

**State and National Economic Effects of  
Fishing, Hunting and Wildlife-Related Recreation  
on U.S. Forest Service-Managed Lands**

Prepared by the:

**American Sportfishing Association**

for the:

**Wildlife, Fish and Rare Plants**

**U.S. Forest Service**

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# **State and National Economic Effects of Fishing, Hunting and Wildlife-Related Recreation on U.S. Forest Service-Managed Lands**

## **EXECUTIVE SUMMARY**

Hunting, fishing and wildlife-viewing activities are popular uses of public lands. This report quantifies the state and national economic effects of trips to U.S. Forest Service-managed lands made for the primary purpose of hunting, fishing and wildlife-viewing activities.

This report measures the economic contributions from wildlife-based recreation. Economic contributions, sometimes referred to as economic importance, track all activity resulting from resident and non-resident expenditures. Economic contributions differ from economic impacts. Impacts measure the effects of new dollars brought into the local economy by non-residents. This report only measures economic contributions. Two different sets of economic contributions are included in this report. The first set is based primarily on trip-related expenditures. These estimates only consider expenditures made within 50 miles of each USFS unit. Expenditures beyond that range have a higher likelihood of being used for purposes other than USFS recreation. Also, equipment purchases such as binoculars, fishing tackle, firearms, etc, are largely excluded from these first set of estimates. This approach is best used when considering the economic contributions of USFS-based recreation occurring in communities located in or adjacent to USFS-managed lands.

The second set of estimates includes all expenditures made in-state for wildlife-based recreation on USFS-managed lands. A portion of annual equipment expenditures are pro-rated to each trip. This approach is best to explain the economic activity statewide related to USFS-based fish and wildlife recreation, including associated manufacturing, distribution and retail activities statewide.

Both sets of estimates are based on the same number of estimated visits as reported by the U.S. Forest Service. Visits were based on the National Visitor Use Monitoring Survey's 2000 to 2003 survey cycle. Likewise, the same data was used for both sets of economic estimates to estimate the percentage of visits assigned to hunting, fishing and wildlife viewing respectively.

Based on the first set of trip-related estimates, hunting activities on USFS units annually generated \$894 million in expenditures from 2000 to 2003. These expenditures include trip-related items such as food, fuel, food and beverages, lodging and more. Also included is some degree of non-trip related items purchased within 50 miles of the hunting destination (USFS unit). These items include souvenirs, ammunition and other hunting supplies, and entertainment.

As these expenditures are spent and re-spent by businesses, additional economic effects are created for state and national economies. The \$894 million spent by hunters supported 21,400 full and part-time jobs across the country, and increased federal income tax receipts by \$111 million. Anglers annually spent \$592 million within 50 miles of their USFS fishing holes. These expenditures supported 14,500 jobs and stimulated \$66 million in federal income tax receipts. Wildlife viewers added another \$168 million in retail sales annually to the regions surrounding USFS units, which in turn supported another 4,700 jobs and nearly \$15 million in federal income taxes. Under this conservative approach, \$1.7 billion in retail sales were stimulated annually by hunting, fishing and wildlife viewing activities combined, which supported 40,600 jobs and \$192 million in annual federal income tax receipts. Detailed economic effects, including total economic activity, state and federal tax revenues, and earnings are found inside this report in Tables 9 and 10.

**Table E-1: National and State-Specific Economic Effects of Hunting on U.S. Forest Service Units, annual average from 2000-2003**

State	State and National Level Effects of Wildlife-Based Recreation Occurring In and Around National Forest Communities <sup>1</sup>			State & National Level Economic Significance of Wildlife-Based Recreation, Including Trip and Equipment Expenditures <sup>2</sup>		
	Retail Sales	Jobs (Full & Part-time)	Federal Income Tax Revenues	Retail Sales	Jobs (Full & Part-time)	Federal Income Tax Revenues
Alabama	\$12,240,331	284	\$636,867	\$33,355,929	704	\$1,580,313
Alaska	\$3,330,707	55	\$113,471	\$28,628,625	541	\$1,116,366
Arizona	\$42,409,921	780	\$3,471,083	\$314,010,337	5,511	\$24,513,986
Arkansas	\$58,679,838	1,353	\$2,680,961	\$114,903,101	2,398	\$4,660,647
California	\$49,987,225	714	\$3,745,126	\$250,778,947	4,151	\$21,517,496
Colorado	\$62,891,540	1,196	\$5,296,104	\$521,237,691	10,923	\$48,379,087
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$23,202,458	434	\$1,705,741	\$99,323,984	1,826	\$7,182,810
Georgia	\$6,824,157	128	\$504,663	\$14,441,597	288	\$1,138,363
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$72,677,270	1,547	\$3,161,408	\$364,130,708	7,111	\$14,530,096
Illinois	\$3,062,215	55	\$280,587	\$9,771,695	183	\$933,092
Indiana	\$3,419,686	63	\$240,317	\$6,331,994	116	\$440,327
Iowa	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$335,754	6	\$28,283	\$2,077,975	44	\$192,913
Kentucky	\$15,044,126	240	\$842,300	\$51,935,691	978	\$3,421,055
Louisiana	\$7,219,721	140	\$490,866	\$19,783,954	313	\$1,100,272
Maine	\$19,280	0	\$875	\$40,448	1	\$2,156
Maryland	n/a	n/a	n/a	n/a	n/a	n/a

Table E-1 (continued)

Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$12,540,461	216	\$982,929	\$47,830,049	865	\$3,938,781
Minnesota	\$32,922,284	606	\$2,542,861	\$109,862,252	2,054	\$8,897,433
Mississippi	\$76,345,204	1,573	\$3,401,065	\$160,089,814	3,028	\$6,544,820
Missouri	\$4,380,586	75	\$281,216	\$10,291,541	188	\$705,034
Montana	\$87,396,772	1,937	\$3,334,174	\$383,082,910	8,551	\$14,717,004
Nebraska	\$1,313,934	28	\$56,446	\$33,235,217	716	\$1,423,542
Nevada	\$25,648,895	366	\$1,659,358	\$311,998,754	4,504	\$20,393,635
New Hampshire	\$302,057	5	\$13,710	\$633,688	11	\$33,785
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$26,245,082	543	\$1,139,134	\$154,944,185	3,191	\$6,735,005
New York	\$160,300	2	\$8,514	\$265,627	4	\$14,051
North Carolina	\$10,559,418	204	\$745,565	\$25,339,826	525	\$1,918,151
North Dakota	\$6,147,458	119	\$232,962	\$29,667,328	604	\$1,178,928
Ohio	\$1,042,157	20	\$83,000	\$2,527,205	51	\$214,317
Oklahoma	\$8,229,621	189	\$374,960	\$16,036,218	345	\$686,585
Oregon	\$45,423,073	783	\$3,009,796	\$347,149,636	5,965	\$22,899,798
Pennsylvania	\$11,695,510	214	\$994,319	\$24,941,991	411	\$1,908,456
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$14,234,744	245	\$885,608	\$31,332,979	590	\$2,128,971
South Dakota	\$4,145,378	87	\$164,757	\$25,858,690	573	\$1,083,042
Tennessee	\$9,315,099	167	\$740,240	\$29,979,235	560	\$2,483,153
Texas	\$9,364,113	188	\$861,277	\$39,162,355	710	\$3,216,219
Utah	\$29,970,619	671	\$1,603,179	\$143,301,367	3,285	\$7,846,075
Vermont	\$7,854,697	117	\$417,208	\$13,015,729	195	\$688,509
Virginia	\$28,032,799	507	\$1,886,943	\$50,218,030	853	\$3,174,912
Washington	\$25,016,630	443	\$1,980,643	\$150,790,725	2,441	\$10,893,907
West Virginia	\$4,897,162	93	\$231,753	\$9,363,221	158	\$393,085
Wisconsin	\$24,086,943	490	\$1,145,309	\$49,664,169	994	\$2,324,998
Wyoming	\$25,239,330	507	\$954,972	\$142,485,720	3,114	\$5,833,011
United States	\$893,854,555	21,439	\$111,286,370	\$4,173,821,140	97,191	\$504,502,972

<sup>1</sup> These figures only include expenditures made by people within 50 miles of a USFS unit and generally exclude expenditures for some trip and equipment purchased outside the 50 mile radius.

<sup>2</sup> These figures include all trip-related and equipment purchases made within the state and assigned to USFS wildlife-based recreation

**Table E-2: National and State-Specific Economic Effects of Fishing on U.S. Forest Service Units, annual average from 2000-2003**

State	State and National Level Effects of Wildlife-Based Recreation Occurring In and Around National Forest Communities <sup>1</sup>			State & National Level Economic Significance of Wildlife-Based Recreation, Including Trip-related and Equipment Expenditures <sup>2</sup>		
	Retail Sales	Jobs (Full & Part-time)	Federal Income Tax Revenues	Retail Sales	Jobs (Full & Part-time)	Federal Income Tax Revenues
Alabama	\$612,206	14	\$31,612	\$1,751,907	39	\$87,999
Alaska	\$11,287,142	181	\$404,524	\$111,024,579	2,109	\$4,632,101
Arizona	\$37,735,554	730	\$3,060,381	\$196,254,801	3,735	\$15,549,444
Arkansas	\$7,080,186	168	\$367,756	\$14,721,235	327	\$713,950
California	\$96,716,825	1,718	\$9,225,320	\$462,056,778	8,224	\$45,413,427
Colorado	\$48,057,724	947	\$4,387,896	\$210,275,479	4,067	\$18,735,158
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$12,975,816	252	\$1,017,003	\$62,336,581	1,152	\$4,606,114
Georgia	\$10,699,377	205	\$924,068	\$22,065,850	413	\$1,857,275
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$25,859,292	586	\$1,206,311	\$99,042,083	1,897	\$3,904,377
Illinois	\$1,849,507	34	\$191,595	\$3,765,445	67	\$372,719
Indiana	\$5,620,873	110	\$450,745	\$11,266,525	231	\$927,673
Iowa	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$329,367	6	\$30,085	\$901,121	17	\$80,322
Kentucky	\$12,412,103	241	\$775,702	\$29,635,721	585	\$1,870,964
Louisiana	\$476,057	9	\$33,788	\$1,288,303	24	\$87,930
Maine	\$27,121	0	\$1,349	\$77,501	1	\$4,069
Maryland	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$6,993,310	129	\$557,572	\$18,068,635	330	\$1,475,699
Minnesota	\$50,153,141	994	\$4,054,939	\$153,085,171	3,041	\$12,171,095
Mississippi	\$9,787,108	203	\$465,868	\$12,114,798	259	\$583,771
Missouri	\$1,027,018	18	\$70,533	\$3,234,537	58	\$223,533
Montana	\$31,260,440	724	\$1,381,342	\$115,568,640	2,549	\$4,839,345
Nebraska	\$130,921	3	\$6,568	\$20,405,584	417	\$936,075
Nevada	\$3,340,414	50	\$244,739	\$24,520,236	305	\$1,501,402
New Hampshire	\$424,899	8	\$21,134	\$1,214,186	22	\$63,750
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$8,528,361	180	\$508,801	\$41,734,432	784	\$2,554,270
New York	\$115,564	2	\$6,309	\$236,851	4	\$13,471
North Carolina	\$16,710,499	342	\$1,220,012	\$54,603,251	1,226	\$4,621,077
North Dakota	\$227,567	5	\$10,113	\$879,424	17	\$35,312
Ohio	\$2,798,702	57	\$221,175	\$6,015,744	124	\$520,458

State	Expenditures	Jobs	Expenditures	Expenditures	Jobs	Expenditures
Oklahoma	\$1,441,811	34	\$74,817	\$2,998,721	67	\$147,150
Oregon	\$39,579,205	718	\$2,594,603	\$113,037,013	1,963	\$7,023,306
Pennsylvania	\$5,311,243	100	\$447,084	\$8,200,968	154	\$658,185
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$4,360,022	90	\$327,726	\$11,469,410	239	\$838,922
South Dakota	\$5,274,916	118	\$235,923	\$19,243,961	416	\$826,826
Tennessee	\$14,832,335	276	\$1,158,074	\$25,628,107	529	\$2,210,009
Texas	\$2,820,586	57	\$258,995	\$8,940,075	161	\$749,885
Utah	\$43,396,732	1,006	\$2,496,807	\$184,460,632	4,146	\$10,264,173
Vermont	\$5,662,656	90	\$309,141	\$11,605,704	185	\$660,098
Virginia	\$19,831,294	368	\$1,468,134	\$26,843,509	478	\$1,927,910
Washington	\$18,934,603	347	\$1,496,651	\$69,020,170	1,175	\$5,168,317
West Virginia	\$7,179,360	142	\$309,432	\$9,332,583	178	\$388,766
Wisconsin	\$7,638,307	161	\$381,795	\$20,781,223	451	\$1,058,683
Wyoming	\$12,606,075	232	\$427,268	\$48,128,759	808	\$1,501,117
United States	\$592,106,240	14,463	\$66,149,596	\$2,237,836,231	57,707	\$263,938,053

<sup>1</sup> These figures only include expenditures made by people within 50 miles of a USFS unit and generally exclude expenditures for some trip-related and equipment purchased outside the 50 mile radius.

<sup>2</sup> These figures include all trip-related and equipment purchases made within the state and assigned to USFS wildlife-based recreation

**Table E-3: National and State-Specific Economic Effects Generated by Wildlife-Viewing on U.S. Forest Service Units, annual average from 2000-2003**

State	State and National Level Effects of Wildlife-Based Recreation Occurring In and Around National Forest Communities <sup>1</sup>			State & National Level Economic Significance of Wildlife-Based Recreation, Including Trip-related and Equipment Expenditures <sup>2</sup>		
	Retail Sales <sup>3</sup>	Jobs (Full & Part-time)	Federal Income Tax Revenues	Retail Sales	Jobs (Full & Part-time)	Federal Income Tax Revenues
Alabama	\$1,261,529	33	\$65,068	\$9,461,560	265	\$518,234
Alaska	\$9,772,468	292	\$610,519	\$139,012,564	3,574	\$7,523,230
Arizona	\$20,100,108	426	\$1,104,163	\$318,925,475	6,971	\$18,147,703
Arkansas	\$2,582,629	65	\$105,162	\$12,788,159	302	\$494,964
California	\$11,174,830	288	\$903,139	\$67,214,588	1,563	\$4,852,118
Colorado	\$19,631,522	524	\$1,440,333	\$101,337,950	2,596	\$7,155,871
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$2,807,735	61	\$187,109	\$22,607,773	506	\$1,564,105
Georgia	\$1,610,072	38	\$106,382	\$9,657,705	225	\$625,462



Hawaii	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$5,572,579	129	\$201,598	\$30,412,518	799	\$1,253,060
Illinois	\$578,615	13	\$45,463	\$1,731,415	38	\$136,202
Indiana	\$40,091	1	\$2,587	\$168,468	5	\$10,782
Iowa	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$204,892	5	\$15,035	\$366,350	9	\$25,874
Kentucky	\$699,858	23	\$38,490	\$2,727,300	84	\$139,376
Louisiana	\$949,037	25	\$48,813	\$3,557,229	106	\$205,620
Maine	\$171,560	5	\$11,370	\$971,263	25	\$55,835
Maryland	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$2,307,189	59	\$158,245	\$6,138,235	154	\$405,790
Minnesota	\$2,024,905	58	\$129,377	\$3,809,220	91	\$234,535
Mississippi	\$5,577,462	112	\$184,435	\$62,600,585	1,293	\$2,145,127
Missouri	\$153,651	4	\$9,370	\$606,181	15	\$35,658
Montana	\$9,558,004	275	\$380,938	\$52,664,462	1,545	\$2,149,937
Nebraska	\$135,812	3	\$6,805	\$18,921,395	474	\$992,024
Nevada	\$2,631,050	41	\$131,867	\$38,750,319	654	\$2,128,143
New Hampshire	\$2,687,766	71	\$178,124	\$15,216,451	385	\$874,753
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$17,032,479	411	\$707,859	\$143,693,943	3,774	\$6,551,172
New York	\$56,191	2	\$3,795	\$135,865	4	\$8,728
North Carolina	\$6,050,442	163	\$381,218	\$42,190,180	1,051	\$2,382,732
North Dakota	\$610,700	16	\$24,832	\$1,820,762	50	\$76,144
Ohio	\$0	0	\$0	\$0	0	\$0
Oklahoma	\$776,486	19	\$31,815	\$4,621,781	122	\$204,138
Oregon	\$11,282,746	302	\$620,482	\$46,483,908	1,301	\$2,622,204
Pennsylvania	\$3,277,763	72	\$205,915	\$9,277,963	215	\$628,949
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$577,807	17	\$32,811	\$1,941,110	53	\$106,746
South Dakota	\$808,857	24	\$38,045	\$2,611,322	74	\$120,350
Tennessee	\$0	0	\$0	\$0	0	\$0
Texas	\$351,484	9	\$14,509	\$2,910,563	77	\$131,374
Utah	\$4,342,982	127	\$229,151	\$31,676,995	933	\$1,679,680
Vermont	\$2,753,347	80	\$185,962	\$6,657,379	188	\$427,695
Virginia	\$4,746,243	144	\$325,216	\$18,678,155	595	\$1,340,583
Washington	\$6,276,365	136	\$396,733	\$25,655,215	590	\$1,767,939
West Virginia	\$884,170	22	\$40,428	\$2,286,958	64	\$124,840
Wisconsin	\$1,802,042	47	\$103,869	\$6,597,265	171	\$380,263
Wyoming	\$4,581,251	115	\$246,396	\$25,135,839	628	\$1,355,852
United States	\$168,444,716	4,662	\$14,743,186	\$1,292,022,366	34,570	\$109,312,939

<sup>1</sup> These figures only include expenditures made by people within 50 miles of a USFS unit.

<sup>2</sup> These figures include all trip-related & equipment purchases made within the state.

