



Bridging the 50-State Survey
of Fishing, Hunting, and Wildlife-
Associated Recreation with
Previous National Survey of
Fishing, Hunting, and Wildlife-
Associated Recreation Trends

Final Methodology Overview

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OVERVIEW

In 2016, the Rockville Institute conducted the 50-State Survey of Fishing, Hunting and Wildlife-Associated Recreation (FHWAR); see more details in Rockville Institute (2018). Concurrently, the Census Bureau conducted the 2016 National Survey of FHWAR; see more details in U.S. Department of the Interior, U.S. Fish & Wildlife Service, and U.S. Department of Commerce U.S. Census Bureau (2018). The two surveys were based on samples of addresses intended to be representative of the United States population living in households, and used questionnaires as nearly identical as possible. Both surveys identified likely sports-persons and wildlife watchers within sampled households, and individual participation surveys covered all of calendar year 2016. However, differences in sample design, sample selection process and mode of data collection resulted in estimates that were substantially different between the surveys.

Estimates from the 2016 National Survey of FHWAR are directly comparable to those from previous surveys such as the 2011 National Survey of FHWAR; see U.S. Department of the Interior, U.S. Fish & Wildlife Service, and U.S. Department of Commerce U.S. Census Bureau (2014). Due to its modest sample size, it can only produce reliable estimates at the national and census division level. In contrast, the 50-State Survey of FHWAR produced state-level estimates, but these estimates are not directly comparable to those from previous surveys. The Rockville Institute therefore completed a project to create new state-level estimates that are calibrated to those of the 2016 National Survey of FHWAR. The dual purpose of these calibrated estimates is to maintain the fine level of granularity of the 50-State Survey of FHWAR but enable comparison to previous National Surveys of FHWAR.

Through this bridging project, the Rockville Institute created new state-level tables showing adjusted survey

estimates by state of residency of the participants. These tables show the estimated demographics, participation, days, trips and expenditures, for fishing, hunting and wildlife-related activities for residents of each of the 50 states and DC. The tables correspond to Tables 5, 15, 22, 28, 30, 33, 35, and 36 in the state reports released by the Rockville Institute in 2018, with the exception of Tables 28 and 33, where we report an extended set of statistics compared to those reported in the 50-State Survey of FHWAR report.

The calibration procedure used to create these tables involved a combination of data harmonization and statistical modeling of the differences between the two surveys. The procedure consisted of the following major steps. First, the estimated demographic compositions of both surveys were aligned at the census division level, using survey calibration methods. Second, a statistical model was developed to account for the differences in participation rates in hunting, fishing and wildlife-related activities between the two surveys. This “bridging model” was used to predict state-level participating rates that are consistent with those obtained using the Census Bureau methodology. By combining these predicted participation rates with the harmonized population estimates, calibrated estimates of the numbers of participants in each state were obtained. Third, the characteristics of the participants’ activities, such as the number and type of activities, days of participation and types of associated expenditures, were adjusted by means of estimated products or ratios of these characteristics between the two surveys. Finally, applying these products or ratios to the calibrated estimates of the participant numbers made it possible to produce the calibrated tables of estimates mentioned above. For more details about the bridging project, see Rockville Institute (2020).

References

- Rockville Institute. 2018. *2016 50-State Survey of Fishing, Hunting, and Wildlife-Related Recreation: National*.
- Rockville Institute. 2020. *Bridging the 50-State Surveys of Fishing, Hunting, and Wildlife-Associated Recreation with Previous National Survey of Fishing, Hunting, and Wildlife-Associated Recreation Trends. Final Methodology Report*.
- U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce U.S. Census Bureau. 2014. *2011 National Survey of Fishing, Hunting, and Wildlife-Related Recreation*.
- U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce U.S. Census Bureau. 2018. *2016 National Survey of Fishing, Hunting, and Wildlife-Related Recreation*.

APPENDIX A: POINT ESTIMATES

The tables in Appendix A depict the calibrated point estimates, subject to rounding error. The format of the calibrated tables in this appendix matches closely the format used in the 50-State Survey of FHWAR reports. Summary statistics reported in the calibrated tables are described below, by table.

