184,139	\$2,587,223
	State Income Tax Revenues	\$157,178	\$174,863	\$243,679	\$575,720
	Federal Income Tax Revenues	\$1,106,261	\$1,228,969	\$1,675,704	\$4,010,934
<b>Gila</b>	Retail Sales	\$5,113,008	\$2,152,219	\$3,480,465	\$10,745,692
	Total Multiplier Effect	\$9,525,300	\$4,018,566	\$6,688,231	\$20,232,097
	Salaries and Wages	\$2,694,017	\$1,136,424	\$1,803,832	\$5,634,273
	Full & Part-Time Jobs	85	36	74	196
	State Sales & Fuel Tax Revenues	\$291,212	\$122,882	\$202,361	\$616,455
	State Income Tax Revenues	\$72,479	\$29,883	\$41,643	\$144,005
	Federal Income Tax Revenues	\$510,128	\$210,022	\$286,366	\$1,006,517
<b>Graham</b>	Retail Sales	\$3,823,773	\$1,096,938	\$1,773,914	\$6,694,625
	Total Multiplier Effect	\$7,067,100	\$2,048,172	\$3,408,841	\$12,524,113
	Salaries and Wages	\$2,005,503	\$579,210	\$919,373	\$3,504,085
	Full & Part-Time Jobs	60	18	38	116
	State Sales & Fuel Tax Revenues	\$226,128	\$62,630	\$103,139	\$391,897
	State Income Tax Revenues	\$50,710	\$15,231	\$21,224	\$87,165
	Federal Income Tax Revenues	\$356,908	\$107,044	\$145,954	\$609,906

**Table 6. Economic Impacts From Non-Residential Activities, by County, 2001  
(Participants 16 Years Old and Older)**

County		Residents	State Residents From Other Counties	Out-of-State Residents	TOTAL
<b>Greenlee</b>	Retail Sales	Sample size too small - data not available			
	Total Multiplier Effect	Sample size too small - data not available			
	Salaries and Wages	Sample size too small - data not available			
	Full & Part-Time Jobs	Sample size too small - data not available			
	State Sales & Fuel Tax Revenues	Sample size too small - data not available			
	State Income Tax Revenues	Sample size too small - data not available			
	Federal Income Tax Revenues	Sample size too small - data not available			
<b>La Paz</b>	Retail Sales	\$174,909	\$583,182	\$943,094	\$1,701,184
	Total Multiplier Effect	\$263,960	\$1,088,902	\$1,812,295	\$3,165,156
	Salaries and Wages	\$49,068	\$307,934	\$488,780	\$845,783
	Full & Part-Time Jobs	2	10	20	32
	State Sales & Fuel Tax Revenues	\$24,137	\$33,297	\$54,833	\$112,267
	State Income Tax Revenues	\$1,446	\$8,097	\$11,284	\$20,827
	Federal Income Tax Revenues	\$10,174	\$56,909	\$77,596	\$144,680
<b>Maricopa</b>	Retail Sales	\$210,364,620	\$44,030,244	\$71,203,569	\$325,598,433
	Total Multiplier Effect	\$389,896,079	\$82,212,080	\$136,828,271	\$608,936,430
	Salaries and Wages	\$110,189,213	\$23,249,030	\$36,902,919	\$170,341,162
	Full & Part-Time Jobs	3,389	742	1,517	5,648
	State Sales & Fuel Tax Revenues	\$12,267,869	\$2,513,930	\$4,139,916	\$18,921,715
	State Income Tax Revenues	\$2,880,696	\$611,347	\$851,935	\$4,343,978
	Federal Income Tax Revenues	\$20,275,111	\$4,296,650	\$5,858,498	\$30,430,259
<b>Mohave</b>	Retail Sales	\$11,726,102	\$5,748,509	\$9,296,209	\$26,770,820
	Total Multiplier Effect	\$21,803,627	\$10,733,460	\$17,864,050	\$50,401,137
	Salaries and Wages	\$6,110,461	\$3,035,351	\$4,817,978	\$13,963,791
	Full & Part-Time Jobs	200	97	198	495
	State Sales & Fuel Tax Revenues	\$672,407	\$328,214	\$540,500	\$1,541,121
	State Income Tax Revenues	\$169,850	\$79,816	\$111,227	\$360,893
	Federal Income Tax Revenues	\$1,195,448	\$560,963	\$764,875	\$2,521,286
<b>Navajo</b>	Retail Sales	\$6,808,603	\$6,290,035	\$10,171,938	\$23,270,576
	Total Multiplier Effect	\$12,565,949	\$11,744,583	\$19,546,896	\$43,857,428
	Salaries and Wages	\$3,517,598	\$3,321,290	\$5,271,846	\$12,110,734
	Full & Part-Time Jobs	103	106	217	426
	State Sales & Fuel Tax Revenues	\$402,552	\$359,133	\$591,417	\$1,353,101
	State Income Tax Revenues	\$87,594	\$87,335	\$121,705	\$296,634
	Federal Income Tax Revenues	\$616,507	\$613,807	\$836,928	\$2,067,243