<sup>3</sup> An additional \$3,235,807 was spent in Puerto Rico for wildlife viewing

**Table E-4: Economic Effects Generated by Combined Hunting, Fishing and Wildlife-Viewing on U.S. Forest Service Units, annual average from 2000-2003\***

	State and National Level Effects of Wildlife-Based Recreation Occurring In and Around National Forest Communities <sup>1</sup>			State & National Level Economic Significance of Wildlife-Based Recreation, Including Trip-related and Equipment Expenditures <sup>2</sup>		
State	Retail Sales <sup>3</sup>	Jobs (Full & Part-time)	Federal Income Tax Revenues	Retail Sales	Jobs (Full & Part-time)	Federal Income Tax Revenues
Alabama	\$14,114,066	331	\$733,546	\$44,569,396	1,008	\$2,186,547
Alaska	\$24,390,318	529	\$1,128,513	\$278,665,767	6,224	\$13,271,697
Arizona	\$100,245,582	1,936	\$7,635,626	\$829,190,612	16,217	\$58,211,132
Arkansas	\$68,342,653	1,586	\$3,153,879	\$142,412,494	3,027	\$5,869,561
California	\$157,878,880	2,719	\$13,873,585	\$780,050,313	13,938	\$71,783,042
Colorado	\$130,580,786	2,667	\$11,124,333	\$832,851,120	17,587	\$74,270,117
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$38,986,009	746	\$2,909,853	\$184,268,338	3,483	\$13,353,028
Georgia	\$19,133,607	371	\$1,535,114	\$46,165,152	926	\$3,621,100
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$104,109,141	2,262	\$4,569,316	\$493,585,309	9,807	\$19,687,532
Illinois	\$5,490,338	102	\$517,645	\$15,268,555	288	\$1,442,013
Indiana	\$9,080,649	175	\$693,649	\$17,766,987	352	\$1,378,781
Iowa	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$870,013	18	\$73,403	\$3,345,445	70	\$299,110
Kentucky	\$28,156,087	505	\$1,656,492	\$84,298,712	1,647	\$5,431,394
Louisiana	\$8,644,814	174	\$573,467	\$24,629,487	443	\$1,393,822
Maine	\$217,961	5	\$13,594	\$1,089,212	27	\$62,061
Maryland	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$21,840,960	404	\$1,698,746	\$72,036,919	1,349	\$5,820,270
Minnesota	\$85,100,330	1,657	\$6,727,176	\$266,756,642	5,187	\$21,303,063
Mississippi	\$91,709,773	1,889	\$4,051,367	\$234,805,197	4,579	\$9,273,718
Missouri	\$5,561,255	97	\$361,119	\$14,132,259	262	\$964,225
Montana	\$128,215,216	2,936	\$5,096,455	\$551,316,013	12,645	\$21,706,286
Nebraska	\$1,580,667	35	\$69,819	\$72,562,197	1,606	\$3,351,641
Nevada	\$31,620,359	457	\$2,035,964	\$375,269,310	5,463	\$24,023,180
New Hampshire	\$3,414,722	83	\$212,968	\$17,064,325	417	\$972,289
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$51,805,922	1,134	\$2,355,794	\$340,372,559	7,749	\$15,840,447
New York	\$332,055	6	\$18,619	\$638,343	12	\$36,251
North Carolina	\$33,320,358	710	\$2,346,796	\$122,133,257	2,802	\$8,921,960
North Dakota	\$6,985,726	140	\$267,908	\$32,367,514	671	\$1,290,384
Ohio	\$3,840,859	77	\$304,174	\$8,542,948	175	\$734,774

Oklahoma	\$10,447,917	242	\$481,591	\$23,656,720	534	\$1,037,873
Oregon	\$96,285,024	1,804	\$6,224,880	\$506,670,557	9,230	\$32,545,309
Pennsylvania	\$20,284,516	386	\$1,647,318	\$42,420,922	780	\$3,195,591
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$19,172,573	352	\$1,246,145	\$44,743,499	882	\$3,074,638
South Dakota	\$10,229,151	228	\$438,725	\$47,713,973	1,063	\$2,030,218
Tennessee	\$24,147,434	443	\$1,898,313	\$55,607,342	1,089	\$4,693,162
Texas	\$12,536,182	254	\$1,134,781	\$51,012,992	948	\$4,097,478
Utah	\$77,710,333	1,805	\$4,329,137	\$359,438,994	8,363	\$19,789,928
Vermont	\$16,270,700	287	\$912,311	\$31,278,812	568	\$1,776,302
Virginia	\$52,610,336	1,018	\$3,680,294	\$95,739,694	1,925	\$6,443,404
Washington	\$50,227,598	926	\$3,874,026	\$245,466,110	4,206	\$17,830,162
West Virginia	\$12,960,691	256	\$581,612	\$20,982,763	399	\$906,690
Wisconsin	\$6,597,265	171	\$380,263	\$6,597,265	171	\$380,263
Wyoming	\$42,426,656	854	\$1,628,635	\$215,750,318	4,550	\$8,689,981
United States	\$1,654,405,511	40,564	\$192,179,152	\$7,703,679,737	189,467	\$877,753,964

<sup>1</sup> These figures only include expenditures made by people within 50 miles of a USFS unit and generally exclude expenditures for some trip-related and equipment purchased outside the 50 mile radius.

<sup>2</sup> These figures include all trip-related and equipment purchases made within the state and assigned to USFS wildlife-based recreation

<sup>3</sup> An additional \$3,235,807 was spent in Puerto Rico for wildlife viewing

By including equipment expenditures, the second set of economic estimates yielded a higher level of effects. Hunters annually spent \$4.2 billion from 2000-2003 for USFS-oriented hunting activities. These expenditures in turn nationally supported 97,000 jobs and generated \$505 million in federal income tax revenues. Anglers spent over \$2.2 billion, supporting 57,700 jobs and \$264 million in federal income tax revenues. Wildlife viewers spent \$1.3 billion, which supported 34,600 jobs and \$109 million in federal tax revenues. Across the U.S., hunters, anglers and wildlife viewers combined spent \$7.7 billion for their activities and equipment used for USFS-related recreation. These expenditures supported 189,000 jobs and \$878 million in federal income tax receipts. National and state results are listed in Tables E-1, E-2 and E-3 for hunting, fishing and wildlife-viewing, respectively. Table E-4 presents the economic effects for all wildlife-based recreation combined. Detailed economic effects, including total economic activity, state and federal tax revenues, and earnings are found inside this report in Tables 10 and 11.

Colorado was the state enjoying the greatest level of hunter expenditures (\$521 million), while California was tops for fishing (\$462 million) and Arizona for wildlife-viewing expenditures (\$319 million). A much higher percentage of total visits to Arizona forests are made for the purpose of wildlife viewing compared to other high-use states. National and state results are listed in Tables E-1, E-2 and E-3 for hunting, fishing and wildlife-viewing, respectively. Table E-4 presents the effects for all wildlife-based recreation combined.

Due to a change in data sources and methodologies, the results in this report should not be compared to previous U.S. Forest Service (USFS) economic reports produced by the American Sportfishing Association. Those reports were based solely on the U.S. Fish and Wildlife Service's (USFWS) *National Survey of Fishing, Hunting and Wildlife-Associated Recreation*. This report uses the National Visitor Use Monitoring Survey recently developed by the USFS as the basis for estimating annual visitor levels for each USFS unit. Due to its targeted methodology, the new USFS data is more accurate in regards to USFS participation levels and cannot be directly compared to data from the USFWS Survey.

Table E-5 presents the number of visits made annually per state for the *primary* purpose of fishing, hunting and wildlife-viewing. Non-primary trips are excluded. A non-primary trip is a trip made, for example, to camp. While there, the party may also fish, view wildlife, and more. Including the non-primary trips in the estimates can overstate the economic effects and result in double counting.

**Table E-5: Number of Visits to Forest Service Units by State for the Primary Purpose of Hunting, Fishing and Wildlife-Viewing (annual average from 2000-2003)<sup>1</sup>**

State	HUNTING	FISHING	VIEWING
Alabama	212,400	15,104	40,592
Alaska	57,796	278,470	314,447
Arizona	735,917	930,990	646,758
Arkansas	1,018,240	174,678	83,101
California	867,402	2,386,143	359,571
Colorado	1,091,324	1,185,653	631,680
Connecticut	n/a	n/a	n/a
Delaware	n/a	n/a	n/a
Florida	402,620	320,132	90,344
Georgia	118,416	263,969	51,807
Hawaii	n/a	n/a	n/a
Idaho	1,261,130	637,986	179,308
Illinois	53,137	45,630	18,618
Indiana	59,340	138,675	1,290
Iowa	n/a	n/a	n/a
Kansas	5,826	8,126	6,593
Kentucky	274,763	869,705	233,653
Louisiana	125,280	11,745	30,537
Maine	335	669	5,520
Maryland	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a
Michigan	217,608	172,535	74,238

<sup>1</sup> Developed from total USFS visits data provided by D. English (personal communications, July, 2005) multiplied by the percentage of visitors participating in each activity as provided by D. English (personal communications, July, 2005), then summed to the state level.

<b>Table E-5 (continued)</b>			
Minnesota	571,283	1,237,350	65,155
Mississippi	1,324,778	241,462	179,465
Missouri	76,014	25,338	4,944
Montana	1,516,550	771,240	307,546
Nebraska	22,800	3,230	4,370
Nevada	445,072	82,413	84,659
New Hampshire	5,241	10,483	86,484
New Jersey	n/a	n/a	n/a
New Mexico	455,417	210,407	548,051
New York	2,782	2,851	1,808
North Carolina	183,232	412,272	194,684
North Dakota	106,674	5,614	19,650
Ohio	18,084	69,048	0
Oklahoma	142,804	35,572	24,985
Oregon	788,203	976,476	363,043
Pennsylvania	202,946	131,036	105,468
Rhode Island	n/a	n/a	n/a
South Carolina	247,008	107,568	18,592
South Dakota	71,933	130,140	26,026
Tennessee	161,640	365,935	0
Texas	162,491	69,588	11,310
Utah	520,064	1,070,660	139,743
Vermont	136,298	139,706	88,594
Virginia	486,438	489,266	152,719
Washington	434,100	467,144	201,954
West Virginia	84,978	177,125	28,450
Wisconsin	417,968	188,448	57,984
Wyoming	437,965	311,010	147,410
United States	15,524,296	15,171,592	5,631,150

<sup>1</sup> plus 104,118 wildlife viewing visits in Puerto Rico

## ECONOMIC CONCEPTS AND DESCRIPTIONS

The effects created by people's expenditures can be referred to in several ways. **Economic contributions** explain the total economic activity resulting from all purchases related to the activity or products in question. These would include, for example, all expenditures made by residents and non-residents for fishing. Economic contributions explain the total effects of people's expenditures such as jobs supported, paychecks and business profits generated, and more. If people stopped spending money on the activity in question, such as fishing, and did not spend it anywhere else<sup>2</sup>, the economy would contract by the reported amounts. Knowing that if people could not engage in an activity such as fishing, many would be likely to spend some or all of their fishing money on other activities. Whether or not they would spend their dollars in the same community or on items creating a similar level of effects is unknown. Recognizing there are substitutes to activities such as fishing that residents could spend for, economists often measure **economic impacts**. Economic impacts measure the new dollars brought into the economy by non-residents or from the sale of items made locally and exported. Non-resident data were not available for this project and economic impacts are not reported.

The economic benefits of outdoor recreation can be estimated by two types of economic measures: economic effects (either contributions or impacts) and economic values. An economic effect addresses the business and financial activity resulting from user's expenditures. Economic value measures the intrinsic value received by the user in the course of their outdoor activity. This concept is also known as "consumer surplus". Only **economic contributions**, otherwise referred to as economic **effects**, are addressed in this report.

There are three types of economic effects: direct, indirect and induced. A direct effect is created by the initial purchase made by the consumer. Only the amount of the purchase that remains in the region under study is retained as a direct effect. For example, when a person buys a restaurant meal for \$20, there is a direct effect to the restaurant and the local economy, of \$20, assuming all of the supplies needed for the meal were provided locally. However, recognizing much of the food served was likely bought from wholesalers outside of the region of study, a lower amount, maybe \$10, actually remains in the local economy as the direct effect. Indirect effects are the secondary effects generated from a direct effect. For example, the restaurant must purchase additional food; the wholesaler must purchase additional supplies; food manufacturers buy purchase more inputs and farm products, and so on. Therefore, the original expenditure of \$20 for dinner benefits a host of other industries and people. An induced effect results from the wages and salaries paid by the directly and indirectly affected industries. The employees of these industries spend their income on various goods and services. These expenditures are known as induced effects which, in turn, create a continual cycle of additional indirect and induced effects touching nearly every corner of the economy.

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<sup>2</sup> Including investment accounts and financial products.

The sum of the direct, indirect and induced effects equals the total economic effect. As the original retail purchase goes through round after round of indirect and induced effects, the economic effect 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 sale. 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 examination ends.

## METHODS and RESULTS

The approaches used to estimate the economic contributions of wildlife-related activities on U.S. Forest Service-managed areas are separated into three primary stages:

- (1) *Participation*: Develop state and national estimates of the number of primary fishing, hunting and wildlife-viewing trips to U.S. Forest Service-managed lands.
- (2) *Expenditures*: Multiply the number of trips by the average dollars spent per trip to estimate the total expenditures attributable to people who visited USDA national forests to fish, hunt and view wildlife.
- (3) *Contributions*: Generate economic contribution estimates by matching the expenditures per state and nation with appropriate economic multipliers.

The economic effects of fishing, hunting and wildlife viewing on USFS-managed lands were measured twice. The first set of estimates only considers expenditures made within 50 miles of each USFS unit. Expenditures beyond that range have a higher likelihood of being used for purposes other than USFS recreation. This excludes most equipment purchases such as binoculars, fishing tackle, firearms, etc., that are commonly bought in a person's home region and brought with them on the trip. This method is based mostly on trip-related expenditures made within 50 miles of a USFS-managed forest and will be referred to as the "Trip-related Method."

The second method quantifies all expenditures made in-state for a USFS-related fish and wildlife-related trip. Each participant's annual equipment expenditures are pro-rated to each trip taken annually. The results from this method are best used to explain the economic activity statewide related to USFS-based fish and wildlife recreation, not just the activity in the communities surrounding USFS-managed lands. This method will be referred to as the "Travel + Equipment Method."

Both methods exclude non-primary trips. For example, the motivation to visit a forest may have been camping or hiking. Fishing was a secondary activity and not the reason why the trip was taken. This would be a non-primary fishing trip. Even for non-primary purpose trips, additional dollars may have been spent in the communities surrounding the forest for fishing (tackle, bait, clothes, etc). It is not possible at this time to account for the dollars attributable to secondary purpose activities. Effects from secondary purpose activities are not included in this report.

### I. Participation



For both methods, participation data were obtained from the National Visitor Use Monitoring Program (NVUM), conducted by the U.S. Forest Service’s Recreation, Heritage & Wilderness Resources office. The NVUM is “...designed to provide an estimate of national forest recreation visits” (English, et al; 2001) and conducts regular surveys on each individual forest unit to estimate total visitors, the primary motivations for their visits, and to develop expenditure profiles for a sub-sample of forest visitors. More information about the NVUM is available at [www.fs.fed.us/recreation/programs/nvum/](http://www.fs.fed.us/recreation/programs/nvum/).

Visit data from the first full cycle of NVUM surveys were used in this project. The estimated number of annual visits per forest unit was downloaded from the NVUM survey. For both methods, the estimated annual visits were then multiplied by the percentage of all trips made for the *primary* purpose of fishing, hunting and wildlife viewing. These percentage were also obtained from NVUM (English, 2006).

The next step in the trip-related method was to divide the visitation data into sub-categories of users. This step was not needed for the Travel+Equipment Cost method. Analyses of expenditures reported by forest visitors show the primary factor determining the amount spent by a visitor was the type of trip taken and not the specific activity or forest visited (Stynes and White, 2006). The trip segments pertinent to this study, as defined by Stynes and White (2006), are defined in Figure 1.

**Figure 1 (Stynes and White; 2006):**

Visitors who reside greater than 50 miles from the forest visited:
1. Non-local day trips: Non-local residents on day trips
2. Non-local OVN: Non-local residents who stayed overnight, using lodging on or off the NF
Visitors who live within 50 miles of the forest visited:
3. Local day trips: Local residents on day trips
4. Local OVN: Non-local residents who stayed overnight, using lodging on or off the NF

A fifth category of trip types was not included, non-primary visits. As this project was only interested in primary activities, the proportion of trips assigned to non-primary trips were excluded from this analysis. Appendix A presents the total estimated number of hunting, fishing and wildlife-viewing visits per state.

The data used to divide total visits into trip types were provided by Stynes and White (2006). These data, from the NVUM survey, report the percentage of all trips taken nationally by trip type. Due to limited sample sizes in the NVUM data, estimating the number of trips per trip type

at the forest and state levels were not possible. Table 1 presents the percentage of trips per segment specific to hunting, fishing and wildlife-viewing.

**Table 1: Percent of Hunting, Fishing and Wildlife-Viewing Trips by Trip Type Segment (Stynes and White, 2006)**

<b>Segment Shares - Trip Types.</b>					
	<b>Non-Local</b>		<b>Local</b>		<b>Non-Primary</b>
	<b>Day</b>	<b>OVN-NF</b>	<b>Day</b>	<b>OVN-NF</b>	
Hunting	5%	20%	50%	22%	3%
Fishing	11%	24%	50%	11%	4%
Viewing	10%	25%	42%	7%	16%

The visitation data developed up to this point represent the total number of visits. However, the expenditure data from the NVUM survey used in the trip-related method explains the dollars spent per travel party and not per person. There is typically more than one person per auto, or travel party, entering a forest. Therefore, for the trip-related method which uses NVUM expenditure data, a step was made to adjust the number of visits to reflect the number of parties visiting each forest.<sup>3</sup> The data to make this conversion were obtained from Stynes and White (2006). Table 2 presents the average number of people identified nationally per fishing, hunting and wildlife-viewing party based on the NVUM surveys. State and forest unit-specific results were not possible based on the limited sample sizes.

**Table 2. Average Number of People Per Party for Hunting, Fishing and Wildlife-Related Trips (Stynes and White, 2006)**

	<b>Average Party Size</b>				
	<b>Non-Local</b>		<b>Local</b>		<b>Non-Primary</b>
	<b>Day</b>	<b>OVN-NF</b>	<b>Day</b>	<b>OVN-NF</b>	
Hunting	2.1	1.9	1.7	1.9	2.0
Fishing	2.0	2.3	2.1	2.5	2.1
Wildlife-Viewing	2.5	2.7	2.5	2.4	2.7

<sup>3</sup> Expenditure data for the travel+equipment method reports dollars per person, not per party. A similar adjustment was not necessary for the travel+equipment method which used USFWS expenditures.

## II. Expenditures

### *Expenditures Per Trip: The Trip-Related Method*

Developing the state and regional expenditure estimates was a simple process of matching a per-trip expenditure profile for hunting, fishing or wildlife-viewing with the appropriate estimate of visits. The expenditure profiles are found in Stynes and White (2006). These profiles provide average expenditures made for each of the four primary trip segments presented in Figure 1. A statistical analysis showed that the average expenditure did not vary much between forests, but varied based on the type and duration of the trip (Stynes and White, 2006). The expenditures per trip segment are presented in Table 3.

**Table 3. Average Expenditure Per Party for Hunting, Fishing and Wildlife-Related Trips (Stynes and White, 2006)**

	Non-Local Trips:		Local Trips:	
	Day	OVN	Day	OVN
Hunting	\$79.72	\$221.27	\$50.74	\$151.27
Fishing	\$42.14	\$220.39	\$41.65	\$120.48
Wildlife-Viewing	\$52.10	\$223.46	\$26.99	\$129.23

The expenditure profiles report the amount spent per party, not per visit. In addition, the expenditures only represent the amount spent within 50 miles of the interview site for trip-related expenses. Expenditures made for travel beyond a 50-mile radius around the forest are excluded as are any durable goods used on the trip that were purchased outside of the radius. This exclusion is made to help each USFS unit measure the amount of expenditures and benefits generated for communities within and around a forest. All dollars are reported in 2002 terms.

Estimates of the total trip-related expenditures per state were generated by multiplying the number of trips per forest for each activity (hunting, fishing and wildlife viewing) by the appropriate expenditure profile. Then, the amounts spent per state were developed by summing the amount spent for all USFS-managed lands within each state. In cases where a forest crosses boundaries for multiple states, the expenditures were pro-rated based on the percentage of the forest within each state. The total expenditures per state are presented in Appendix B.

### *Expenditures Per Trip: The Travel+Equipment Method:*

Estimates of the total expenditures (trip-related expenditures plus equipment (durable goods)) made for primary activities within each unit were developed by combining the U.S. Forest Service's NVUM data with data from the U.S. Fish and Wildlife Service/Association of Fish and Wildlife Agencies' 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation. It is reasonable to say all hunters, anglers and wildlife-viewers use some level of equipment during their visits to a forest. With each trip, equipment is worn, or depreciated, to

some unknown degree by usage within a forest (or anywhere); causing the owner to replace that items sooner than if the item had been left at home. This method is based on the assumption that pro-rating annual equipment expenditures across all trips taken in a year, and assigning that portion attributable to USFS trips to this study, is a logical approximation of the annual equipment consumed by activities on USFS Forest Service-managed lands. If the focus requires a look at the economic effects generated by all expenditures associated with activities on forest units, then including equipment estimates is reasonable. Also, including expenditures made outside of 50 miles of a forest is reasonable.