**Table 6. Economic Impacts From Non-Residential Activities, by County, 2001  
(Participants 16 Years Old and Older)**

County		Residents	State Residents From Other Counties	Out-of-State Residents	TOTAL
<b>Pima</b>	Retail Sales	\$73,438,928	\$32,144,439	\$51,982,423	\$157,565,789
	Total Multiplier Effect	\$136,159,540	\$60,019,226	\$99,891,973	\$296,070,739
	Salaries and Wages	\$38,411,402	\$16,973,039	\$26,941,109	\$82,325,550
	Full & Part-Time Jobs	1,190	542	1,107	2,839
	State Sales & Fuel Tax Revenues	\$4,284,503	\$1,835,304	\$3,022,361	\$9,142,168
	State Income Tax Revenues	\$1,011,874	\$446,316	\$621,958	\$2,080,148
	Federal Income Tax Revenues	\$7,121,839	\$3,136,785	\$4,277,017	\$14,535,641
<b>Pinal</b>	Retail Sales	\$18,173,694	\$11,177,656	\$18,075,961	\$47,427,311
	Total Multiplier Effect	\$33,744,873	\$20,870,616	\$34,735,654	\$89,351,143
	Salaries and Wages	\$9,523,374	\$5,902,072	\$9,368,291	\$24,793,736
	Full & Part-Time Jobs	298	188	385	871
	State Sales & Fuel Tax Revenues	\$1,055,891	\$638,194	\$1,050,972	\$2,745,057
	State Income Tax Revenues	\$253,253	\$155,198	\$216,275	\$624,727
	Federal Income Tax Revenues	\$1,782,464	\$1,090,761	\$1,487,257	\$4,360,481
<b>Santa Cruz</b>	Retail Sales	\$698,623	\$4,165,586	\$6,736,383	\$11,600,592
	Total Multiplier Effect	\$1,338,567	\$7,777,869	\$12,944,964	\$22,061,400
	Salaries and Wages	\$371,076	\$2,199,530	\$3,491,288	\$6,061,894
	Full & Part-Time Jobs	15	70	143	228
	State Sales & Fuel Tax Revenues	\$32,419	\$237,836	\$391,667	\$661,922
	State Income Tax Revenues	\$12,327	\$57,838	\$80,599	\$150,765
	Federal Income Tax Revenues	\$86,763	\$406,495	\$554,257	\$1,047,515
<b>Yavapai</b>	Retail Sales	\$21,333,387	\$5,443,032	\$8,802,207	\$35,578,627
	Total Multiplier Effect	\$39,501,875	\$10,163,083	\$16,914,753	\$66,579,711
	Salaries and Wages	\$11,184,364	\$2,874,052	\$4,561,950	\$18,620,367
	Full & Part-Time Jobs	336	92	188	615
	State Sales & Fuel Tax Revenues	\$1,244,936	\$310,773	\$511,778	\$2,067,486
	State Income Tax Revenues	\$285,824	\$75,575	\$105,316	\$466,715
	Federal Income Tax Revenues	\$2,011,703	\$531,153	\$724,229	\$3,267,086