It is deemed reasonable to appropriate a small percentage of an equipment purchase price to a forest's economic effect, if that item was used in that forest. The availability of equipment from retailers within and around most forests attests to the point that some level of equipment sales can be attributed to activities on a forest unit, and that the presence of recreational opportunities on USDA-managed lands stimulates sales of equipment in areas beyond the 50 mile radius. An example would be an REI retailer in the Washington, D.C. metro area who sells camping gear for local residents planning to visit the George Washington or Jefferson National Forests. Please note that in this study "equipment" will also include the small level of expenditures made for services associated with equipment, such as maintenance and storage.

When estimating portions of equipment expenditures associated with usage on Forest Service-managed lands, there are two unknowns to consider when using these estimates:

1. Given available data, the amount of equipment that would not have been purchased annually if the user could not visit a USDA forest unit is unknown. The assumption is made that if USFS lands were not available, overall recreation participation and therefore equipment purchases, would decrease. This Travel+Equipment Method helps provide a better understanding of the total economic losses that would result if USFS recreation was not available.
2. The level that substitute sites would play is unknown. For example, if Forest Service-managed lands were not available, would the recreationist have still participated elsewhere, but maybe less frequently and possibly bought lower priced substitute equipment as a result? Data are not available to address this issue, and the reader should be aware of this possible limitation. This same assumption would hold true for the "Travel Only" method presented earlier.

Participant expenditures, including equipment, are estimated using data from the 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation (Survey). The Survey is developed every five years by the U.S. Fish and Wildlife Service at the request of the Association of Fish and Wildlife Agencies. The U.S. Bureau of the Census is contracted to field the Survey. The Survey inquires about the total annual expenditures made by anglers, hunters and wildlife viewers, including the amount spent for specific trip-related items and equipment. The Survey also tracks the total number of days of annual participation.

Recognizing that not all outdoor recreationists replace their equipment every year, their equipment purchases in one specific year will not reflect the total products in use that year. Some items, such as cooking utensils and firearms, can last nearly a lifetime. However, it is reasonable to assume that across all users, a *percentage* of all equipment is replaced each year based on either wear-and-tear or obsolescence in face of new products that promise greater service. Collectively, the total amount spent for equipment in a year reflects the level of products worn out or made obsolete that year, plus the growth rate in the number of recreationists. Therefore, recognizing a lack of better data, the annual expenditures made for equipment in one year are a decent measure of the percentage of all equipment “consumed” that year.

Per-day expenditures for travel and equipment were estimated by dividing the entire amount reported in the Survey spent by hunters, anglers and wildlife viewers respectively by their total days of activity. This yields the total dollars attributed to a day of recreation. Table 4 presents the average expenditure per day and the percentage attributable to equipment based on all hunting trips reported nationally and not just for trips made on USFS-managed lands. Equipment represents nearly one-half or more of all expenditures. Please note the estimates in Table 4 are per-person and per day, not per-party and per trip as reported in Table 3. Steps were taken to convert the NVUM’s number of trip estimates to number of days to ensure the trip and expenditure data matched. Average days per trip data for each of the three wildlife-based activities examined were obtained from the NVUM survey (English, 2006) and are presented in Appendix C.<sup>4</sup>

**Table 4. Average Expenditure Per Day and Estimated Percentage of All Purchases Composed of Equipment, 2001**

	<u>Average Per USFS Day</u>	<u>% Travel-Related</u>	<u>% Equipment</u>
Hunting	\$106.94	21.5%	78.5%
Fishing	\$82.43	35.3%	64.7%
Wildlife Viewing	\$137.72	21.2%	78.8%

Estimates of the total travel-related expenditures per state were generated by multiplying the number of days per forest for each activity (hunting, fishing and wildlife viewing) by the appropriate expenditure profile. Then, the amounts spent per state were developed by summing the amount spent for all USFS-managed lands within each state. In cases where a forest crosses boundaries for multiple states, the expenditures were pro-rated based on the percentage of the forest within each state. The total expenditures per state are presented in Appendix C.

<sup>4</sup> For most forest units, sample sizes were limited. In cases where the sample size (N) for a specific forest unit exceeded 99, the estimate of days per trip for that forest were used in the report. In all other cases, national averages, as provided by English, were used (hunting: 2.54 days, fishing: 1.86 days and wildlife viewing: 1.56 days).

### III. Effects

The scope of the study was to develop national and state-level economic effects for fishing, hunting and wildlife viewing activities that occurred within USDA forest units. Resources did not permit the construction of new economic models unique to each forest or state. Information on the multipliers applicable to each state was obtained from the three sources listed below. These will be collectively referred to as the “source reports”:

Hunting: The Economic Importance of Hunting in America (IAFWA 2002). Produced by the Association of Fish and Wildlife Agencies (AFWA) under funding from the AFWA/U.S. Fish and Wildlife Services’ Multi-State Grants program, this study was also based on the 2001 Survey. This report provided economic effect estimates generated by hunting for each state and the nation as a whole. RIMS-II was also the basis for this study.

Fishing: Sportfishing in America – Values of Our Traditional Pastime (ASA 2002). Produced by the American Sportfishing Association with funding from the AFWA/U.S. Fish and Wildlife Multi-State Grants program, this study was based on the U.S. Fish and Wildlife Service’s *2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation* (2001 Survey). This report estimates economic effects for sportfishing for each state and the nation as a whole. The multipliers were developed using the Regional Input-Output Modeling System (RIMS-II) developed by the U.S. Department of Commerce.

Wildlife Viewing: 2001 National and State Economic Impacts of Wildlife Watching. Addendum to the 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation. (Caudill 2003). Produced by the U.S. Fish and Wildlife Service’s Division of Economics, and based on the 2001 Survey, this report used IMPLAN models to estimate economic effects. Both the IMPLAN and RIMS-II models were built from the same business expenditure matrices developed by the U.S. Department of Commerce.

Each of these reports presents detailed economic effects for each state and the U.S., including:

*Retail sales*: the amount spent by recreationists for goods and services related to their activity, including travel and equipment expenditures.

*Output or Total Multiplier Effect*: The total economic activity originally stimulated by recreationists’ expenditures. These includes multiple rounds of expenditures by the retailer and it’s vendors and employees for inventory, payroll and operating expenses as part of their activities related to supporting the original retail sale.

*Earnings* (salaries, wages & profits): The total wages, salaries, rent income and profits received by individuals and businesses as a result of the economic activity generated by recreationists’ expenditures.

*Jobs*: The total jobs, full and part time, supported by the economic activity generated by recreationists’ expenditures. These include jobs directly associated with outdoor recreation, such as bait shops or boot manufacturers, and indirectly-supported jobs

such as accountants, utility staff, mining and others who support businesses in the outdoor industry.

*Tax Revenues:* Tax revenues include separate estimates for state income tax, state sales tax and federal income tax revenues. For the hunting and fishing estimates, sales tax revenues are only associated with original retail sales as it is not possible to track the appropriate tax rates through the subsequent rounds of spending. For hunting and fishing, sales tax estimates also include fuel tax receipts. State and federal income tax receipts are based on the total economic activity created by the original retail sale. The specific state tax percentages and exemptions are included in the fishing and hunting estimates. For wildlife viewing, it is not clear the level of exemptions allowed in the data source.

#### *The Trip-related Method: Applying the Multipliers to the NVUM Expenditure Data*

The three source reports provided detailed economic contribution estimates for multiple trip-related expenditures as well as durable goods and services. Also provided were the retail sales used to estimate contributions. “Multiplier ratios” were developed for each of the several dozen expenditure categories in the three reports by dividing each reported effect by its respective retail sales. For example, the earnings multiplier ratio for U.S. hunting effects, .67874, was developed by dividing the total reported earnings generated by hunter’s lodging expenditures, \$24.709 billion, by its respective retail sales, \$16.771 billion. These multiplier ratios are presented in appendices D-F.

#### *The Trip-related Method: Applying the Multipliers to the NVUM Expenditure Data*

The economic multipliers derived from the reports listed above are based on the expenditures provided by the U.S. Fish and Wildlife Service’s *2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation* (2001 Survey) and not the U.S. Forest Service’s *National Visitor Use Monitoring Survey* (NVUM). The expenditure estimates within NVUM are composed of eight expenditure categories and not the 30+ expenditure categories in the 2001 Survey. Therefore, multipliers derived from the 2001 Survey-based reports will not match the mix of expenditures provided by NVUM. However, multipliers were needed that matched NVUM’s expenditures. Such multipliers were developed using weighted multiplier ratios.

For hunting and fishing, weighted multiplier ratios were developed specific to each state. We developed state-level (versus forest or county level) multiplier ratios that report the effects for all trips taken within a state. Multiplier ratios were developed during the initial part of this project. At that time, NVUM wildlife-based trips were divided into seven types of segments for: Day, OVN-NF, and OVN for both local and non-local visitors based on Stynes and White (2005).<sup>5</sup> The multipliers were developed based on these seven types of trip segments. Table 5 lists the types of trips and average expenditure per party. After the multipliers were developed,

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<sup>5</sup> Compared to building the multipliers based on Stynes and White (2005), very little difference in the final multipliers is expected compared to using Stynes and White (2006). Both sources were based on the same (NVUM) data source.

in April 2006, updated trip segment were released (Stynes and White, 2006). The updated wildlife-based trip profiles were divided into five segments. These were first listed in Table 1. A simple conversion was made to convert the multipliers to represent the five trip segments. This conversion is explained later in this report. First, the process used to develop the original multipliers is presented.

The specific steps taken to develop the weighted multiplier ratios are explained using the Louisiana fishing multiplier calculations:

**Table 5. Average Expenditures Per Trip & Per Party by Wildlife-Related Forest Visitors (Stynes & White, 2005)**

	<u>Non-Local Visitors:</u>			<u>Local Visitors:</u>		
	Day	OVN-NF	OVN	Day	OVN-NF	OVN
Lodging	\$0.00	\$31.62	\$63.70	\$0.00	\$15.02	\$14.87
Restaurant	\$8.39	\$28.44	\$57.76	\$6.19	\$15.15	\$18.44
Groceries	\$7.00	\$48.53	\$33.62	\$8.11	\$49.42	\$24.67
Gas & oil	\$16.00	\$54.31	\$47.04	\$15.51	\$38.40	\$34.89
Other transportation	\$0.00	\$2.10	\$1.74	\$0.02	\$0.52	\$0.16
Activities	\$2.97	\$8.47	\$18.81	\$1.81	\$3.28	\$4.58
Admissions/fees	\$2.44	\$8.03	\$6.50	\$2.81	\$6.47	\$3.46
Souvenirs/other	\$3.91	\$22.28	\$20.78	\$9.58	\$23.66	\$15.42
	\$40.71	\$203.78	\$249.95	\$44.03	\$151.92	\$116.49

Step 1. From the three source reports, the fishing, hunting and viewing multipliers were extracted that best correspond with the expenditures reported in the NVUM (Table 6). In the case of the NVUM’s Restaurant and Groceries line items, the best corresponding datum from the fishing and hunting source reports was “Food, drink and refreshment.” The multipliers developed in the source reports for “Food, drink and refreshment” were a combination of “Eating and drinking establishments” and “food retail”, and already reflect the combination of related expenditures provided by the NVUM.

Step 2. To develop a weighted average for the extracted multiplier ratios (Column A, Table 7) for each trip type (listed Columns B, Table 7), we first calculated the percentage of each trip’s expenditure comprised of each line item (Columns B), and then multiplied this percentage by the state-specific multipliers (Column A). The results are presented in Table 8. The final multiplier ratio, which is the weighted average, used in the economic analyses is presented in the bottom row of Table 8.

**Table 6. First Step in the Multiplier Development Process:**

<u>USFWS:</u>	<u>State Earnings Multipliers:</u>	<u>NVUM:</u>
Lodging	0.56520	Lodging
Food, drink & refreshments	0.45558	Restaurant + Groceries
Transportation by private vehicle	0.31343	Gas & oil



Public transportation	0.49860	Other transportation
Guide fees/pack trip + equip. rental	0.49305	Activities
Public land use fees	0.42880	Admissions/fees
Other expenses related to fishing trip	0.54312	Souvenirs/other

**Table 7. Second Step in the Multiplier Development Process:**

	Column A		Columns B				
	State Earnings Multipliers:	Non-Local Visitors:			Local Visitors:		
		Day	OVN-NF	OVN	Day	OVN-NF	OVN
Lodging	0.56520	0.0%	15.5%	25.5%	0.0%	9.9%	12.8%
Restaurant + Groceries	0.45558	37.8%	37.8%	36.6%	32.5%	42.5%	37.0%
Gas & oil	0.31343	39.3%	26.7%	18.8%	35.2%	25.3%	30.0%
Other transportation	0.49860	0.0%	1.0%	0.7%	0.0%	0.3%	0.1%
Activities	0.49305	7.3%	4.2%	7.5%	4.1%	2.2%	3.9%
Admissions/fees	0.42880	6.0%	3.9%	2.6%	6.4%	4.3%	3.0%
Souvenirs/other	0.54312	9.6%	10.9%	8.3%	21.8%	15.6%	13.2%
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Table 8. Weighted Averages and Final Multiplier Ratios:**

<u>Weighted Earnings Multipliers: Louisiana Fishing</u>						
	Non-Local Visitors:			Local Visitors:		
	Day	OVN-NF	OVN	Day	OVN-NF	OVN
Lodging	0.00000	0.08770	0.14404	0.00000	0.05588	0.07215
Restaurant + Groceries	0.17223	0.17208	0.16656	0.14796	0.19364	0.16860
Gas & oil	0.12318	0.08353	0.05899	0.11041	0.07922	0.09387
Other transportation	0.00000	0.00514	0.00347	0.00023	0.00171	0.00068
Activities	0.03597	0.02049	0.03710	0.02027	0.01065	0.01939
Admissions/fees	0.02570	0.01690	0.01115	0.02737	0.01826	0.01274
<u>Souvenirs/other</u>	<u>0.05216</u>	<u>0.05938</u>	<u>0.04515</u>	<u>0.11817</u>	<u>0.08459</u>	<u>0.07189</u>
<b>TOTAL / Final</b>						
<b>Multiplier Ratios:</b>	<b>0.40925</b>	<b>0.44522</b>	<b>0.46647</b>	<b>0.42440</b>	<b>0.44394</b>	<b>0.43932</b>

State-specific multipliers were developed for hunting, fishing and wildlife viewing. A conversion step was made based on the updated trip segment data from Stynes and White (2006). In the updated report, breakouts were not provided for overnight trips that used accommodations within National Forest boundaries and those who lodged outside forests. One trip segment was used for all overnight trips, regardless of where they stayed. This trip segment, referred to as OVN, was presented separately for both local and non-local trips. This combination reduced the segments from seven to five. The multipliers were adjusted taking a weighted average of the OVN-NF and OVN multipliers based on the number of trips assigned to each segment. A review of the weighted multipliers compared to the original multipliers showed no difference in the results. Therefore, the weighted multipliers were used to calculate the economic contributions.

The expenditures associated with each forest were next matched with the appropriate multipliers to develop the final economic estimates. Then, the results for all trip-types within a unit were summed, and the effects for all units within a state were summed to arrive at the final state-level effects. The final hunting and fishing effects from the trip-related method are presented in Tables 9a and 9b. These figures represent the state-wide economic effects resulting from expenditures within 50 miles of U.S. Forest Service-managed units from trip-related expenditures.

**Tables 9a – 9c. The Economic Effects of Hunting, Fishing and Wildlife-Viewing Activities Within U.S. Forest Service-Managed Units (Based on the trip-related expenditures made within 50 miles of each unit).**

**Table 9a. Hunting Effects, Trip-Related, Annual average from 2000-2003**

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$12,240,331	\$23,701,008	\$5,713,356	284	\$799,372	\$228,603	\$636,867
Alaska	\$3,330,707	\$5,665,683	\$1,302,766	55	\$57,799	\$0	\$113,471
Arizona	\$42,409,921	\$75,706,927	\$19,128,317	780	\$2,576,476	\$489,745	\$3,471,083
Arkansas	\$58,679,838	\$115,579,362	\$26,773,600	1,353	\$3,870,941	\$1,423,175	\$2,680,961
California	\$49,987,225	\$85,268,433	\$20,959,724	714	\$2,879,422	\$945,276	\$3,745,126
Colorado	\$62,891,540	\$128,141,560	\$31,671,316	1,196	\$3,751,489	\$1,014,899	\$5,296,104
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$23,202,458	\$41,600,771	\$10,720,507	434	\$1,256,029	\$0	\$1,705,741
Georgia	\$6,824,157	\$13,361,892	\$3,298,177	128	\$223,083	\$145,182	\$504,663
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$72,677,270	\$125,935,736	\$30,308,746	1,547	\$6,197,601	\$1,020,857	\$3,161,408
Illinois	\$3,062,215	\$6,449,589	\$1,556,804	55	\$192,541	\$34,931	\$280,587
Indiana	\$3,419,686	\$6,243,918	\$1,441,847	63	\$181,465	\$37,532	\$240,317
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$335,754	\$684,106	\$169,084	6	\$20,020	\$5,417	\$28,283
Kentucky	\$15,044,126	\$23,032,506	\$4,876,983	240	\$739,156	\$305,058	\$842,300
Louisiana	\$7,219,721	\$13,684,996	\$3,183,552	140	\$502,816	\$78,501	\$490,866
Maine	\$19,280	\$28,398	\$6,418	0	\$1,034	\$165	\$875
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>Table 9a (Continued)</b>							
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$12,540,461	\$21,829,027	\$5,388,187	216	\$825,752	\$156,671	\$982,929
Minnesota	\$32,922,284	\$62,115,338	\$14,817,325	606	\$2,135,112	\$514,101	\$2,542,861

Mississippi	\$76,345,204	\$148,538,675	\$33,681,591	1,573	\$6,489,506	\$1,176,959	\$3,401,065
Missouri	\$4,380,586	\$8,269,937	\$1,796,442	75	\$250,722	\$69,128	\$281,216
Montana	\$87,396,772	\$158,643,571	\$37,440,403	1,937	\$5,286,203	\$1,371,256	\$3,334,174
Nebraska	\$1,313,934	\$2,433,810	\$551,064	28	\$95,090	\$21,834	\$56,446
Nevada	\$25,648,895	\$40,876,566	\$9,893,394	366	\$1,963,830	\$270	\$1,659,358
New Hampshire	\$302,057	\$444,909	\$100,543	5	\$16,205	\$2,588	\$13,710
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$26,245,082	\$47,355,430	\$10,912,577	543	\$1,793,760	\$410,531	\$1,139,134
New York	\$160,300	\$263,088	\$59,164	2	\$11,710	\$1,668	\$8,514
North Carolina	\$10,559,418	\$19,114,192	\$4,565,229	204	\$740,784	\$229,369	\$745,565
North Dakota	\$6,147,458	\$10,257,290	\$2,248,088	119	\$390,441	\$10,848	\$232,962
Ohio	\$1,042,157	\$1,997,920	\$473,659	20	\$71,126	\$30,827	\$83,000
Oklahoma	\$8,229,621	\$16,158,581	\$3,742,072	189	\$543,685	\$196,966	\$374,960
Oregon	\$45,423,073	\$78,742,506	\$18,025,923	783	\$2,372,168	\$1,475,999	\$3,009,796
Pennsylvania	\$11,695,510	\$23,332,689	\$5,534,707	214	\$592,527	\$162,851	\$994,319
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$14,234,744	\$21,885,732	\$5,158,979	245	\$859,897	\$221,524	\$885,608
South Dakota	\$4,145,378	\$7,296,595	\$1,667,380	87	\$292,125	\$8,071	\$164,757
Tennessee	\$9,315,099	\$17,641,839	\$4,208,318	167	\$758,245	\$0	\$740,240
Texas	\$9,364,113	\$20,713,957	\$5,025,510	188	\$646,372	\$4,874	\$861,277
Utah	\$29,970,619	\$60,286,725	\$14,744,654	671	\$2,528,066	\$600,619	\$1,603,179
Vermont	\$7,854,697	\$12,891,294	\$2,899,022	117	\$573,805	\$81,751	\$417,208
Virginia	\$28,032,799	\$52,493,520	\$11,956,850	507	\$1,840,620	\$524,848	\$1,886,943
Washington	\$25,016,630	\$44,775,857	\$10,999,467	443	\$1,888,196	\$52,702	\$1,980,643
West Virginia	\$4,897,162	\$8,781,554	\$1,913,562	93	\$380,502	\$74,756	\$231,753
Wisconsin	\$24,086,943	\$44,429,378	\$10,766,811	490	\$2,077,581	\$258,889	\$1,145,309
Wyoming	\$25,239,330	\$43,463,658	\$9,916,751	507	\$1,563,094	\$64,495	\$954,972
United States <sup>1</sup>	\$893,854,555	\$2,419,644,434	\$599,356,867	21,439	\$60,236,370	\$13,453,736	\$111,286,370

<sup>1</sup> The sum of the state effects (except retail sales) will not equal the U.S. effects as U.S.-level multipliers are greater than the sum of the states.

**Table 9b. Fishing Effects, Trip-Related, Annual Average from 2000-2003**

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$612,206	\$1,180,310	\$288,201	14	\$39,562	\$12,458	\$31,612
Alaska	\$11,287,142	\$18,873,928	\$4,192,174	181	\$191,720	\$0	\$404,524
Arizona	\$37,735,554	\$69,531,235	\$17,837,327	730	\$2,323,790	\$442,766	\$3,060,381
Arkansas	\$7,080,186	\$0	\$3,284,417	168	\$462,739	\$191,245	\$367,756
<b>Table 9b (Continued)</b>							
California	\$96,716,825	\$199,926,882	\$51,211,557	1,718	\$6,523,506	\$2,454,568	\$9,225,320
Colorado	\$48,057,724	\$98,716,760	\$24,703,066	947	\$2,827,564	\$834,114	\$4,387,896
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$12,975,816	\$23,466,326	\$6,120,689	252	\$699,495	\$0	\$1,017,003
Georgia	\$10,699,377	\$20,989,003	\$5,255,115	205	\$367,004	\$291,043	\$924,068
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$25,859,292	\$46,172,138	\$11,318,149	586	\$2,213,491	\$517,117	\$1,206,311
Illinois	\$1,849,507	\$3,890,435	\$951,940	34	\$150,917	\$24,571	\$191,595
Indiana	\$5,620,873	\$10,459,667	\$2,463,343	110	\$296,265	\$69,337	\$450,745
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$329,367	\$676,571	\$169,308	6	\$19,370	\$5,715	\$30,085
Kentucky	\$12,412,103	\$22,320,717	\$4,941,559	241	\$704,159	\$291,457	\$775,702
Louisiana	\$476,057	\$894,408	\$211,404	9	\$32,785	\$5,397	\$33,788
Maine	\$27,121	\$44,250	\$10,289	0	\$1,435	\$335	\$1,349
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$6,993,310	\$12,392,053	\$3,121,428	129	\$457,173	\$89,070	\$557,572
Minnesota	\$50,153,141	\$95,531,126	\$22,816,109	994	\$2,899,178	\$699,915	\$4,054,939
Mississippi	\$9,787,108	\$18,849,824	\$4,343,982	203	\$826,286	\$160,881	\$465,868
Missouri	\$1,027,018	\$1,978,021	\$455,839	18	\$58,229	\$17,270	\$70,533
Montana	\$31,260,440	\$56,993,953	\$13,642,979	724	\$1,849,916	\$577,383	\$1,381,342
Nebraska	\$130,921	\$243,513	\$55,861	3	\$9,375	\$2,565	\$6,568
Nevada	\$3,340,414	\$5,567,444	\$1,376,338	50	\$249,825	\$11,606	\$244,739
New Hampshire	\$424,899	\$693,253	\$161,190	8	\$22,475	\$5,246	\$21,134
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$8,528,361	\$15,785,143	\$3,842,913	180	\$565,426	\$130,971	\$508,801
New York	\$115,564	\$195,883	\$44,961	2	\$8,420	\$1,236	\$6,309
North Carolina	\$16,710,499	\$30,949,376	\$7,526,971	342	\$1,175,884	\$377,002	\$1,220,012
North Dakota	\$227,567	\$408,198	\$91,934	5	\$17,564	\$509	\$10,113
Ohio	\$2,798,702	\$5,533,693	\$1,337,944	57	\$189,110	\$84,546	\$221,175
Oklahoma	\$1,441,811	\$2,841,774	\$668,456	34	\$94,287	\$38,807	\$74,817
Oregon	\$39,579,205	\$69,460,509	\$16,159,574	718	\$2,024,037	\$1,299,413	\$2,594,603
Pennsylvania	\$5,311,243	\$10,551,141	\$2,538,655	100	\$268,273	\$74,258	\$447,084
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$4,360,022	\$7,930,074	\$1,938,323	90	\$292,022	\$81,982	\$327,726
South Dakota	\$5,274,916	\$9,448,591	\$2,205,990	118	\$382,811	\$3,960	\$235,923
Tennessee	\$14,832,335	\$28,641,512	\$6,969,517	276	\$1,217,308	\$0	\$1,158,074
Texas	\$2,820,586	\$6,231,117	\$1,533,798	57	\$193,329	\$254	\$258,995
Utah	\$43,396,732	\$88,174,889	\$21,876,826	1,006	\$3,618,462	\$945,444	\$2,496,807
Vermont	\$5,662,656	\$9,598,284	\$2,203,103	90	\$412,597	\$60,544	\$309,141
Virginia	\$19,831,294	\$37,163,397	\$8,583,863	368	\$1,013,784	\$401,642	\$1,468,134
<b>Table 9b (Continued)</b>							
Washington	\$18,934,603	\$34,247,371	\$8,548,715	347	\$1,429,217	\$17,875	\$1,496,651
West Virginia	\$7,179,360	\$12,614,490	\$2,753,686	142	\$559,296	\$105,433	\$309,432
Wisconsin	\$7,638,307	\$14,150,019	\$3,477,688	161	\$650,732	\$87,596	\$381,795

Wyoming	\$12,606,075	\$19,765,810	\$4,460,908	232	\$720,412	\$40,324	\$427,268
United States <sup>1</sup>	\$592,106,240	\$1,600,474,265	\$401,108,980	14,463	\$38,059,227	\$10,455,854	\$66,149,596

<sup>1</sup> The sum of the state effects (except retail sales) will not equal the U.S. effects as U.S.-level multipliers are greater than the sum of the states.

Detailed expenditures were not available per state for wildlife viewing. As a substitute source, the multiplier ratios from the travel+equipment method were used, which are based on all expenditures (travel plus equipment), not just trip-related expenditures as in the trip-related method. Therefore, adjustments were made to the trip-related method multipliers to exclude as best as possible the effects from equipment expenditures. The percentage differences between the hunting and fishing multipliers in the trip-related method and the travel+equipment method were calculated. These differences, with the travel+equipment method multipliers approximately one percent to four percent lower at the national level, were applied to the travel+equipment method multipliers. The result is considered to be multiplier ratios that better reflect their trip-oriented nature.<sup>6</sup>

**Table 9c. Wildlife Viewing Effects, Trip-Related, Annual Average from 2000-2003**

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$1,261,529	\$2,491,629	\$705,702	33	\$40,980	\$14,624	\$65,068
Alaska	\$9,772,468	\$14,884,382	\$4,813,687	292	\$10,494	\$0	\$610,519
Arizona	\$20,100,108	\$35,957,482	\$10,596,260	426	\$898,292	\$165,542	\$1,104,163
Arkansas	\$2,582,629	\$4,179,903	\$1,140,701	65	\$120,306	\$31,425	\$105,162
California	\$11,174,830	\$24,060,834	\$7,555,355	288	\$641,839	\$218,371	\$903,139
Colorado	\$19,631,522	\$36,623,501	\$12,234,348	524	\$657,433	\$287,627	\$1,440,333
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$2,807,735	\$4,989,652	\$1,518,528	61	\$134,484	\$0	\$187,109
Georgia	\$1,610,072	\$3,235,571	\$953,928	38	\$84,374	\$26,065	\$106,382
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$5,572,579	\$8,993,341	\$2,281,074	129	\$141,671	\$68,936	\$201,598
Illinois	\$578,615	\$1,261,416	\$384,691	13	\$19,510	\$7,376	\$45,463
Indiana	\$40,091	\$87,529	\$26,096	1	\$1,568	\$785	\$2,587
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>Table 9c (Continued)</b>							
Kansas	\$204,892	\$382,233	\$127,692	5	\$6,861	\$3,002	\$15,035
Kentucky	\$699,858	\$1,425,007	\$426,310	23	\$28,050	\$14,390	\$38,490
Louisiana	\$949,037	\$1,759,066	\$490,247	25	\$47,858	\$7,928	\$48,813

<sup>6</sup> At the national level, all multipliers were lower in the travel+equipment method than the trip-related method except for state level tax revenues. The results varied state-by-state.

Maine	\$171,560	\$315,552	\$96,814	5	\$2,541	\$2,493	\$11,370
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$2,307,189	\$4,738,425	\$1,446,431	59	\$104,187	\$37,980	\$158,245
Minnesota	\$2,024,905	\$4,304,576	\$1,287,770	58	\$82,679	\$42,502	\$129,377
Mississippi	\$5,577,462	\$8,311,901	\$2,078,206	112	\$223,100	\$37,252	\$184,435
Missouri	\$153,651	\$324,151	\$90,622	4	\$7,034	\$2,485	\$9,370
Montana	\$9,558,004	\$14,678,577	\$4,186,273	275	\$5,102	\$114,820	\$380,938
Nebraska	\$135,812	\$249,800	\$74,539	3	\$4,056	\$1,701	\$6,805
Nevada	\$2,631,050	\$3,863,694	\$1,035,367	41	\$110,119	\$1,016	\$131,867
New Hampshire	\$2,687,766	\$4,943,654	\$1,516,749	71	\$39,809	\$39,051	\$178,124
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$17,032,479	\$26,939,698	\$7,885,333	411	\$752,715	\$172,289	\$707,859
New York	\$56,191	\$99,956	\$32,058	2	\$1,177	\$1,222	\$3,795
North Carolina	\$6,050,442	\$12,889,362	\$3,885,063	163	\$192,953	\$121,838	\$381,218
North Dakota	\$610,700	\$994,351	\$262,206	16	\$18,003	\$4,252	\$24,832
Ohio	\$0	\$0	\$0	0	\$0	\$0	\$0
Oklahoma	\$776,486	\$1,242,256	\$349,965	19	\$35,327	\$8,741	\$31,815
Oregon	\$11,282,746	\$22,443,533	\$6,703,383	302	\$53,763	\$255,560	\$620,482
Pennsylvania	\$3,277,763	\$6,631,766	\$1,890,653	72	\$128,784	\$52,901	\$205,915
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$577,807	\$1,271,962	\$363,198	17	\$26,045	\$8,841	\$32,811
South Dakota	\$808,857	\$1,296,946	\$364,281	24	\$25,819	\$756	\$38,045
Tennessee	\$0	\$0	\$0	0	\$0	\$0	\$0
Texas	\$351,484	\$554,404	\$162,250	9	\$15,529	\$3,569	\$14,509
Utah	\$4,342,982	\$8,163,350	\$2,574,743	127	\$167,450	\$73,797	\$229,151
Vermont	\$2,753,347	\$4,897,820	\$1,570,830	80	\$57,654	\$59,873	\$185,962
Virginia	\$4,746,243	\$9,374,275	\$2,905,318	144	\$135,632	\$79,754	\$325,216
Washington	\$6,276,365	\$11,557,762	\$3,425,822	136	\$306,565	\$17,561	\$396,733
West Virginia	\$884,170	\$1,436,240	\$426,798	22	\$27,881	\$11,116	\$40,428
Wisconsin	\$1,802,042	\$3,371,067	\$977,961	47	\$56,468	\$36,134	\$103,869
Wyoming	\$4,581,251	\$7,286,487	\$1,836,767	115	\$126,640	\$2,991	\$246,396
United States <sup>1</sup>	\$168,444,716	\$440,287,501	\$130,010,142	4,662	\$5,540,755	\$2,036,565	\$14,743,186

*The Travel+Equipment method: Applying the Multipliers to the Travel + Equipment Expenditure Data*

The multipliers derived from the source reports did not need to be adjusted to fit the expenditure data in the travel+equipment method. The multipliers were originally developed from the same data set (the U.S. Fish and Wildlife Service’s National Survey) used to obtain the expenditures in the travel+equipment method. Applying the multipliers was a simple process of matching the state-level multipliers to the expenditures reported for each unit. Then, the effects associated with all units in a state were summed to arrive at the final state-level economic estimates. Table 10a-10c presents the final economic effects using this approach. These figures represent the effects generated by all travel, equipment and service expenditures made statewide by all recreationists for their activities on U.S. Forest Service-managed lands within each state. Appendix H presents economic effects for specific types of hunting.

**Tables 10a – 10c. The Economic Effects of Hunting, Fishing and Wildlife-Viewing Within U.S. Forest Service-Managed Units (Based on statewide travel and equipment expenditures for activities occurring within USFS units).**

**Table 10a. Hunting Effects, Annual average from 2000-2003**

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$33,355,929	\$65,785,319	\$15,217,245	704	\$1,303,187	\$567,253	\$1,580,313
Alaska	\$28,628,625	\$45,773,886	\$11,038,227	541	\$106,707	\$0	\$1,116,366
Arizona	\$314,010,337	\$591,250,913	\$143,731,360	5,511	\$17,116,274	\$3,458,752	\$24,513,986
Arkansas	\$114,903,101	\$205,897,504	\$47,016,426	2,398	\$5,246,298	\$2,362,618	\$4,660,647
California	\$250,778,947	\$487,495,511	\$120,890,042	4,151	\$16,857,858	\$5,043,700	\$21,517,496
Colorado	\$521,237,691	\$1,053,861,922	\$288,159,091	10,923	\$18,156,223	\$9,268,806	\$48,379,087
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$99,323,984	\$177,836,477	\$44,877,642	1,826	\$5,398,217	\$0	\$7,182,810
Georgia	\$14,441,597	\$28,421,414	\$7,101,748	288	\$425,459	\$327,486	\$1,138,363
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$364,130,708	\$613,616,589	\$144,153,099	7,111	\$19,955,995	\$4,694,834	\$14,530,096
Illinois	\$9,771,695	\$20,549,924	\$5,269,298	183	\$513,337	\$116,163	\$933,092
Indiana	\$6,331,994	\$12,134,839	\$2,796,272	116	\$299,881	\$68,770	\$440,327
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$2,077,975	\$4,201,336	\$1,148,819	44	\$72,356	\$36,948	\$192,913
Kentucky	\$51,935,691	\$105,561,089	\$22,484,244	978	\$2,956,293	\$1,245,323	\$3,421,055
Louisiana	\$19,783,954	\$33,791,340	\$7,213,275	313	\$862,275	\$175,959	\$1,100,272
Maine	\$40,448	\$69,502	\$16,068	1	\$1,154	\$321	\$2,156
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a

**Table 10a (Continued)**

Michigan	\$47,830,049	\$91,258,330	\$23,206,692	865	\$2,740,653	\$627,810	\$3,938,781
Minnesota	\$109,862,252	\$217,832,844	\$53,455,485	2,054	\$7,089,622	\$1,913,248	\$8,897,433
Mississippi	\$160,089,814	\$298,307,970	\$63,767,801	3,028	\$11,060,024	\$2,264,875	\$6,544,820
Missouri	\$10,291,541	\$20,088,770	\$4,500,113	188	\$418,692	\$173,309	\$705,034
Montana	\$383,082,910	\$647,851,916	\$154,975,159	8,551	\$11,142,172	\$6,052,340	\$14,717,004
Nebraska	\$33,235,217	\$58,812,872	\$14,250,248	716	\$1,808,905	\$550,643	\$1,423,542
Nevada	\$311,998,754	\$492,504,577	\$120,427,506	4,504	\$20,009,541	\$1,436	\$20,393,635
New Hampshire	\$633,688	\$1,088,861	\$251,734	11	\$18,072	\$5,034	\$33,785
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$154,944,185	\$271,424,332	\$65,182,267	3,191	\$8,161,521	\$2,411,899	\$6,735,005
New York	\$265,627	\$438,241	\$98,657	4	\$11,361	\$2,763	\$14,051
North Carolina	\$25,339,826	\$49,572,384	\$12,365,863	525	\$1,229,833	\$590,109	\$1,918,151
North Dakota	\$29,667,328	\$51,765,732	\$11,873,418	604	\$1,708,090	\$54,629	\$1,178,928
Ohio	\$2,527,205	\$5,449,889	\$1,302,708	51	\$127,292	\$79,600	\$214,317
Oklahoma	\$16,036,218	\$29,475,649	\$6,873,148	345	\$763,868	\$352,550	\$686,585
Oregon	\$347,149,636	\$633,740,324	\$144,551,532	5,965	\$5,710,337	\$11,322,025	\$22,899,798
Pennsylvania	\$24,941,991	\$48,711,813	\$11,163,177	411	\$1,089,043	\$312,569	\$1,908,456
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$31,332,979	\$60,212,309	\$13,800,766	590	\$1,628,920	\$532,536	\$2,128,971
South Dakota	\$25,858,690	\$45,309,444	\$11,030,860	573	\$1,333,065	\$39,046	\$1,083,042
Tennessee	\$29,979,235	\$63,596,610	\$14,783,917	560	\$1,777,394	\$0	\$2,483,153
Texas	\$39,162,355	\$80,281,784	\$19,085,020	710	\$2,067,965	\$28,520	\$3,216,219
Utah	\$143,301,367	\$289,962,350	\$74,149,279	3,285	\$8,090,257	\$2,939,850	\$7,846,075
Vermont	\$13,015,729	\$21,473,800	\$4,834,176	195	\$556,666	\$135,408	\$688,509
Virginia	\$50,218,030	\$93,065,074	\$20,302,658	853	\$2,198,034	\$883,093	\$3,174,912
Washington	\$150,790,725	\$266,899,764	\$64,840,378	2,441	\$9,360,458	\$416,986	\$10,893,907
West Virginia	\$9,363,221	\$15,796,042	\$3,282,725	158	\$515,479	\$126,927	\$393,085
Wisconsin	\$49,664,169	\$91,580,059	\$22,109,535	994	\$2,185,937	\$525,549	\$2,324,998
Wyoming	\$142,485,720	\$238,942,762	\$59,594,813	3,114	\$6,926,208	\$300,973	\$5,833,011
United States <sup>1</sup>	\$4,173,821,140	\$11,413,560,369	\$2,832,971,060	97,191	\$161,389,804	\$45,206,774	\$504,502,972

<sup>1</sup> The sum of the state effects (except retail sales) will not equal the U.S. effects as U.S.-level multipliers are greater than the sum of the states.