**Table 6. Economic Impacts From Non-Residential Activities, by County, 2001  
(Participants 16 Years Old and Older)**

County		Residents	State Residents From Other Counties	Out-of-State Residents	TOTAL
<b>Yuma</b>	Retail Sales	\$6,790,246	\$1,291,332	\$2,088,279	\$10,169,857
	Total Multiplier Effect	\$12,588,359	\$2,411,140	\$4,012,939	\$19,012,437
	Salaries and Wages	\$3,505,574	\$681,854	\$1,082,299	\$5,269,727
	Full & Part-Time Jobs	115	22	44	181
	State Sales & Fuel Tax Revenues	\$400,230	\$73,729	\$121,417	\$595,375
	State Income Tax Revenues	\$97,532	\$17,930	\$24,986	\$140,448
	Federal Income Tax Revenues	\$686,457	\$126,013	\$171,820	\$984,290
<b>Statewide</b>	Retail Sales	\$375,684,904	\$138,838,981	\$224,523,647	\$739,047,532
	Total Multiplier Effect	\$696,375,698	\$259,236,388	\$431,455,654	\$1,387,067,740
	Salaries and Wages	\$196,470,246	\$73,310,329	\$116,364,645	\$386,145,219
	Full & Part-Time Jobs	6,082	2,340	4,783	13,206
	State Sales & Fuel Tax Revenues	\$21,914,766	\$7,927,086	\$13,054,248	\$42,896,100
	State Income Tax Revenues	\$5,170,542	\$1,927,739	\$2,686,375	\$9,784,656
	Federal Income Tax Revenues	\$36,391,660	\$13,548,471	\$18,473,390	\$68,413,521

## APPENDIX A: DEFINITIONS

**Economic benefits** can be estimated by two types of economic measures: economic impacts and economic values. An **economic impact** addresses the business and financial activity resulting from the use of a resource. **Economic value**, on the other hand, is a non-business measure that estimates the value people receive from an activity after subtracting their costs and expenditures. This concept is also known as *consumer surplus*.

There are three types of economic impact: direct, indirect, and induced. A **direct impact** is defined as the economic impact of the initial purchase made by the consumer. **Indirect impacts** are the secondary effects generated from a direct impact. Indirect impacts indicate that sales in one industry affect not only that industry, but also the industries that supply the first industry. An **induced impact** results from the salaries and wages paid by the directly and indirectly impacted industries. The employees of these industries spend their income on various goods and services. These expenditures are induced impacts, which, in turn, create a continual cycle of indirect and induced effects.

The sum of the direct, indirect, and induced impacts is the **total economic impact** of the activity under study. As the original retail purchase (direct impact) goes through round after round of indirect and induced effects, the economic impact of the original purchase is multiplied, benefiting many industries and individuals. Likewise, the reverse is true. If a particular item or industry is removed from the economy, the economic loss is greater than the original lost retail sales. Once the original retail purchase is made, each successive round of spending is smaller than the previous round. When the economic benefits are no longer measurable, the economic multiplier ends.

**Watchable wildlife recreation** is defined here as observing, photographing, and/or feeding fish and/or other wildlife. **Wildlife** is defined as animals that are living in natural or wild environments. Animals in museums, zoos, and aquariums, and domestic and farm animals are not included. Watchable wildlife recreation is divided into two types of activities: residential and non-residential. According to the 2001 *National Survey*, **residential activities** are those activities that occur within 1 mile of one's home. In contrast, according to the *National Survey*, **non-residential activities** are trips or outings of at least 1 mile from home. Given the definitions, residential activities are made by Arizona residents, whereas non-residential activities are made by both Arizona residents and non-residents.

**APPENDIX B****Statewide Economic Impact Tables***(Sample sizes are too small to permit county-specific estimates)***2001 Economic Impacts—Residents**