**Table 10b. Fishing Effects, Annual average from 2000-2003**

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$1,751,907	\$3,408,499	\$849,020	39	\$86,386	\$34,561	\$87,999
Alaska	\$111,024,579	\$181,783,251	\$44,902,874	2,109	\$557,148	\$0	\$4,632,101
Arizona	\$196,254,801	\$370,685,409	\$94,909,852	3,735	\$11,431,380	\$2,250,596	\$15,549,444
Arkansas	\$14,721,235	\$27,808,734	\$6,935,107	327	\$877,050	\$363,475	\$713,950
California	\$462,056,778	\$949,466,876	\$249,621,213	8,224	\$32,852,423	\$12,013,844	\$45,413,427
Colorado	\$210,275,479	\$419,362,734	\$109,932,679	4,067	\$8,695,718	\$3,565,226	\$18,735,158
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$62,336,581	\$111,642,987	\$28,579,686	1,152	\$3,255,858	\$0	\$4,606,114



Georgia	\$22,065,850	\$44,208,941	\$10,991,689	413	\$814,506	\$585,243	\$1,857,275
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$99,042,083	\$166,352,179	\$38,646,480	1,897	\$5,671,355	\$1,668,654	\$3,904,377
Illinois	\$3,765,445	\$8,211,017	\$2,041,489	67	\$266,739	\$47,919	\$372,719
Indiana	\$11,266,525	\$23,459,113	\$5,744,421	231	\$583,754	\$143,124	\$927,673
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$901,121	\$1,797,092	\$471,111	17	\$37,240	\$15,274	\$80,322
Kentucky	\$29,635,721	\$57,298,950	\$12,815,536	585	\$1,771,648	\$706,973	\$1,870,964
Louisiana	\$1,288,303	\$2,337,973	\$570,366	24	\$73,480	\$14,032	\$87,930
Maine	\$77,501	\$132,560	\$31,191	1	\$2,658	\$876	\$4,069
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$18,068,635	\$34,616,327	\$8,759,915	330	\$1,133,169	\$235,408	\$1,475,699
Minnesota	\$153,085,171	\$300,796,461	\$75,502,431	3,041	\$11,032,350	\$2,614,037	\$12,171,095
Mississippi	\$12,114,798	\$23,388,475	\$5,611,227	259	\$981,399	\$201,701	\$583,771
Missouri	\$3,234,537	\$6,295,441	\$1,407,103	58	\$160,594	\$54,750	\$223,533
Montana	\$115,568,640	\$197,041,780	\$49,213,586	2,549	\$2,661,893	\$2,021,461	\$4,839,345
Nebraska	\$20,405,584	\$37,025,271	\$9,011,540	417	\$1,259,520	\$365,290	\$936,075
Nevada	\$24,520,236	\$39,472,243	\$8,593,142	305	\$1,822,248	\$84,304	\$1,501,402
New Hampshire	\$1,214,186	\$2,076,779	\$488,665	22	\$41,637	\$13,721	\$63,750
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$41,734,432	\$75,529,335	\$18,303,199	784	\$2,475,037	\$536,149	\$2,554,270
New York	\$236,851	\$393,589	\$92,804	4	\$15,180	\$2,603	\$13,471
North Carolina	\$54,603,251	\$114,240,651	\$29,402,139	1,226	\$2,702,867	\$1,414,302	\$4,621,077
North Dakota	\$879,424	\$1,514,813	\$350,956	17	\$53,126	\$1,658	\$35,312
Ohio	\$6,015,744	\$12,945,879	\$3,169,991	124	\$378,922	\$193,662	\$520,458
Oklahoma	\$2,998,721	\$5,747,561	\$1,427,992	67	\$177,529	\$76,196	\$147,150
Oregon	\$113,037,013	\$199,544,328	\$45,707,604	1,963	\$3,087,872	\$3,557,830	\$7,023,306
Pennsylvania	\$8,200,968	\$16,481,027	\$3,972,979	154	\$445,748	\$111,243	\$658,185
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$11,469,410	\$22,152,453	\$5,501,201	239	\$715,389	\$209,749	\$838,922
South Dakota	\$19,243,961	\$33,423,224	\$8,276,297	416	\$1,132,186	\$13,873	\$826,826
Tennessee	\$25,628,107	\$52,888,451	\$13,473,635	529	\$1,889,252	\$0	\$2,210,009
Texas	\$8,940,075	\$18,516,329	\$4,388,621	161	\$511,546	\$843	\$749,885
Utah	\$184,460,632	\$378,037,901	\$95,997,644	4,146	\$12,163,679	\$3,884,083	\$10,264,173
Vermont	\$11,605,704	\$19,285,840	\$4,547,392	185	\$743,828	\$127,539	\$660,098
Virginia	\$26,843,509	\$51,445,332	\$11,917,372	478	\$1,326,141	\$525,952	\$1,927,910
Washington	\$69,020,170	\$122,238,574	\$30,895,057	1,175	\$5,067,085	\$76,470	\$5,168,317
West Virginia	\$9,332,583	\$16,123,097	\$3,529,006	178	\$698,120	\$132,133	\$388,766
Wisconsin	\$20,781,223	\$39,488,191	\$10,057,212	451	\$1,347,098	\$240,060	\$1,058,683
Wyoming	\$48,128,759	\$75,619,811	\$15,379,423	808	\$2,286,391	\$170,358	\$1,501,117
United States <sup>1</sup>	\$2,237,836,231	\$6,310,801,457	\$1,637,891,963	57,707	\$108,674,252	\$28,578,306	\$263,938,053

<sup>1</sup> The sum of the state effects (except retail sales) will not equal the U.S. effects as U.S.-level multipliers are greater than the sum of the states.

**Table 10c. Wildlife Viewing Effects, Annual average from 2000-2003**

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$9,461,560	\$18,432,161	\$5,274,774	265	\$451,561	\$116,678	\$518,234
Alaska	\$139,012,564	\$220,653,536	\$66,009,373	3,574	\$585,140	\$0	\$7,523,230
Arizona	\$318,925,475	\$548,627,982	\$165,000,313	6,971	\$15,466,351	\$2,720,212	\$18,147,703
Arkansas	\$12,788,159	\$19,937,932	\$5,304,867	302	\$703,590	\$148,618	\$494,964
California	\$67,214,588	\$131,912,137	\$40,643,716	1,563	\$3,402,513	\$1,127,525	\$4,852,118
Colorado	\$101,337,950	\$192,594,629	\$59,723,548	2,596	\$5,274,706	\$1,428,450	\$7,155,871
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$22,607,773	\$40,399,825	\$12,541,538	506	\$1,097,743	\$0	\$1,564,105
Georgia	\$9,657,705	\$19,154,989	\$5,632,760	225	\$511,905	\$153,211	\$625,462
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$30,412,518	\$51,440,162	\$13,576,937	799	\$1,179,097	\$428,654	\$1,253,060
Illinois	\$1,731,415	\$3,709,387	\$1,089,032	38	\$68,536	\$22,071	\$136,202
Indiana	\$168,468	\$339,223	\$99,205	5	\$7,024	\$3,267	\$10,782
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$366,350	\$696,264	\$215,914	9	\$19,068	\$5,163	\$25,874
Kentucky	\$2,727,300	\$4,697,002	\$1,398,291	84	\$100,875	\$51,685	\$139,376
Louisiana	\$3,557,229	\$7,063,053	\$2,015,078	106	\$246,744	\$33,413	\$205,620
Maine	\$971,263	\$1,613,296	\$486,172	25	\$15,223	\$7,659	\$55,835
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$6,138,235	\$11,580,071	\$3,474,021	154	\$303,013	\$97,460	\$405,790
Minnesota	\$3,809,220	\$7,327,960	\$2,125,159	91	\$151,336	\$78,178	\$234,535
Mississippi	\$62,600,585	\$95,190,017	\$23,967,670	1,293	\$2,825,792	\$433,151	\$2,145,127
Missouri	\$606,181	\$1,250,991	\$349,419	15	\$34,982	\$9,455	\$35,658
Montana	\$52,664,462	\$86,628,216	\$24,039,510	1,545	\$42,197	\$648,377	\$2,149,937
Nebraska	\$18,921,395	\$36,048,395	\$10,095,301	474	\$700,252	\$248,006	\$992,024
Nevada	\$38,750,319	\$57,893,934	\$16,587,844	654	\$1,767,948	\$5,248	\$2,128,143
New Hampshire	\$15,216,451	\$25,274,969	\$7,616,696	385	\$238,498	\$119,990	\$874,753
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$143,693,943	\$240,034,472	\$70,470,983	3,774	\$7,692,271	\$1,581,455	\$6,551,172
New York	\$135,865	\$242,791	\$76,710	4	\$4,051	\$2,739	\$8,728
North Carolina	\$42,190,180	\$81,324,136	\$23,312,000	1,051	\$1,928,636	\$765,332	\$2,382,732
North Dakota	\$1,820,762	\$2,978,599	\$769,278	50	\$64,477	\$6,719	\$76,144
Ohio	\$0	\$0	\$0	0	\$0	\$0	\$0
Oklahoma	\$4,621,781	\$7,726,256	\$2,183,366	122	\$254,868	\$53,839	\$204,138
Oregon	\$46,483,908	\$89,748,316	\$27,199,507	1,301	\$470	\$1,099,517	\$2,622,204
Pennsylvania	\$9,277,963	\$18,860,754	\$5,462,789	215	\$376,212	\$160,131	\$628,949
<b>Table 10c (Continued)</b>							
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a

South Carolina	\$1,941,110	\$3,696,740	\$1,063,674	53	\$97,661	\$28,768	\$106,746
South Dakota	\$2,611,322	\$4,207,959	\$1,101,842	74	\$103,051	\$1,910	\$120,350
Tennessee	\$0	\$0	\$0	0	\$0	\$0	\$0
Texas	\$2,910,563	\$4,856,151	\$1,424,262	77	\$156,398	\$32,322	\$131,374
Utah	\$31,676,995	\$59,124,425	\$18,027,290	933	\$1,673,800	\$541,057	\$1,679,680
Vermont	\$6,657,379	\$11,896,783	\$3,758,801	188	\$198,519	\$134,224	\$427,695
Virginia	\$18,678,155	\$36,664,702	\$11,586,804	595	\$653,712	\$329,224	\$1,340,583
Washington	\$25,655,215	\$46,580,414	\$13,761,677	590	\$1,500,954	\$12,240	\$1,767,939
West Virginia	\$2,286,958	\$3,994,275	\$1,225,428	64	\$84,941	\$33,210	\$124,840
Wisconsin	\$6,597,265	\$12,341,453	\$3,580,309	171	\$206,730	\$132,287	\$380,263
Wyoming	\$25,135,839	\$40,666,103	\$10,432,635	628	\$838,706	\$20,624	\$1,355,852
United States <sup>1</sup>	\$1,292,022,366	\$3,221,575,174	\$933,490,322	34,570	\$69,749,599	\$23,947,205	\$109,312,939

<sup>1</sup> The sum of the state effects (except retail sales) will not equal the U.S. effects as U.S.-level multipliers are greater than the sum of the states.

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## APPENDIX A

### Number of Hunting, Fishing and Wildlife-Viewing Visits per State<sup>7</sup>

State	HUNTING	FISHING	VIEWING
Alabama	212,400	15,104	40,592
Alaska	57,796	278,470	314,447
Arizona	735,917	930,990	646,758
Arkansas	1,018,240	174,678	83,101
California	867,402	2,386,143	359,571
Colorado	1,091,324	1,185,653	631,680
Connecticut	n/a	n/a	n/a
Delaware	n/a	n/a	n/a
Florida	402,620	320,132	90,344
Georgia	118,416	263,969	51,807
Hawaii	n/a	n/a	n/a
Idaho	1,261,130	637,986	179,308
Illinois	53,137	45,630	18,618
Indiana	59,340	138,675	1,290
Iowa	n/a	n/a	n/a
Kansas	5,826	8,126	6,593
Kentucky	274,763	869,705	233,653
Louisiana	125,280	11,745	30,537
Maine	335	669	5,520
Maryland	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a
Michigan	217,608	172,535	74,238
Minnesota	571,283	1,237,350	65,155
Mississippi	1,324,778	241,462	179,465
Missouri	76,014	25,338	4,944
Montana	1,516,550	771,240	307,546
Nebraska	22,800	3,230	4,370
Nevada	445,072	82,413	84,659
New Hampshire	5,241	10,483	86,484

<sup>7</sup> Developed from total USFS visits data provided by D. English (personal communications, July, 2005) multiplied by the percentage of visitors participating in each activity as provided by D. English (personal communications, July, 2005), then summed to the state level.

<b>Appendix A (Continued)</b>			
New Jersey	n/a	n/a	n/a
New Mexico	455,417	210,407	548,051
New York	2,782	2,851	1,808
North Carolina	183,232	412,272	194,684
North Dakota	106,674	5,614	19,650
Ohio	18,084	69,048	0
Oklahoma	142,804	35,572	24,985
Oregon	788,203	976,476	363,043
Pennsylvania	202,946	131,036	105,468
Rhode Island	n/a	n/a	n/a
South Carolina	247,008	107,568	18,592
South Dakota	71,933	130,140	26,026
Tennessee	161,640	365,935	0
Texas	162,491	69,588	11,310
Utah	520,064	1,070,660	139,743
Vermont	136,298	139,706	88,594
Virginia	486,438	489,266	152,719
Washington	434,100	467,144	201,954
West Virginia	84,978	177,125	28,450
Wisconsin	417,968	188,448	57,984
Wyoming	437,965	311,010	147,410
United States	15,524,296	15,171,592	5,631,150
<sup>1</sup> plus 104,118 wildlife viewing visits in Puerto Rico			

## APPENDIX B

### Expenditures Per State for Trip-Related Expenditures Within a 50-Mile Radius, Trip-related Method

	Wildlife Viewing <sup>1</sup>	Fishing	All Hunting
Alabama	\$1,261,529	\$612,206	\$12,240,331
Alaska	\$9,772,468	\$11,287,142	\$3,330,707
Arizona	\$20,100,108	\$37,735,554	\$42,409,921
Arkansas	\$2,582,629	\$7,080,186	\$58,679,838
California	\$11,174,830	\$96,716,825	\$49,987,225
Colorado	\$19,631,522	\$48,057,724	\$62,891,540
Connecticut	n/a	n/a	n/a
Delaware	n/a	n/a	n/a
Florida	\$2,807,735	\$12,975,816	\$23,202,458
Georgia	\$1,610,072	\$10,699,377	\$6,824,157
Hawaii	n/a	n/a	n/a
Idaho	\$5,572,579	\$25,859,292	\$72,677,270
Illinois	\$578,615	\$1,849,507	\$3,062,215
Indiana	\$40,091	\$5,620,873	\$3,419,686
Iowa	n/a	n/a	n/a
Kansas	\$204,892	\$329,367	\$335,754
Kentucky	\$699,858	\$12,412,103	\$15,044,126
Louisiana	\$949,037	\$476,057	\$7,219,721
Maine	\$171,560	\$27,121	\$19,280
Maryland	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a
Michigan	\$2,307,189	\$6,993,310	\$12,540,461
Minnesota	\$2,024,905	\$50,153,141	\$32,922,284
Mississippi	\$5,577,462	\$9,787,108	\$76,345,204
Missouri	\$153,651	\$1,027,018	\$4,380,586
Montana	\$9,558,004	\$31,260,440	\$87,396,772
Nebraska	\$135,812	\$130,921	\$1,313,934
Nevada	\$2,631,050	\$3,340,414	\$25,648,895
New Hampshire	\$2,687,766	\$424,899	\$302,057
New Jersey	n/a	n/a	n/a

New Mexico	\$17,032,479	\$8,528,361	\$26,245,082
New York	\$56,191	\$115,564	\$160,300
North Carolina	\$6,050,442	\$16,710,499	\$10,559,418
North Dakota	\$610,700	\$227,567	\$6,147,458
Ohio	\$0	\$2,798,702	\$1,042,157
Oklahoma	\$776,486	\$1,441,811	\$8,229,621
Oregon	\$11,282,746	\$39,579,205	\$45,423,073
Pennsylvania	\$3,277,763	\$5,311,243	\$11,695,510
Rhode Island	n/a	n/a	n/a
South Carolina	\$577,807	\$4,360,022	\$14,234,744
South Dakota	\$808,857	\$5,274,916	\$4,145,378
Tennessee	\$0	\$14,832,335	\$9,315,099
Texas	\$351,484	\$2,820,586	\$9,364,113
Utah	\$4,342,982	\$43,396,732	\$29,970,619
Vermont	\$2,753,347	\$5,662,656	\$7,854,697
Virginia	\$4,746,243	\$19,831,294	\$28,032,799
Washington	\$6,276,365	\$18,934,603	\$25,016,630
West Virginia	\$884,170	\$7,179,360	\$4,897,162
Wisconsin	\$1,802,042	\$7,638,307	\$24,086,943
Wyoming	\$4,581,251	\$12,606,075	\$25,239,330
United States	\$168,444,716	\$592,106,240	\$893,854,555

<sup>1</sup> Plus \$3,235,807 for wildlife viewing in Puerto Rico



APPENDIX C  
Days Per Trip & Total Expenditures, Travel + Equipment Method

C-1. Average Days Per Trip, as Reported by the USFS, June 2006

	Days Per Hunt Trip	Days Per Fishing Trip	Days Per Viewing Trip
<b>Region 1:</b>			
Beaverhead-Deerlodge	2.10	1.86	1.56
Bitterroot	2.54	1.86	1.56
Clearwater	2.54	1.86	1.56
Custer	2.54	1.86	1.56
Flathead	2.54	1.86	1.56
Gallatin	2.54	1.86	1.56
Helena	1.45	1.86	1.56
Idaho Panhandle	2.54	1.86	1.56
Kootenai	2.54	1.86	1.56
Lewis & Clark	2.54	1.86	1.56
Lolo	2.54	1.86	1.56
Nez Perce.	2.54	1.86	1.56
Dakota Prairie Grasslands	2.54	1.86	1.56
<b>Region 2:</b>			
Arapaho	2.54	1.86	1.56
Bighorn	2.54	1.86	1.56
Black Hills	2.54	1.86	1.56
Grand Mesa / Gunnison	2.54	1.86	1.56
Gunnison	2.54	1.86	1.56
Medicine Bow	2.54	1.86	1.56
Nebraska	2.54	1.86	1.56
Pike	2.54	1.86	1.56
Rio Grande	2.54	1.86	1.56
Roosevelt	2.54	1.86	1.56
Routt	2.54	1.86	1.56
Samuel R. McKelvie	2.54	1.86	1.56
San Isabel	2.54	1.86	1.56
San Juan	2.54	1.86	1.56
Shoshone	2.54	1.86	1.56
Uncompahgre	2.54	1.86	1.56
White River.	2.54	1.86	1.56

**Region 3:**

Apache-Sitgreaves	2.54	2.57	1.56
Carson	2.54	1.86	1.56
Cibola	2.54	1.86	1.56
Coconino	2.54	1.86	1.56
Coronado	2.54	1.86	1.56
Gila	2.54	1.86	1.56
Kaibab	2.54	1.86	1.56
Lincoln	2.54	1.86	1.56
Prescott	2.54	1.86	1.56
Santa Fe	2.54	1.31	1.56
Tonto.	2.54	1.44	1.56

**Region 4:**

Ashley	2.54	2.32	1.56
Boise	2.54	1.86	1.56
Bridger-Teton	2.54	1.86	1.56
Caribou-Targhee	2.54	1.86	1.56
Dixie	2.54	1.86	1.56
Fishlake	2.54	1.86	1.56
Humboldt-Toiyabe	2.54	1.86	1.56
Manti-LaSal	2.54	1.86	1.56
Payette	3.22	1.86	1.56
Salmon-Challis	2.54	3.55	1.56
Sawtooth	2.54	1.86	1.56
Uinta	1.82	1.24	1.56
Wasatch-Cache.	2.54	1.86	1.56

**Region 5:**

Angeles	2.54	1.86	1.56
Cleveland	2.54	1.86	1.56
Eldorado	2.54	1.59	1.56
Inyo	2.54	2.91	1.56
Klamath	2.54	1.86	1.56
Lassen	2.54	1.86	1.56
Los Padres	2.54	1.86	1.56
Mendocino	2.54	1.86	1.56
Modoc	2.54	1.86	1.56
Plumas	2.54	1.74	1.56
San Bernardino	2.54	1.86	1.56
Sequoia	2.54	1.86	1.56
Shasta-Trinity	2.54	1.86	1.56
Sierra	2.54	1.86	1.56
Six Rivers	2.54	2.24	1.56

Stanislaus	2.54	1.71	1.56
Tahoe.	2.54	1.86	1.56
Lake Tahoe Basin Management Unit		1.10	1.56

**Region 6:**

Colville	2.54	1.86	1.56
Deschutes	2.54	1.45	1.56
Fremont	2.54	1.86	1.56
Gifford Pinchot,	2.54	1.86	1.56
Malheur,	2.54	1.86	1.56
Mt. Baker-Snoqualmie	2.54	1.86	1.56
Mt. Hood	2.54	1.86	1.56
Ochoco	2.54	1.86	1.56
Okanogan	2.54	1.86	1.56
Olympic	2.54	1.86	1.56
Rogue River	2.54	1.86	1.56
Siskiyou	2.54	1.86	1.56
Siuslaw	2.54	1.86	1.56
Umatilla	2.54	1.86	1.56
Umpqua	2.54	1.86	1.56
Wallowa-Whitman	2.54	1.86	1.56
Wenatchee	2.54	1.86	1.56
Willamette	2.54	1.56	1.56
Winema.	2.54	1.86	1.56
Columbia River Gorge National Scenic Area,	2.54	1.86	

**Region 8:**

Alabama Forests (Wm. B. Bankhead, Conecuh, Talladega, Tuskegee)	2.54	1.86	1.56
Caribbean	2.54	1.86	1.56
Chattahoochee-Oconee	2.54	1.86	1.56
Cherokee	2.54	1.86	1.56
Daniel Boone	2.54	1.86	1.56
Florida Forests (Appalachicola, Ocala, Osceola)	2.54	1.86	1.56
Francis Marion	2.54	1.86	1.56
George Washington & Jefferson	2.54	1.33	1.56
Kisatchie	2.54	1.86	1.56
Mississippi Forests (Holly Springs, Tombigbee, Delta, Bienville, DeSoto, Chickasawhay, Homochitto)	2.72	1.86	1.56
North Carolina Forests (Croatan, Nantahala, Pisgah, Uwharrie)	2.54	1.86	1.56
Ouachita	2.54	1.86	1.56
Ozark-St. Francis	2.54	1.86	1.56
Sumter	2.54	1.86	1.56
Texas National Forests (Caddo-LBJ Grasslands, Angelina, Davey Crockett, Sabine, Sam Houston)	2.54	1.86	1.56

**Region 9:**

Allegheny,	2.54	1.86	1.56
Chequamegon-Nicolet,	1.75	1.86	1.56
Chippewa,	2.54	2.19	1.56
Green Mountain & Finger Lakes,	2.54	1.86	1.56
Hiawatha,	2.54	1.86	1.56
Hoosier,	2.54	1.86	1.56
Huron-Manistee,	2.54	1.86	1.56
Mark Twain,	2.54	1.86	1.56
Monongahela,	2.54	1.58	1.56
Ottawa,	2.54	1.86	1.56
Shawnee,	2.54	1.86	1.56
Superior,	2.54	1.86	1.56
Wayne	2.54	1.86	1.56
White Mountain.	2.54	1.86	1.56
Midewin National Tallgrass Prairie.	2.54	1.86	1.56

**Region 10:**

Chugach	2.54	1.86	1.56
Tongass.	2.54	1.86	1.56

C-2: Expenditures Per State for All Expenditures, The Travel+Equipment Method (Based on U.S. Fish and Wildlife-Service Data; includes travel and equipment expenditures made statewide). Expenditures for specific types of hunting are listed in Appendix H.

	Wildlife Viewing	Fishing	All Hunting
Alabama	\$9,461,560	\$1,751,907	\$33,355,929
Alaska	\$139,012,564	\$111,024,579	\$28,628,625
Arizona	\$318,925,475	\$196,254,801	\$314,010,337
Arkansas	\$12,788,159	\$14,721,235	\$114,903,101
California	\$67,214,588	\$462,056,778	\$250,778,947
Colorado	\$101,337,950	\$210,275,479	\$521,237,691
Connecticut	n/a	n/a	n/a
Delaware	n/a	n/a	n/a
Florida	\$22,607,773	\$62,336,581	\$99,323,984
Georgia	\$9,657,705	\$22,065,850	\$14,441,597
Hawaii	n/a	n/a	n/a
Idaho	\$30,412,518	\$99,042,083	\$364,130,708
Illinois	\$1,731,415	\$3,765,445	\$9,771,695
Indiana	\$168,468	\$11,266,525	\$6,331,994
Iowa	n/a	n/a	n/a

Kansas	\$366,350	\$901,121	\$2,077,975
Kentucky	\$2,727,300	\$29,635,721	\$51,935,691
Louisiana	\$3,557,229	\$1,288,303	\$19,783,954
Maine	\$971,263	\$77,501	\$40,448
Maryland	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a
Michigan	\$6,138,235	\$18,068,635	\$47,830,049
Minnesota	\$3,809,220	\$153,085,171	\$109,862,252
Mississippi	\$62,600,585	\$12,114,798	\$160,089,814
Missouri	\$606,181	\$3,234,537	\$10,291,541
Montana	\$52,664,462	\$115,568,640	\$383,082,910
Nebraska	\$18,921,395	\$20,405,584	\$33,235,217
Nevada	\$38,750,319	\$24,520,236	\$311,998,754
New Hampshire	\$15,216,451	\$1,214,186	\$633,688
New Jersey	n/a	n/a	n/a
New Mexico	\$143,693,943	\$41,734,432	\$154,944,185
New York	\$135,865	\$236,851	\$265,627
North Carolina	\$42,190,180	\$54,603,251	\$25,339,826
North Dakota	\$1,820,762	\$879,424	\$29,667,328
Ohio	\$0	\$6,015,744	\$2,527,205
Oklahoma	\$4,621,781	\$2,998,721	\$16,036,218
Oregon	\$46,483,908	\$113,037,013	\$347,149,636
Pennsylvania	\$9,277,963	\$8,200,968	\$24,941,991
Rhode Island	n/a	n/a	n/a
South Carolina	\$1,941,110	\$11,469,410	\$31,332,979
South Dakota	\$2,611,322	\$19,243,961	\$25,858,690
Tennessee	\$0	\$25,628,107	\$29,979,235
Texas	\$2,910,563	\$8,940,075	\$39,162,355
Utah	\$31,676,995	\$184,460,632	\$143,301,367
Vermont	\$6,657,379	\$11,605,704	\$13,015,729
Virginia	\$18,678,155	\$26,843,509	\$50,218,030
Washington	\$25,655,215	\$69,020,170	\$150,790,725
West Virginia	\$2,286,958	\$9,332,583	\$9,363,221
Wisconsin	\$6,597,265	\$20,781,223	\$49,664,169
Wyoming	\$25,135,839	\$48,128,759	\$142,485,720
United States	\$1,292,022,366	\$2,237,836,231	\$4,173,821,140

## APPENDIX D

### Hunting Multiplier Ratios Used in the Travel+Equipment Method

	Retail Sales	Total Multiplier Effect	Salaries and Wages	Jobs	Sales and Motor Fuel Taxes	State Income Taxes	Federal Income Taxes
Alabama	1.000	1.972	0.456	0.000021	0.039	0.017	0.047
Alaska	1.000	1.599	0.386	0.000019	0.004	0.000	0.039
Arizona	1.000	1.883	0.458	0.000018	0.055	0.011	0.078
Arkansas	1.000	1.742	0.391	0.000020	0.044	0.019	0.039
California	1.000	2.021	0.503	0.000017	0.068	0.024	0.090
Colorado	1.000	2.022	0.553	0.000021	0.035	0.018	0.093
Connecticut	1.000	1.716	0.412	0.000013	0.042	0.013	0.076
Delaware	1.000	1.567	0.288	0.000013	0.010	0.011	0.043
Florida	1.000	1.790	0.452	0.000018	0.054	0.000	0.072
Georgia	1.000	1.968	0.492	0.000020	0.029	0.023	0.079
Hawaii	1.000	1.640	0.375	0.000014	0.056	0.026	0.063
Idaho	1.000	1.681	0.394	0.000019	0.055	0.013	0.040
Illinois	1.000	2.103	0.539	0.000019	0.053	0.012	0.095
Indiana	1.000	1.916	0.442	0.000018	0.047	0.011	0.070
Iowa	1.000	1.944	0.444	0.000020	0.057	0.024	0.066
Kansas	1.000	1.988	0.461	0.000022	0.059	0.017	0.047
Kentucky	1.000	2.035	0.433	0.000019	0.057	0.024	0.066
Louisiana	1.000	1.708	0.365	0.000016	0.044	0.009	0.056
Maine	1.000	1.656	0.376	0.000019	0.048	0.016	0.038
Maryland	1.000	1.865	0.430	0.000016	0.046	0.016	0.072
Massachusetts	1.000	1.802	0.457	0.000014	0.052	0.022	0.085
Michigan	1.000	1.908	0.485	0.000018	0.057	0.013	0.082
Minnesota	1.000	1.983	0.487	0.000019	0.065	0.017	0.081
Mississippi	1.000	1.863	0.398	0.000019	0.069	0.014	0.041
Missouri	1.000	1.952	0.437	0.000018	0.041	0.017	0.069
Montana	1.000	1.691	0.405	0.000022	0.029	0.016	0.038
Nebraska	1.000	1.770	0.429	0.000022	0.054	0.017	0.043
Nevada	1.000	1.578	0.386	0.000014	0.064	0.000	0.065
New Hampshire	1.000	1.781	0.419	0.000016	0.010	0.000	0.069
New Jersey	1.000	1.881	0.447	0.000017	0.049	0.011	0.075
New Mexico	1.000	1.747	0.419	0.000021	0.053	0.016	0.042
New York	1.000	1.717	0.382	0.000013	0.036	0.012	0.069
North Carolina	1.000	1.956	0.488	0.000021	0.049	0.023	0.076

North Dakota	1.000	1.730	0.366	0.000018	0.063	0.004	0.037
Ohio	1.000	2.156	0.515	0.000020	0.050	0.031	0.085
Oklahoma	1.000	1.958	0.468	0.000023	0.050	0.027	0.047
Oregon	1.000	1.826	0.416	0.000017	0.016	0.033	0.066
Pennsylvania	1.000	1.953	0.448	0.000016	0.044	0.013	0.077
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	1.000	1.922	0.440	0.000019	0.052	0.017	0.068
South Dakota	1.000	1.760	0.434	0.000023	0.053	0.000	0.043
Tennessee	1.000	2.121	0.493	0.000019	0.059	0.000	0.083
Texas	1.000	2.065	0.491	0.000018	0.053	0.000	0.084
Utah	1.000	2.028	0.519	0.000023	0.056	0.021	0.055
Vermont	1.000	1.583	0.360	0.000017	0.049	0.009	0.037
Virginia	1.000	1.853	0.404	0.000017	0.044	0.018	0.063
Washington	1.000	1.767	0.432	0.000016	0.066	0.000	0.073
West Virginia	1.000	1.610	0.326	0.000017	0.060	0.012	0.032
Wisconsin	1.000	1.844	0.445	0.000020	0.044	0.011	0.047
Wyoming	1.000	1.664	0.419	0.000022	0.047	0.000	0.041
United States	1.000	2.735	0.679	0.000023	0.039	0.011	0.121
State Avg	1.000	1.843	0.434	0.000018	0.048	0.014	0.062

## APPENDIX E

### Fishing Multiplier Ratios

	Retail Sales	Total Multiplier Effect	Salaries and Wages	Jobs	Sales and Motor Fuel Taxes	State Income Taxes	Federal Income Taxes
Alabama	1.000	1.946	0.484626	0.000023	0.049	0.020	0.050
Alaska	1.000	1.637	0.404441	0.000019	0.005	0.000	0.042
Arizona	1.000	1.889	0.483605	0.000019	0.058	0.011	0.079
Arkansas	1.000	1.793	0.450111	0.000021	0.061	0.022	0.046
California	1.000	2.058	0.541661	0.000018	0.071	0.026	0.099
Colorado	1.000	1.994	0.522806	0.000019	0.041	0.017	0.089
Connecticut	1.000	1.753	0.421323	0.000013	0.067	0.013	0.078
Delaware	1.000	1.634	0.349436	0.000015	0.034	0.013	0.037
Florida	1.000	1.791	0.458474	0.000018	0.052	0.000	0.074
Georgia	1.000	2.004	0.498131	0.000019	0.037	0.027	0.084
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	1.000	1.659	0.382473	0.000019	0.057	0.017	0.038
Illinois	1.000	2.181	0.542164	0.000018	0.071	0.013	0.099
Indiana	1.000	2.082	0.509866	0.000020	0.052	0.013	0.082
Iowa	1.000	2.046	0.460947	0.000020	0.059	0.025	0.071
Kansas	1.000	1.962	0.460856	0.000021	0.064	0.021	0.068
Kentucky	1.000	1.934	0.432265	0.000020	0.060	0.024	0.063
Louisiana	1.000	1.815	0.442726	0.000019	0.057	0.011	0.068
Maine	1.000	1.680	0.405616	0.000019	0.053	0.023	0.042
Maryland	1.000	1.901	0.477247	0.000018	0.059	0.018	0.079
Massachusetts	1.000	1.814	0.455459	0.000016	0.059	0.022	0.080
Michigan	1.000	1.916	0.484813	0.000018	0.063	0.013	0.082
Minnesota	1.000	1.965	0.493205	0.000020	0.072	0.017	0.080
Mississippi	1.000	1.931	0.463171	0.000021	0.081	0.017	0.048
Missouri	1.000	1.946	0.435025	0.000018	0.050	0.017	0.069
Montana	1.000	1.705	0.426227	0.000022	0.023	0.017	0.042
Nebraska	1.000	1.814	0.441621	0.000020	0.062	0.018	0.046
Nevada	1.000	1.542	0.321523	0.000012	0.075	0.000	0.056
New Hampshire	1.000	1.741	0.399311	0.000017	0.015	0.000	0.063
New Jersey	1.000	1.886	0.447026	0.000016	0.059	0.011	0.079
New Mexico	1.000	1.712	0.383091	0.000019	0.061	0.015	0.039
New York	1.000	1.795	0.443626	0.000015	0.057	0.014	0.080



North Carolina	1.000	2.092	0.538469	0.000022	0.050	0.026	0.085
North Dakota	1.000	1.707	0.367712	0.000018	0.060	0.004	0.037
Ohio	1.000	2.152	0.526949	0.000021	0.063	0.032	0.087
Oklahoma	1.000	2.048	0.505957	0.000024	0.058	0.029	0.052
Oregon	1.000	1.765	0.404313	0.000017	0.027	0.031	0.062
Pennsylvania	1.000	2.010	0.484452	0.000019	0.054	0.014	0.080
Rhode Island	1.000	1.650	0.394772	0.000016	0.086	0.017	0.064
South Carolina	1.000	1.931	0.479641	0.000021	0.062	0.018	0.073
South Dakota	1.000	1.738	0.430439	0.000022	0.060	0.000	0.043
Tennessee	1.000	2.064	0.525737	0.000021	0.074	0.000	0.086
Texas	1.000	2.074	0.491596	0.000018	0.057	0.000	0.084
Utah	1.000	2.050	0.520703	0.000022	0.066	0.021	0.056
Vermont	1.000	1.528	0.340022	0.000017	0.071	0.008	0.034
Virginia	1.000	1.916	0.443957	0.000018	0.049	0.020	0.072
Washington	1.000	1.772	0.449613	0.000017	0.075	0.000	0.076
West Virginia	1.000	1.689	0.364647	0.000019	0.080	0.013	0.035
Wisconsin	1.000	1.900	0.483957	0.000022	0.065	0.012	0.051
Wyoming	1.000	1.476	0.274391	0.000015	0.043	0.000	0.026
United States	1.000	2.820	0.731909	0.000026	0.049	0.013	0.118
State Avg	1.000	1.859	0.448	0.000019	0.057	0.015	0.064

## APPENDIX F

### Wildlife Viewing Multiplier Ratios

	Retail Sales	Total Multiplier Effect	Salaries and Wages	Jobs	Sales and Motor Fuel Taxes	State Income Taxes	Federal Income Taxes
Alabama	1	1.94811	0.557495	0.000028	0.047726	0.012332	0.054773
Alaska	1	1.587292	0.474845	0.000026	0.004209	0	0.054119
Arizona	1	1.720239	0.517363	0.000022	0.048495	0.008529	0.056903
Arkansas	1	1.439344	0.385656	0.000021	0.052459	0.010656	0.034836
California	1	2.002828	0.6199	0.000024	0.051261	0.018172	0.073734
Colorado	1	1.900545	0.589366	0.000026	0.05205	0.014094	0.070628
Connecticut	1	1.805333	0.577778	0.000019	0.04	0.016	0.093333
Delaware	1	1.751773	0.543735	0.000024	0	0.018913	0.059102
Florida	1	1.786988	0.554745	0.000022	0.048556	0	0.069184
Georgia	1	1.983389	0.58324	0.000023	0.053005	0.015864	0.064763
Hawaii	1	1.577508	0.472644	0.000019	0.056231	0.018997	0.041033
Idaho	1	1.687912	0.442637	0.000026	0.03956	0.014066	0.040879
Illinois	1	2.142402	0.628984	0.000022	0.039584	0.012747	0.078665
Indiana	1	2.013575	0.588863	0.000030	0.041696	0.019393	0.063998
Iowa	1	1.819002	0.487792	0.000027	0.04034	0.014862	0.048301
Kansas	1	1.893551	0.516706	0.000030	0.048951	0.013986	0.058275
Kentucky	1	1.69232	0.499335	0.000031	0.037234	0.019116	0.048537
Louisiana	1	1.985549	0.566474	0.000030	0.069364	0.009393	0.057803
Maine	1	1.66764	0.496885	0.000027	0.031347	0.015771	0.04965
Maryland	1	2.05506	0.662919	0.000029	0.033847	0.028167	0.078938
Massachusetts	1	1.878329	0.615811	0.000021	0.032602	0.025357	0.080759
Michigan	1	1.886547	0.565964	0.000025	0.049365	0.015878	0.066109
Minnesota	1	1.923743	0.557899	0.000024	0.039729	0.020523	0.06157
Mississippi	1	1.520593	0.382867	0.000021	0.04514	0.006919	0.034267
Missouri	1	2.063725	0.576426	0.000025	0.057709	0.015597	0.058824
Montana	1	1.644019	0.456751	0.000029	0	0.012275	0.040822
Nebraska	1	1.905166	0.533539	0.000025	0.037008	0.013107	0.052429
Nevada	1	1.490204	0.426629	0.000017	0.045582	0	0.054778
New Hampshire	1	1.654418	0.504229	0.000024	0	0	0.065325
New Jersey	1	1.820791	0.540923	0.000016	0.026451	0.011497	0.0726
New Mexico	1	1.668458	0.489343	0.000026	0.053735	0.011105	0.045137
New York	1	1.86562	0.590677	0.000022	0.039511	0.026578	0.070068