Category	Retail Sales	Total Multiplier Effect	Salaries and Wages	Full & Part-Time Jobs	State Sales Taxes	State Income Taxes	Federal Income Taxes
Food	\$33,158,867	\$66,839,136	\$17,073,856	717	\$618,959	\$568,268	\$3,986,672
Lodging	\$15,317,068	\$31,280,516	\$9,804,455	441	\$857,756	\$349,311	\$2,450,585
Public transportation	\$905,018	\$1,815,648	\$538,395	18	\$50,681	\$14,067	\$98,683
Private transportation	\$28,246,411	\$42,177,612	\$7,639,617	266	\$3,972,152	\$210,585	\$1,477,356
Guide fees	\$1,108,307	\$2,086,610	\$602,698	32	n/a	\$25,021	\$175,536
Public land access fees	\$1,910,195	\$3,989,251	\$1,011,257	30	n/a	\$23,866	\$167,434
Private land access fees	\$19,844	\$37,361	\$11,039	1	\$1,111	\$448	\$3,143
Equipment rental	\$278,148	\$504,394	\$147,001	5	\$15,576	\$3,734	\$26,198
Boat fuel	\$59,518	\$88,873	\$16,097	1	\$8,370	\$444	\$3,113
Other boat costs	\$28,383	\$53,437	\$15,435	1	\$1,589	\$641	\$4,495
Heating & cooking fuel	\$473,839	\$707,538	\$128,156	4	\$66,634	\$3,533	\$24,783
Cameras	\$48,989,431	\$88,234,119	\$24,177,433	869	\$2,743,408	\$689,001	\$4,833,664
Film & developing	\$16,119,378	\$31,133,207	\$9,786,299	364	\$902,685	\$288,560	\$2,024,383
Commercial bird food	\$27,098,836	\$51,216,150	\$12,628,115	478	\$1,517,535	\$378,846	\$2,657,781
Other bird food	\$8,886,351	\$16,794,991	\$4,141,058	157	\$497,636	\$124,232	\$871,549
Food for other wildlife	\$1,536,726	\$2,904,376	\$716,118	27	\$86,057	\$21,484	\$150,718
Nest boxes, feeders	\$8,385,498	\$15,626,774	\$4,469,714	165	\$469,588	\$130,517	\$915,640
Other special equipment	\$1,434,335	\$2,672,952	\$764,542	28	\$80,323	\$22,325	\$156,620
Tents, tarps	\$6,299,700	\$12,291,169	\$3,653,799	140	\$352,783	\$111,342	\$781,115
Backpacking equipment	\$910,151	\$1,775,771	\$527,884	20	\$50,968	\$16,086	\$112,852
Other camping equipment	\$11,544,625	\$22,524,395	\$6,695,833	257	\$646,499	\$204,041	\$1,431,446
Day packs	\$4,472,909	\$8,726,968	\$2,594,268	100	\$250,483	\$79,055	\$554,607
Magazines & books	\$3,790,471	\$7,056,827	\$1,958,371	69	\$212,266	\$54,683	\$383,624
Binoculars, spotting scopes	\$8,824,125	\$17,716,617	\$5,544,634	194	\$494,151	\$153,727	\$1,078,466
Membership dues, contributions	\$12,360,127	\$26,323,363	\$8,589,052	525	n/a	\$416,304	\$2,920,570
Other auxiliary equipment	\$1,673,472	\$3,265,065	\$970,607	37	\$93,714	\$29,577	\$207,498
Off-road vehicles	\$203,211,500	\$380,164,119	\$109,720,086	2,464	\$11,379,844	\$1,953,063	\$13,701,658
Pickup, camper, motor home	\$21,641,708	\$40,486,886	\$7,948,956	262	\$1,211,936	\$207,998	\$1,459,205
Boat	\$111,004,758	\$202,978,459	\$62,143,376	2,238	\$6,216,266	\$1,773,695	\$12,443,305
Trailer, boat accessories	\$0	\$0	\$0	0	\$0	\$0	\$0
Cabin	\$0	\$0	\$0	0	\$0	\$0	\$0
Other special equipment	\$0	\$0	\$0	0	\$0	\$0	\$0
Plantings, gardening	\$14,840,573	\$26,809,336	\$8,091,452	326	\$831,072	\$258,498	\$1,813,484
Land purchases, 2001 payments	\$0	\$0	\$0	0	\$0	\$0	\$0
Land leases, 2001 payments	\$0	\$0	\$0	0	\$0	\$0	\$0
<b>TOTALS</b>	<b>\$594,530,275</b>	<b>\$1,108,281,918</b>	<b>\$312,109,604</b>	<b>10,235</b>	<b>\$33,630,043</b>	<b>\$8,112,952</b>	<b>\$56,916,185</b>