North Carolina	1	1.927561	0.552546	0.000025	0.045713	0.01814	0.056476
North Dakota	1	1.664207	0.424354	0.000027	0.02952	0.00738	0.0369
Ohio	1	2.085701	0.596052	0.000025	0.046221	0.022308	0.061948
Oklahoma	1	1.915114	0.501553	0.000032	0.062629	0.014493	0.050207
Oregon	1	1.930725	0.585131	0.000028	0	0.023655	0.056408
Pennsylvania	1	2.032855	0.588792	0.000023	0.040549	0.017259	0.06779
Rhode Island	1	1.53066	0.471698	0.000018	0.027123	0.012382	0.050118
South Carolina	1	1.904446	0.547972	0.000027	0.050312	0.014821	0.054992
South Dakota	1	1.607609	0.420652	0.000028	0.041304	0	0.046739
Tennessee	1	1.996433	0.560758	0.000028	0.066667	0	0.062876
Texas	1	1.914335	0.517733	0.000022	0.043729	0	0.064775
Utah	1	1.867374	0.569732	0.000029	0.052906	0.017096	0.053086
Vermont	1	1.708395	0.538537	0.000034	0.020128	0.013746	0.058419
Virginia	1	1.962972	0.62034	0.000032	0.034999	0.017626	0.071773
Washington	1	1.818414	0.538634	0.000023	0.059304	0	0.069715
West Virginia	1	1.544343	0.456881	0.000024	0.039144	0.011621	0.038532
Wisconsin	1	1.870692	0.542696	0.000026	0.031336	0.020052	0.05764
Wyoming	1	1.608154	0.409211	0.000025	0.032465	0	0.05436
United States	1	2.493436	0.722503	0.000027	0.053985	0.018535	0.084606
State Avg	1.000	1.813	0.529034	0.000025	0.040	0.013	0.058

## APPENDIX G

### Standard Errors and Confidence Limits for Data from the USFWS 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation

#### Hunting:

	<i># of Days</i>	<i>Standard Error</i>	<i>Lower Confidence Limit</i>	<i>Upper Confidence Limit</i>	<i>All Hunting Total Spending per Trip</i>	<i>Standard Error</i>	<i>Lower Confidence Limit</i>	<i>Upper Confidence Limit</i>
Alabama	7,615,502	1,277,986	5,513,214	9,717,789	61.83	9.37	46.41	77.24
Alaska	1,145,862	402,907	483,081	1,808,644	195.02	63.02	91.34	298.69
Arizona	1,693,994	472,674	916,445	2,471,543	167.99	42.81	97.57	238.41
Arkansas	8,411,150	1,401,571	6,105,566	10,716,734	48.23	7.24	36.32	60.13
California	3,425,654	704,995	2,265,938	4,585,371	101.15	19.01	69.89	132.42
Colorado	2,610,127	522,945	1,749,883	3,470,372	201.94	37.56	140.15	263.73
Connecticut	765,506	390,856	122,549	1,408,464	34.74	15.52	9.20	60.27
Delaware	225,815	193,220	0	543,662	53.87	41.00	0.00	121.31
Florida	4,693,274	1,079,065	2,918,212	6,468,336	97.12	20.07	64.11	130.14
Georgia	7,972,711	1,349,565	5,752,676	10,192,745	48.01	7.32	35.98	60.05
Hawaii	316,003	264,415	0	750,965	45.50	34.05	0.00	101.51
Idaho	2,100,413	506,193	1,267,725	2,933,100	111.90	24.69	71.29	152.51
Illinois	4,521,757	878,962	3,075,864	5,967,650	72.40	12.71	51.49	93.31
Indiana	5,000,118	1,010,594	3,337,691	6,662,544	42.01	7.49	29.70	54.32
Iowa	3,989,010	879,500	2,542,232	5,435,787	31.83	6.24	21.56	42.09
Kansas	3,646,631	727,654	2,449,641	4,843,621	53.64	9.69	37.70	69.59
Kentucky	4,663,776	889,112	3,201,187	6,126,366	79.49	13.55	57.20	101.78
Louisiana	6,441,650	1,220,444	4,434,020	8,449,280	62.17	10.57	44.78	79.57
Maine	2,468,778	659,301	1,384,227	3,553,329	45.37	10.86	27.50	63.24
Maryland	1,798,899	507,707	963,721	2,634,076	48.91	12.37	28.56	69.26
Massachusetts	1,157,640	490,005	351,581	1,963,699	47.03	17.45	18.33	75.74
Michigan	8,993,683	1,117,108	7,156,041	10,831,326	86.54	9.74	70.51	102.56
Minnesota	8,437,408	1,184,320	6,489,202	10,385,614	75.71	9.63	59.88	91.55
Mississippi	8,481,295	1,558,996	5,916,746	11,045,844	44.38	7.28	32.41	56.35

Missouri	6,605,601	1,022,064	4,924,306	8,286,897	53.30	7.41	41.11	65.50
Montana	2,442,222	545,525	1,544,833	3,339,612	107.87	22.10	71.52	144.22
Nebraska	2,203,652	569,844	1,266,258	3,141,045	89.83	21.11	55.12	124.55
Nevada	490,298	240,661	94,410	886,186	276.08	124.40	71.44	480.72
New Hampshire	1,459,049	568,518	523,837	2,394,262	49.83	17.12	21.66	78.00
New Jersey	3,119,724	931,079	1,588,098	4,651,350	34.49	9.18	19.39	49.59
New Mexico	1,667,054	497,476	848,706	2,485,402	133.01	36.05	73.70	192.31
New York	13,187,353	1,707,408	10,378,667	15,996,039	48.75	5.67	39.43	58.07
North Carolina	7,526,009	1,522,281	5,021,857	10,030,162	54.45	9.80	38.33	70.56
North Dakota	1,634,942	469,934	861,901	2,407,984	63.27	16.49	36.14	90.39
Ohio	10,233,091	1,601,281	7,598,984	12,867,198	55.02	7.67	42.40	67.64
Oklahoma	5,642,357	1,210,273	3,651,458	7,633,257	33.26	6.36	22.79	43.72
Oregon	2,947,339	635,085	1,902,623	3,992,054	173.57	34.17	117.36	229.78
Pennsylvania	13,955,198	1,516,830	11,460,013	16,450,383	48.39	4.75	40.57	56.20
Rhode Island	104,333	119,865	0	301,510	37.10	36.97	0.00	97.91
South Carolina	4,744,340	1,003,975	3,092,802	6,395,879	49.94	9.48	34.35	65.54
South Dakota	2,424,869	569,472	1,488,087	3,361,651	155.72	33.53	100.57	210.88
Tennessee	6,650,666	1,210,847	4,658,822	8,642,510	73.02	11.94	53.37	92.67
Texas	14,081,256	1,388,759	11,796,748	16,365,763	93.58	8.58	79.47	107.70
Utah	2,454,904	592,969	1,479,470	3,430,338	117.80	25.93	75.15	160.46
Vermont	1,509,576	516,920	659,243	2,359,909	26.44	7.94	13.38	39.50
Virginia	5,817,697	1,062,229	4,070,331	7,565,062	40.64	6.64	29.72	51.56
Washington	2,950,917	667,219	1,853,342	4,048,493	135.13	27.81	89.38	180.88
West Virginia	5,166,160	1,057,049	3,427,316	6,905,005	44.78	8.12	31.42	58.14
Wisconsin	9,652,829	1,290,658	7,529,697	11,775,961	67.95	8.20	54.46	81.44
Wyoming	1,304,045	379,642	679,534	1,928,556	155.96	41.77	87.25	224.67

## Fishing:

	Fishing Days	Standard Error	Lower Confidence Limit	Upper Confidence Limit	Fishing Total Spending per Trip	Standard Error	Lower Confidence Limit	Upper Confidence Limit
Alabama	11,216,843	1,724,354	8,380,280	14,053,406	62.36	7.15	50.59	74.13
Alaska	3,641,214	790,552	2,340,756	4,941,672	214.35	34.50	157.60	271.11
Arizona	4,245,633	928,323	2,718,542	5,772,725	114.84	18.61	84.23	145.45
Arkansas	13,005,934	2,096,391	9,557,372	16,454,497	46.60	5.57	37.44	55.76
California	27,729,819	2,472,208	23,663,038	31,796,600	98.53	6.60	87.68	109.39
Colorado	9,267,000	1,363,915	7,023,359	11,510,641	105.13	11.48	86.25	124.02
Connecticut	4,913,633	1,192,029	2,952,745	6,874,521	47.42	8.55	33.35	61.49
Delaware	1,307,666	479,754	518,471	2,096,861	56.65	15.46	31.22	82.09
Florida	50,962,122	4,036,415	44,322,219	57,602,025	104.69	6.25	94.41	114.96
Georgia	13,543,820	1,837,412	10,521,277	16,566,363	44.94	4.55	37.46	52.42
Hawaii	2,760,573	1,024,290	1,075,616	4,445,531	42.15	11.61	23.06	61.24
Idaho	4,070,034	892,887	2,601,235	5,538,834	75.11	12.26	54.95	95.28
Illinois	15,002,576	1,903,793	11,870,836	18,134,316	44.37	4.20	37.45	51.28
Indiana	13,476,865	2,049,975	10,104,656	16,849,074	43.68	4.95	35.54	51.82
Iowa	7,484,539	1,447,947	5,102,665	9,866,412	47.83	6.89	36.50	59.17
Kansas	5,662,266	1,270,710	3,571,949	7,752,583	38.31	6.39	27.80	48.82
Kentucky	12,393,649	1,998,985	9,105,318	15,681,979	52.63	6.31	42.24	63.01
Louisiana	13,091,780	1,884,510	9,991,761	16,191,800	58.97	6.33	48.55	69.39
Maine	4,149,283	959,815	2,570,387	5,728,180	70.50	12.12	50.56	90.44
Maryland	7,438,042	1,256,663	5,370,831	9,505,254	76.97	9.69	61.03	92.91
Massachusetts	7,863,927	1,424,260	5,521,020	10,206,835	67.10	9.05	52.21	81.99
Michigan	19,819,089	2,410,379	15,854,016	23,784,163	56.30	5.10	47.91	64.69
Minnesota	28,761,733	3,195,282	23,505,494	34,017,971	63.15	5.23	54.55	71.75
Mississippi	9,453,898	1,762,538	6,554,524	12,353,272	26.97	3.73	20.84	33.11
Missouri	13,278,827	1,696,462	10,488,147	16,069,507	68.63	6.55	57.86	79.40
Montana	4,068,266	978,108	2,459,279	5,677,254	80.62	14.40	56.92	104.31
Nebraska	3,203,580	835,730	1,828,804	4,578,356	54.00	10.46	36.79	71.21
Nevada	1,575,313	538,171	690,021	2,460,605	160.88	40.85	93.68	228.08

New Hampshire	3,190,712	879,566	1,743,826	4,637,598	54.05	11.08	35.83	72.27
New Jersey	10,666,166	1,686,292	7,892,216	13,440,117	67.57	7.97	54.45	80.68
New Mexico	2,485,037	624,311	1,458,044	3,512,029	87.02	16.27	60.26	113.79
New York	23,776,868	2,700,055	19,335,277	28,218,459	37.34	3.17	32.13	42.55
North Carolina	15,475,426	1,924,226	12,310,074	18,640,777	71.21	6.61	60.33	82.08
North Dakota	2,185,612	736,875	973,454	3,397,771	89.00	22.28	52.36	125.65
Ohio	19,453,422	2,349,355	15,588,733	23,318,112	46.84	4.22	39.90	53.79
Oklahoma	12,740,550	2,063,348	9,346,343	16,134,757	43.20	5.21	34.64	51.77
Oregon	8,848,056	1,515,694	6,354,740	11,341,372	69.83	8.91	55.18	84.48
Pennsylvania	18,607,108	2,342,060	14,754,419	22,459,796	33.65	3.16	28.45	38.85
Rhode Island	2,157,329	726,833	961,688	3,352,970	50.47	12.65	29.66	71.28
South Carolina	10,725,547	1,689,554	7,946,230	13,504,864	57.33	6.73	46.25	68.40
South Dakota	2,984,192	920,298	1,470,301	4,498,082	79.43	18.16	49.56	109.29
Tennessee	15,035,262	2,252,064	11,330,616	18,739,908	37.65	4.19	30.75	44.55
Texas	33,188,236	3,018,258	28,223,202	38,153,269	68.98	4.70	61.24	76.71
Utah	5,237,905	1,030,106	3,543,380	6,932,429	96.77	14.14	73.50	120.03
Vermont	2,321,274	800,541	1,004,385	3,638,164	51.98	13.27	30.15	73.82
Virginia	14,128,095	1,994,459	10,847,211	17,408,980	41.27	4.34	34.12	48.42
Washington	12,740,633	1,865,553	9,671,799	15,809,467	79.63	8.69	65.34	93.93
West Virginia	4,151,742	1,049,787	2,424,842	5,878,641	33.00	6.17	22.85	43.15
Wisconsin	21,223,645	2,527,489	17,065,925	25,381,364	59.29	5.26	50.63	67.94
Wyoming	2,497,084	650,754	1,426,594	3,567,573	100.81	19.46	68.80	132.81

### Wildlife Viewing:

	Non-Residential Trips	Standard Error	Lower Confidence Limit	Upper Confidence Limit	Total Spending per Trip	Standard Error	Lower Confidence Limit	Upper Confidence Limit
Alabama	2,593,653	1,295,003	463,373	4,723,933	149.42	53.35	61.65	237.18
Alaska	1,523,843	956,959	0	3,098,040	283.39	129.16	70.93	495.85
Arizona	2,336,891	1,168,190	415,219	4,258,564	316.10	117.88	122.19	510.01
Arkansas	1,333,469	904,165	0	2,820,820	128.60	62.64	25.55	231.65
California	16,920,623	3,255,203	11,565,815	22,275,431	114.14	15.70	88.31	139.97
Colorado	4,044,913	1,553,668	1,489,129	6,600,698	132.50	37.15	71.39	193.61

Connecticut	3,852,326	1,636,334	1,160,557	6,544,096	28.76	8.95	14.05	43.48
Delaware	555,352	580,807	0	1,510,780	39.45	29.76	0.00	88.40
Florida	8,545,581	2,276,472	4,800,785	12,290,377	160.41	30.88	109.62	211.20
Georgia	3,383,863	1,464,728	974,386	5,793,340	119.50	36.94	58.73	180.26
Hawaii	656,596	624,926	0	1,684,600	177.33	123.44	0.00	380.40
Idaho	1,798,912	1,028,002	107,848	3,489,976	107.92	45.68	32.78	183.07
Illinois	6,901,987	2,138,431	3,384,268	10,419,705	59.61	13.27	37.78	81.45
Indiana	4,065,574	1,610,281	1,416,663	6,714,486	83.71	23.68	44.76	122.67
Iowa	3,768,568	1,597,227	1,141,129	6,396,007	26.31	8.07	13.03	39.60
Kansas	1,709,320	1,018,466	33,944	3,384,696	39.51	17.00	11.56	67.47
Kentucky	3,944,968	1,608,915	1,298,302	6,591,634	77.54	22.68	40.24	114.84
Louisiana	1,430,493	921,559	0	2,946,457	74.67	35.26	16.68	132.67
Maine	2,720,457	1,293,465	592,707	4,848,208	91.89	31.36	40.31	143.47
Maryland	3,467,708	1,460,562	1,065,084	5,870,333	140.28	42.40	70.53	210.03
Massachusetts	5,368,676	1,871,470	2,290,108	8,447,244	59.08	14.75	34.82	83.34
Michigan	8,276,432	2,313,436	4,470,830	12,082,033	53.00	10.59	35.58	70.43
Minnesota	9,736,549	2,633,723	5,404,075	14,069,023	37.48	7.51	25.12	49.83
Mississippi	957,985	772,977	0	2,229,533	223.60	129.02	11.37	435.84
Missouri	4,076,273	1,569,603	1,494,276	6,658,270	78.60	21.90	42.57	114.62
Montana	2,699,859	1,274,526	603,264	4,796,454	109.81	37.60	47.95	171.67
Nebraska	1,306,287	900,352	0	2,787,367	73.59	36.31	13.86	133.32
Nevada	786,224	670,421	0	1,889,067	296.91	195.28	0.00	618.15
New Hampshire	2,137,255	1,131,327	276,222	3,998,289	133.68	51.49	48.98	218.39
New Jersey	6,521,712	2,055,620	3,140,216	9,903,207	86.84	19.58	54.63	119.04
New Mexico	2,391,527	1,209,392	402,077	4,380,978	164.97	59.99	66.28	263.66
New York	12,605,663	2,858,474	7,903,473	17,307,852	60.69	9.84	44.50	76.87
North Carolina	4,172,966	1,610,665	1,523,423	6,822,509	138.92	38.37	75.79	202.04
North Dakota	350,277	452,609	0	1,094,819	54.84	52.76	0.00	141.64
Ohio	19,680,259	3,929,501	13,216,230	26,144,288	19.96	3.12	14.83	25.09
Oklahoma	3,139,399	1,405,401	827,516	5,451,283	31.83	10.18	15.08	48.57
Oregon	5,714,528	1,871,335	2,636,182	8,792,874	99.20	23.35	60.79	137.62
Pennsylvania	12,780,430	2,890,688	8,025,248	17,535,612	56.39	9.13	41.36	71.42
Rhode Island	1,447,930	1,010,746	0	3,110,608	105.38	54.30	16.05	194.71



South Carolina	2,702,700	1,308,149	550,794	4,854,605	66.93	23.13	28.87	104.98
South Dakota	1,074,870	808,877	0	2,405,473	63.95	34.68	6.90	121.00
Tennessee	4,693,989	1,704,829	1,889,544	7,498,433	63.61	16.55	36.38	90.83
Texas	4,546,792	1,642,962	1,844,119	7,249,465	218.35	57.85	123.19	313.51
Utah	2,914,167	1,326,852	731,494	5,096,839	145.56	47.95	66.68	224.44
Vermont	2,706,796	1,316,453	541,231	4,872,361	35.65	12.39	15.28	56.03
Virginia	5,247,149	1,801,338	2,283,948	8,210,349	78.40	19.29	46.67	110.13
Washington	7,039,758	2,083,202	3,612,891	10,466,625	101.45	21.54	66.02	136.88
West Virginia	3,040,998	1,454,671	648,064	5,433,932	39.03	13.68	16.52	61.54
Wisconsin	10,922,138	2,692,864	6,492,376	15,351,900	72.93	12.93	51.67	94.20
Wyoming	1,488,115	931,443	0	3,020,338	147.37	68.95	33.95	260.80

## APPENDIX H

### Economic Effects for Types of Hunting

(This appendix is added to fulfill a grant requirement for details for specific types of hunting)

#### Big Game Hunting, By State

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$28,588,034	\$54,883,948	\$12,992,698	628	\$1,108,517	\$476,948	\$1,322,523
Alaska	\$25,749,741	\$43,085,793	\$10,367,727	474	\$60,898	\$0	\$1,082,599
Arizona	\$301,247,811	\$576,172,355	\$152,738,440	6,308	\$15,570,240	\$3,518,399	\$24,171,383
Arkansas	\$68,807,638	\$125,796,448	\$29,362,217	1,438	\$3,665,821	\$1,483,473	\$2,970,274
California	\$212,020,556	\$387,695,430	\$92,122,457	4,036	\$10,129,523	\$2,817,385	\$12,449,235
Colorado	\$397,259,203	\$796,440,458	\$199,901,862	7,375	\$21,971,594	\$6,487,969	\$34,134,701
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$70,541,169	\$128,599,233	\$32,922,524	1,371	\$3,551,974	\$0	\$5,180,738
Georgia	\$10,990,060	\$21,630,907	\$5,516,304	224	\$337,535	\$254,390	\$884,349
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$311,872,792	\$522,351,263	\$117,744,310	5,767	\$17,097,416	\$3,874,383	\$11,908,909
Illinois	\$6,223,780	\$12,798,968	\$3,146,778	108	\$283,579	\$69,652	\$560,690
Indiana	\$4,741,569	\$9,442,721	\$2,188,508	89	\$220,941	\$54,234	\$349,764
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$1,583,754	\$3,175,177	\$796,950	29	\$87,592	\$25,863	\$136,113
Kentucky	\$39,558,104	\$79,865,014	\$16,972,420	725	\$2,187,787	\$941,459	\$2,619,010
Louisiana	\$11,651,124	\$20,200,952	\$4,582,889	211	\$550,549	\$107,415	\$664,689
Maine	\$30,485	\$51,090	\$12,104	1	\$962	\$234	\$1,595
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$36,977,023	\$66,419,618	\$17,677,824	707	\$2,023,175	\$458,965	\$2,864,650
Minnesota	\$68,317,956	\$134,772,351	\$35,426,127	1,398	\$4,385,574	\$1,244,677	\$5,792,161
Mississippi	\$124,364,712	\$227,140,793	\$49,433,963	2,390	\$8,432,827	\$1,742,698	\$5,030,905
Missouri	\$8,304,029	\$16,203,717	\$3,568,176	151	\$326,599	\$136,447	\$553,679
Montana	\$355,290,392	\$581,422,751	\$132,112,267	7,263	\$9,411,085	\$5,174,785	\$12,571,593
Nebraska	\$19,269,623	\$33,412,218	\$7,868,306	361	\$1,254,586	\$320,197	\$819,945
Nevada	\$198,802,790	\$353,205,079	\$85,661,918	4,203	\$10,266,732	\$2,124,417	\$8,657,503
New Hampshire	\$477,602	\$800,411	\$189,627	9	\$15,072	\$3,672	\$24,990
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$153,256,949	\$275,622,325	\$67,909,751	3,257	\$8,625,319	\$2,543,554	\$7,063,476
New York	\$225,460	\$379,192	\$88,340	4	\$9,974	\$2,479	\$12,549
North Carolina	\$20,063,690	\$39,110,920	\$9,660,879	407	\$965,750	\$462,614	\$1,507,114
North Dakota	\$327,865	\$565,396	\$135,575	7	\$20,232	\$639	\$13,645

Ohio	\$1,999,353	\$4,311,839	\$1,012,166	39	\$92,122	\$61,928	\$168,947
Oklahoma	\$10,275,129	\$18,971,316	\$4,472,936	219	\$525,490	\$225,364	\$452,668
Oregon	\$278,048,927	\$493,274,299	\$112,672,305	4,707	\$7,253,070	\$8,808,649	\$17,687,630
Pennsylvania	\$20,685,844	\$40,732,402	\$9,618,841	359	\$921,682	\$269,328	\$1,630,453
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$22,707,739	\$41,298,020	\$9,794,548	425	\$1,167,154	\$373,419	\$1,493,549
South Dakota	\$6,329,386	\$10,870,321	\$2,670,237	136	\$327,197	\$27,112	\$264,488
Tennessee	\$16,516,499	\$33,680,390	\$7,784,530	296	\$945,469	\$0	\$1,304,289
Texas	\$29,633,029	\$60,053,127	\$14,170,785	542	\$1,490,081	\$30,103	\$2,336,088
Utah	\$105,286,275	\$209,907,744	\$52,724,767	2,368	\$6,054,582	\$2,067,759	\$5,546,415
Vermont	\$11,047,551	\$18,580,392	\$4,328,666	174	\$488,750	\$121,458	\$614,919
Virginia	\$35,982,500	\$66,144,440	\$14,628,336	626	\$1,530,415	\$632,473	\$2,255,314
Washington	\$104,945,325	\$189,262,853	\$48,380,492	1,847	\$7,513,288	\$259,511	\$8,052,393
West Virginia	\$6,956,961	\$11,656,165	\$2,377,782	115	\$371,087	\$91,665	\$282,405
Wisconsin	\$28,024,123	\$48,495,299	\$10,909,100	513	\$1,082,126	\$238,576	\$1,124,628
Wyoming	\$115,648,790	\$192,880,797	\$47,461,282	2,534	\$5,107,300	\$240,414	\$4,591,338
United States <sup>1</sup>	\$3,270,631,340	\$8,544,485,678	\$2,108,730,371	73,224	\$125,831,076	\$35,890,010	\$373,043,448

<sup>1</sup> The sum of the state impacts (except retail sales) will not equal the U.S. impacts as U.S.-level multipliers are greater than the sum of the states.

### Small Game Hunting, By State

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$2,462,664	\$4,934,030	\$1,151,289	52	\$120,864	\$40,578	\$156,405
Alaska	\$834,446	\$1,540,443	\$352,929	16	\$43,584	\$12,326	\$46,161
Arizona	\$54,117,619	\$101,244,107	\$26,651,078	1,025	\$3,347,848	\$640,111	\$4,447,209
Arkansas	\$11,817,664	\$24,205,671	\$5,647,775	281	\$652,723	\$282,852	\$623,638
California	\$28,007,197	\$51,578,781	\$11,851,698	539	\$1,448,847	\$418,095	\$1,516,308
Colorado	\$31,474,601	\$58,642,468	\$13,395,703	683	\$2,008,681	\$336,614	\$1,327,982
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$6,461,423	\$12,945,679	\$3,020,699	138	\$317,118	\$106,467	\$410,367
Georgia	\$2,114,415	\$4,236,303	\$988,484	45	\$103,773	\$34,840	\$134,287
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$38,347,378	\$64,090,980	\$14,534,047	739	\$1,901,961	\$451,091	\$1,442,644
Illinois	\$1,107,109	\$2,017,836	\$457,434	20	\$56,722	\$16,475	\$61,739
Indiana	\$1,415,046	\$2,579,086	\$584,666	26	\$72,499	\$21,058	\$78,911
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$125,471	\$233,769	\$53,397	3	\$8,009	\$1,341	\$5,293
Kentucky	\$9,858,849	\$19,752,538	\$4,608,988	210	\$483,860	\$162,447	\$626,139
Louisiana	\$1,538,776	\$3,082,990	\$719,374	33	\$75,521	\$25,355	\$97,728
Maine	\$9,135	\$14,869	\$3,198	0	\$452	\$141	\$330

Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$9,629,706	\$17,551,259	\$3,978,785	174	\$493,371	\$143,302	\$537,005
Minnesota	\$15,628,113	\$30,720,543	\$7,179,873	273	\$1,178,124	\$258,608	\$1,202,370
Mississippi	\$25,966,904	\$52,025,571	\$12,139,464	553	\$1,274,423	\$427,864	\$1,649,168
Missouri	\$1,047,455	\$1,909,108	\$432,786	19	\$53,666	\$15,587	\$58,412
Montana	\$31,235,434	\$55,292,033	\$13,364,794	711	\$1,274,590	\$536,329	\$1,295,618
Nebraska	\$8,713,222	\$15,397,180	\$3,402,648	171	\$645,614	\$131,326	\$339,585
Nevada	\$21,330,615	\$38,375,644	\$9,046,293	434	\$1,047,433	\$318,371	\$923,930
New Hampshire	\$143,118	\$232,950	\$50,108	2	\$7,084	\$2,216	\$5,165
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$9,742,804	\$18,226,994	\$4,797,998	185	\$602,714	\$115,239	\$800,632
New York	\$27,631	\$45,511	\$9,410	0	\$1,203	\$258	\$1,309
North Carolina	\$3,226,607	\$6,279,372	\$1,526,508	69	\$197,830	\$70,606	\$224,734
North Dakota	\$550,078	\$983,582	\$240,113	13	\$29,822	\$0	\$22,896
Ohio	\$538,151	\$1,013,927	\$233,638	10	\$17,013	\$14,163	\$35,060
Oklahoma	\$2,222,970	\$4,580,086	\$1,074,616	55	\$129,803	\$59,557	\$109,447
Oregon	\$30,990,049	\$59,030,460	\$13,511,652	610	\$893,277	\$1,043,543	\$1,993,318
Pennsylvania	\$2,455,143	\$5,034,930	\$1,194,404	47	\$128,017	\$33,443	\$196,410
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$6,651,034	\$13,325,571	\$3,109,342	142	\$326,424	\$109,591	\$422,410
South Dakota	\$12,628,009	\$22,577,231	\$5,510,959	302	\$682,429	\$2,797	\$525,613
Tennessee	\$4,243,305	\$8,501,605	\$1,983,735	90	\$208,256	\$69,918	\$269,494
Texas	\$2,715,140	\$5,402,194	\$1,217,068	48	\$78,891	\$1,267	\$200,008
Utah	\$9,468,598	\$18,222,823	\$4,437,322	203	\$458,940	\$171,230	\$462,925
Vermont	\$1,353,929	\$2,230,045	\$461,109	19	\$58,961	\$12,647	\$64,129
Virginia	\$3,781,163	\$7,575,689	\$1,767,685	80	\$185,575	\$62,303	\$240,143
Washington	\$24,102,923	\$41,667,627	\$8,656,916	308	\$1,690,131	\$30,708	\$1,506,288
West Virginia	\$1,318,447	\$2,443,480	\$556,901	25	\$67,068	\$19,977	\$75,256
Wisconsin	\$9,978,992	\$18,187,873	\$4,123,103	180	\$511,267	\$148,500	\$556,484
Wyoming	\$13,852,138	\$24,962,226	\$5,823,381	293	\$757,398	\$154,221	\$581,602
United States <sup>1</sup>	\$443,233,470	\$1,168,699,867	\$283,148,589	10,118	\$14,433,103	\$3,180,282	\$49,283,820

### Migratory Bird Hunting, By State

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$1,580,587	\$2,961,755	\$730,264	36	\$56,563	\$26,641	\$73,730
Alaska	\$1,433,529	\$2,302,649	\$512,489	24	\$6,524	\$0	\$52,508
Arizona	\$20,277,036	\$38,388,224	\$10,304,948	399	\$1,206,965	\$246,643	\$1,705,503
Arkansas	\$31,383,034	\$56,582,366	\$13,493,309	711	\$1,453,831	\$665,024	\$1,314,795
California	\$67,779,536	\$126,847,778	\$30,893,285	1,379	\$3,464,742	\$880,772	\$4,166,756
Colorado	\$27,057,033	\$50,648,534	\$12,630,013	623	\$1,492,764	\$324,696	\$1,273,242
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$33,738,006	\$66,299,383	\$15,824,813	711	\$1,707,799	\$544,415	\$2,159,954
Georgia	\$1,102,812	\$2,299,449	\$541,722	23	\$40,939	\$24,778	\$85,157
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$23,655,709	\$42,301,132	\$10,890,151	516	\$1,571,544	\$370,704	\$1,118,868
Illinois	\$2,046,117	\$4,124,440	\$966,107	39	\$116,756	\$35,353	\$154,283
Indiana	\$31,597	\$63,691	\$14,919	1	\$1,803	\$546	\$2,382
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$107,821	\$201,816	\$50,322	2	\$5,948	\$1,293	\$5,073
Kentucky	\$2,804,328	\$5,769,974	\$1,297,735	62	\$169,641	\$71,016	\$180,457
Louisiana	\$4,685,452	\$8,518,185	\$1,979,565	91	\$210,549	\$46,505	\$287,955
Maine	\$2,119	\$4,271	\$1,000	0	\$121	\$37	\$160
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$2,605,256	\$5,251,517	\$1,230,113	50	\$148,661	\$45,014	\$196,444
Minnesota	\$22,630,910	\$48,382,946	\$11,383,929	451	\$1,508,504	\$399,000	\$1,856,930
Mississippi	\$5,351,537	\$9,649,691	\$2,102,871	99	\$377,971	\$74,967	\$216,738
Missouri	\$786,725	\$1,489,715	\$347,187	15	\$37,344	\$13,316	\$54,090
Montana	\$11,414,967	\$20,436,788	\$4,916,335	238	\$747,211	\$114,190	\$500,390
Nebraska	\$5,397,309	\$9,679,587	\$2,313,586	111	\$309,669	\$91,842	\$236,247
Nevada	\$56,884,465	\$91,373,009	\$22,425,899	877	\$3,136,898	\$252	\$3,690,009
New Hampshire	\$33,194	\$66,910	\$15,673	1	\$1,894	\$574	\$2,503
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$6,790,270	\$12,338,411	\$3,144,133	170	\$368,916	\$108,170	\$311,737
New York	\$15,477	\$31,198	\$7,308	0	\$883	\$267	\$1,167
North Carolina	\$2,088,897	\$4,107,295	\$1,069,283	46	\$95,064	\$50,654	\$163,855
North Dakota	\$244,766	\$437,941	\$105,572	5	\$14,167	\$495	\$10,548
Ohio	\$68,419	\$137,915	\$32,305	1	\$3,904	\$1,182	\$5,159
Oklahoma	\$3,026,506	\$5,735,187	\$1,386,570	71	\$150,058	\$72,539	\$136,680
Oregon	\$33,260,529	\$65,771,916	\$15,898,795	708	\$435,851	\$1,230,331	\$2,371,297
Pennsylvania	\$660,915	\$1,332,233	\$312,062	13	\$37,713	\$11,419	\$49,835

Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$1,894,543	\$3,431,146	\$844,554	39	\$91,897	\$30,608	\$122,670
South Dakota	\$3,218,262	\$5,734,836	\$1,484,742	75	\$166,741	\$643	\$147,447
Tennessee	\$7,171,173	\$16,346,148	\$3,744,887	138	\$434,908	\$0	\$639,411
Texas	\$7,058,181	\$14,981,560	\$3,750,692	138	\$381,724	\$1,261	\$640,813
Utah	\$12,828,045	\$26,007,781	\$6,961,373	313	\$742,762	\$272,946	\$732,035
Vermont	\$758,383	\$1,528,702	\$358,083	15	\$43,275	\$13,103	\$57,184
Virginia	\$3,070,518	\$6,033,950	\$1,440,226	65	\$155,428	\$49,548	\$196,579
Washington	\$20,048,235	\$37,171,131	\$9,621,429	368	\$1,010,984	\$34,910	\$1,601,743
West Virginia	\$235,266	\$465,044	\$110,519	5	\$12,255	\$3,858	\$15,673
Wisconsin	\$3,706,615	\$7,471,571	\$1,750,137	71	\$211,507	\$64,043	\$279,490
Wyoming	\$3,263,464	\$5,962,176	\$1,534,056	73	\$196,099	\$40,899	\$162,703
United States <sup>1</sup>	\$432,197,545	\$1,194,283,980	\$302,811,719	10,708	\$12,649,403	\$2,804,749	\$53,022,075

**Other Hunting, By State (varmint, crow, other species not covered above)**

	Retail Sales	Total Multiplier Effect	Salaries, Wages & Business Profits	Jobs (Full & Part-time)	Sales/Fuel Tax Revenues	State Income Tax Revenues	Federal Income Tax Revenues
Alabama	\$853,069	\$1,709,153	\$398,808	18	\$41,868	\$14,056	\$54,179
Alaska	\$285,760	\$527,532	\$120,862	5	\$14,925	\$4,221	\$15,808
Arizona	\$3,129,619	\$5,854,940	\$1,541,230	59	\$193,606	\$37,018	\$257,182
Arkansas	\$1,674,387	\$3,424,005	\$798,907	39	\$91,714	\$39,146	\$89,699
California	\$1,591,513	\$2,927,394	\$673,632	31	\$81,960	\$23,863	\$85,221
Colorado	\$29,921,972	\$55,748,820	\$12,734,335	649	\$1,909,785	\$319,914	\$1,262,386
Connecticut	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Delaware	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Florida	\$139,304	\$279,100	\$65,124	3	\$6,837	\$2,295	\$8,847
Georgia	\$418,372	\$838,222	\$195,588	9	\$20,533	\$6,894	\$26,571
Hawaii	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Idaho	\$11,301,669	\$18,873,339	\$4,275,740	217	\$561,962	\$132,084	\$424,574
Illinois	\$358,353	\$653,141	\$148,064	6	\$18,360	\$5,333	\$19,984
Indiana	\$42,217	\$76,945	\$17,443	1	\$2,163	\$628	\$2,354
Iowa	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kansas	\$119,331	\$222,330	\$50,785	3	\$7,617	\$1,276	\$5,034
Kentucky	\$433,931	\$869,395	\$202,862	9	\$21,297	\$7,150	\$27,559
Louisiana	\$2,022,621	\$4,052,390	\$945,570	43	\$99,268	\$33,327	\$128,457
Maine	\$311	\$506	\$109	0	\$15	\$5	\$11
Maryland	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Massachusetts	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Michigan	\$100,142	\$182,521	\$41,377	2	\$5,131	\$1,490	\$5,584
Minnesota	\$2,470,395	\$4,856,112	\$1,134,950	43	\$186,230	\$40,879	\$190,063

Mississippi	\$2,892,991	\$5,796,205	\$1,352,466	62	\$141,984	\$47,669	\$183,735
Missouri	\$114,799	\$209,235	\$47,432	2	\$5,882	\$1,708	\$6,402
Montana	\$2,077,414	\$3,664,850	\$882,708	47	\$85,866	\$34,992	\$85,679
Nebraska	\$1,359,768	\$2,402,854	\$531,011	27	\$100,753	\$20,495	\$52,995
Nevada	\$1,814,836	\$3,265,039	\$769,671	37	\$89,116	\$27,087	\$78,606
New Hampshire	\$4,868	\$7,923	\$1,704	0	\$241	\$75	\$176
New Jersey	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Mexico	\$6,345,113	\$11,870,539	\$3,124,751	120	\$392,524	\$75,051	\$521,421
New York	\$4,047	\$6,666	\$1,378	0	\$176	\$38	\$192
North Carolina	\$15,324	\$29,822	\$7,250	0	\$940	\$335	\$1,067
North Dakota	\$22,116	\$39,545	\$9,654	1	\$1,199	\$0	\$921
Ohio	\$103,833	\$195,632	\$45,079	2	\$3,283	\$2,733	\$6,765
Oklahoma	\$353,689	\$716,937	\$171,541	8	\$20,868	\$8,545	\$19,462
Oregon	\$2,479,330	\$4,722,686	\$1,080,989	49	\$71,462	\$83,491	\$159,475
Pennsylvania	\$727,218	\$1,491,356	\$353,785	14	\$37,919	\$9,906	\$58,177
Rhode Island	n/a	n/a	n/a	n/a	n/a	n/a	n/a
South Carolina	\$132,990	\$266,451	\$62,173	3	\$6,527	\$2,191	\$8,446
South Dakota	\$220,942	\$394,897	\$96,364	5	\$11,841	\$175	\$9,196
Tennessee	\$335,217	\$671,618	\$156,713	7	\$16,452	\$5,523	\$21,290
Texas	\$1,268,866	\$2,521,370	\$569,977	22	\$37,762	\$902	\$93,702
Utah	\$2,903,138	\$5,587,682	\$1,360,669	62	\$140,712	\$52,511	\$141,955
Vermont	\$198,309	\$326,633	\$67,538	3	\$8,636	\$1,852	\$9,393
Virginia	\$7,062,090	\$14,149,136	\$3,301,510	150	\$346,598	\$116,364	\$448,516
Washington	\$2,738,361	\$4,725,731	\$982,624	35	\$191,876	\$3,266	\$169,597
West Virginia	\$520,193	\$1,023,673	\$237,619	11	\$25,751	\$8,408	\$32,244
Wisconsin	\$818,914	\$1,492,566	\$338,357	15	\$41,956	\$12,186	\$45,667
Wyoming	\$3,439,736	\$6,201,351	\$1,436,939	71	\$188,092	\$43,792	\$144,479
United States <sup>1</sup>	\$92,817,069	\$244,736,249	\$59,293,858	2,119	\$3,022,421	\$665,980	\$10,320,474

<sup>1</sup> The sum of the state impacts (except retail sales) will not equal the U.S. impacts as U.S.-level multipliers are greater than the sum of the states.