**2001 Economic Impacts—Non-Residents**

Category	Retail Sales	Total Multiplier Effect	Salaries and Wages	Full & Part-Time Jobs	State Sales Taxes	State Income Taxes	Federal Income Taxes
Food	\$76,523,656	\$154,250,596	\$39,402,851	1,654	\$1,428,427	\$929,296	\$6,390,486
Lodging	\$68,511,041	\$139,913,248	\$43,853,917	1,971	\$3,836,618	\$1,107,139	\$7,613,460
Public transportation	\$27,780,815	\$55,733,872	\$16,526,807	545	\$1,555,726	\$305,970	\$2,104,064
Private transportation	\$41,284,636	\$61,646,324	\$11,165,978	388	\$5,805,652	\$218,101	\$1,499,815
Guide fees	\$1,193,379	\$2,246,775	\$648,960	34	n/a	\$19,091	\$131,284
Public land access fees	\$3,193,743	\$6,669,813	\$1,690,768	50	n/a	\$28,276	\$194,444
Private land access fees	\$338,794	\$637,847	\$188,471	10	\$18,972	\$5,420	\$37,271
Equipment rental	\$340,400	\$617,282	\$179,902	6	\$19,062	\$3,238	\$22,270
Boat fuel	\$436,625	\$651,969	\$118,091	4	\$61,400	\$2,307	\$15,862
Other boat costs	\$2,944,163	\$5,542,976	\$1,601,036	84	\$164,873	\$47,099	\$323,889
Heating & cooking fuel	\$624,385	\$932,333	\$168,873	6	\$87,804	\$3,299	\$22,683
Cameras	\$0	\$0	\$0	0	\$0	\$0	\$0
Film & developing	\$1,284,450	\$2,480,805	\$779,807	29	\$71,929	\$16,293	\$112,044
Commercial bird food	\$139,480	\$263,615	\$64,998	2	\$7,811	\$1,382	\$9,502
Other bird food	\$266,029	\$502,789	\$123,970	5	\$14,898	\$2,635	\$18,123
Food for other wildlife	\$0	\$0	\$0	0	\$0	\$0	\$0
Nest boxes, feeders	\$319,095	\$594,648	\$170,087	6	\$17,869	\$3,519	\$24,202
Other special equipment	\$419,717	\$782,162	\$223,721	8	\$23,504	\$4,629	\$31,833
Tents, tarps	\$42,356	\$82,639	\$24,566	1	\$2,372	\$530	\$3,648
Backpacking equipment	\$0	\$0	\$0	0	\$0	\$0	\$0
Other camping equipment	\$0	\$0	\$0	0	\$0	\$0	\$0
Day packs	\$25,205	\$49,177	\$14,619	1	\$1,411	\$316	\$2,171
Magazines & books	\$151,146	\$281,393	\$78,091	3	\$8,464	\$1,545	\$10,625
Binoculars, spotting scopes	\$0	\$0	\$0	0	\$0	\$0	\$0
Membership dues, contributions	\$368,306	\$784,382	\$255,936	16	n/a	\$8,790	\$60,448
Other auxiliary equipment	\$0	\$0	\$0	0	\$0	\$0	\$0
Off-road vehicles	\$0	\$0	\$0	0	\$0	\$0	\$0
Pickup, camper, motor home	\$0	\$0	\$0	0	\$0	\$0	\$0
Boat	\$0	\$0	\$0	0	\$0	\$0	\$0
Trailer, boat accessories	\$0	\$0	\$0	0	\$0	\$0	\$0
Cabin	\$0	\$0	\$0	0	\$0	\$0	\$0
Other special equipment	\$0	\$0	\$0	0	\$0	\$0	\$0
Plantings, gardening	\$0	\$0	\$0	0	\$0	\$0	\$0
Land purchases, 2001 payments	\$0	\$0	\$0	0	\$0	\$0	\$0
Land leases, 2001 payments	\$0	\$0	\$0	0	\$0	\$0	\$0
<b>TOTALS</b>	<b>\$226,187,421</b>	<b>\$434,664,643</b>	<b>\$117,281,448</b>	<b>4,823</b>	<b>\$13,126,794</b>	<b>\$2,708,876</b>	<b>\$18,628,122</b>

**2001 Economic Impacts—Residents and Non-Residents**

Category	Retail Sales	Total Multiplier Effect	Salaries and Wages	Full & Part-Time Jobs	State Sales Taxes	State Income Taxes	Federal Income Taxes
Food	\$109,682,523	\$221,089,732	\$56,476,707	2,371	\$2,047,387	\$1,704,281	\$11,897,131
Lodging	\$83,828,109	\$171,193,764	\$53,658,373	2,412	\$4,694,374	\$1,733,312	\$12,099,790
Public transportation	\$28,685,834	\$57,549,520	\$17,065,203	562	\$1,606,407	\$404,247	\$2,821,943
Private transportation	\$69,531,047	\$103,823,936	\$18,805,594	654	\$9,777,803	\$469,995	\$3,280,913
Guide fees	\$2,301,686	\$4,333,385	\$1,251,657	66	n/a	\$47,114	\$328,887
Public land access fees	\$5,103,938	\$10,659,064	\$2,702,025	80	n/a	\$57,818	\$403,614
Private land access fees	\$358,638	\$675,208	\$199,510	10	\$20,084	\$7,341	\$51,246
Equipment rental	\$618,548	\$1,121,675	\$326,903	10	\$34,639	\$7,529	\$52,561
Boat fuel	\$496,143	\$740,842	\$134,188	5	\$69,770	\$3,354	\$23,411
Other boat costs	\$2,972,546	\$5,596,413	\$1,616,471	85	\$166,463	\$60,845	\$424,746
Heating & cooking fuel	\$1,098,224	\$1,639,871	\$297,029	10	\$154,438	\$7,423	\$51,821
Cameras	\$48,989,431	\$88,234,119	\$24,177,433	869	\$2,743,408	\$624,697	\$4,360,844
Film & developing	\$17,403,827	\$33,614,012	\$10,566,106	393	\$974,614	\$282,476	\$1,971,892
Commercial bird food	\$27,238,317	\$51,479,764	\$12,693,113	480	\$1,525,346	\$345,256	\$2,410,143
Other bird food	\$9,152,381	\$17,297,780	\$4,265,029	161	\$512,533	\$116,010	\$809,835
Food for other wildlife	\$1,536,726	\$2,904,376	\$716,118	27	\$86,057	\$19,479	\$135,975
Nest boxes, feeders	\$8,704,592	\$16,221,422	\$4,639,800	171	\$487,457	\$122,839	\$857,509
Other special equipment	\$1,854,052	\$3,455,114	\$988,263	36	\$103,827	\$26,164	\$182,647
Tents, tarps	\$6,342,056	\$12,373,808	\$3,678,365	141	\$355,155	\$101,629	\$709,446
Backpacking equipment	\$910,151	\$1,775,771	\$527,884	20	\$50,968	\$14,585	\$101,813
Other camping equipment	\$11,544,625	\$22,524,395	\$6,695,833	257	\$646,499	\$184,998	\$1,291,425
Day packs	\$4,498,114	\$8,776,144	\$2,608,887	100	\$251,894	\$72,081	\$503,176
Magazines & books	\$3,941,617	\$7,338,220	\$2,036,462	72	\$220,731	\$51,556	\$359,899
Binoculars, spotting scopes	\$8,824,125	\$17,716,617	\$5,544,634	194	\$494,151	\$139,380	\$972,973
Membership dues, contributions	\$12,728,433	\$27,107,745	\$8,844,988	541	n/a	\$388,698	\$2,713,399
Other auxiliary equipment	\$1,673,472	\$3,265,065	\$970,607	37	\$93,714	\$26,817	\$187,201
Off-road vehicles	\$203,211,500	\$380,164,119	\$109,720,086	2,464	\$11,379,844	\$1,770,786	\$12,361,385
Pickup, camper, motor home	\$21,641,708	\$40,486,886	\$7,948,956	262	\$1,211,936	\$188,586	\$1,316,468
Boat	\$111,004,758	\$202,978,459	\$62,143,376	2,238	\$6,216,266	\$1,608,158	\$11,226,123
Trailer, boat accessories	\$0	\$0	\$0	0	\$0	\$0	\$0
Cabin	\$0	\$0	\$0	0	\$0	\$0	\$0
Other special equipment	\$0	\$0	\$0	0	\$0	\$0	\$0
Plantings, gardening	\$14,840,573	\$26,809,336	\$8,091,452	326	\$831,072	\$234,372	\$1,636,092
Land purchases, 2001 payments	\$0	\$0	\$0	0	\$0	\$0	\$0
Land leases, 2001 payments	\$0	\$0	\$0	0	\$0	\$0	\$0
<b>TOTALS</b>	<b>\$820,717,696</b>	<b>\$1,542,946,561</b>	<b>\$429,391,051</b>	<b>15,058</b>	<b>\$46,756,837</b>	<b>\$10,821,828</b>	<b>\$75,544,307</b>