Table 5

Fishing and hunting, participation, days, and trips

- Total fishing participation and total hunting participation: product-type statistics derived using model predictions for percent participation in the population and total population based on adjusted 50-State Survey of FHWAR weights.
- Total freshwater, freshwater except Great Lakes, Great Lakes, and saltwater fishing participation, total big game, small game, migratory birds, and other animals hunting participation: product-type statistics derived using total fishing participation, total hunting participation, percent participation of freshwater, freshwater except Great Lakes, Great Lakes, and saltwater fishing in all fishing, and percent participation of big game, small game, migratory birds, and other animals hunting in all hunting (columns denoted by %).
- Total fishing (all and subcategories) days/trips of participation and total hunting (all and subcategories) days/trips of participation: product-type statistics derived using total number of fishing (all and subcategories) participants, total number of hunting (all and subcategories) participants, and days/trips per participant (not displayed).
- Percent participation (columns denoted by %): statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the fishing or hunting survey for the fishing and hunting sections, respectively.

Table 15

Fishing and hunting, demographics

- Total population (all and subcategories): composite statistics constructed using 2-way composite factors to adjusted 50-State Survey of FHWAR final weights, using data from both the fishing and the hunting surveys.
- Total number of anglers and total number of hunters: product-type statistics derived using model predictions for percent participation in the population (columns denoted by % Pop.), and total population based on adjusted 50-State Survey of FHWAR final weights.
- Total number of sportspersons: ratio-type statistics derived using total number of anglers and percent anglers in sportspersons (not displayed).
- Total population, sportspersons, anglers, hunters, by demographics: product-type statistics, derived using total population, sportspersons, anglers, hunters participation, and percent demographic-specific participation in total participation (columns denoted by %).
- Percent demographic-specific population, sportspersons, anglers, hunters participation in total participation (columns denoted by %): composite statistics constructed using 2-way composite factors to adjusted 50-State Survey of FHWAR final weights, using data from the fishing and hunting surveys.
- Percent demographic-specific anglers and hunters participation in the total demographic-specific population (columns denoted by % Pop.): ratio-type statistics, derived using total demographic-specific anglers and hunters participation and total demographic-specific population.

- Percent total and demographic-specific sportspersons participation in the total and demographic-specific population (column denoted by % Pop.): ratio-type statistics, derived using total population and sportspersons participation.

Table 22

Fishing and hunting, spenders and expenses

- Total fishing and hunting expenditure (all and subcategories) amount, total fishing expenditure (all and subcategories) amount, total hunting expenditure (all and subcategories) amount, and total unspecified expenditure amount: product-type statistics derived using expenditure amount per participant (columns denoted by Average Per Sportsperson), and total sportspersons participation (all and subcategories), total anglers participation (all and subcategories), total hunters participation (all and subcategories) and total sportspersons participation, respectively.
- Expenditure amount per participant (columns denoted by Average Per Sportsperson) and expenditure amount per spender (columns denoted by Average Per Spender):
 - > Fishing section: statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the fishing survey only.
 - > Hunting section: statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the hunting survey only.
 - > Fishing and hunting, and unspecified sections: except for some expenses and spenders noted in the table footnotes, these are composite statistics constructed using 2-way composite factors to adjusted 50-State Survey of FHWAR final weights, using data from the fishing and hunting surveys.
- Total fishing and hunting (all and subcategories) number of spenders, total fishing (all and subcategories) number of spenders, total hunting (all and subcategories) number of spenders, and total unspecified number of spenders: product-type statistics derived using the percent spenders in total participation (not displayed), and total sportspersons participation (all and subcategories),

total anglers participation (all and subcategories), total hunters participation (all and subcategories) and total sportspersons participation, respectively.

Table 28

Wildlife watching, participation, days, and trips

- Total wildlife watching participation: product-type statistics derived using model predictions for percent participation in the population, and total population based on adjusted 50-State Survey of FHWAR final weights.
- Total away from home (all and subcategories) and around the home (all and subcategories) wildlife watching participation: product-type statistics derived using total wildlife watching participation, and percent participation of away from home (all and subcategories) and around the home (all and subcategories) wildlife watching in all wildlife watching (columns denoted by %).
- Total wildlife watching (all and subcategories) days/trips of participation: product-type statistics derived using total number of wildlife watching (all and subcategories) participants and days/trips per participant (not displayed).
- Percent participation (columns denoted by %): statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the wildlife watching survey.
- Percent participation in the total population (column denoted by % Pop.): ratio-type statistics, derived using total population from Table 30 and wildlife watching participation.

Table 30

Wildlife watching, demographics

- Total population (all and subcategories): composite statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the wildlife watching survey. Note that the total population estimates in Tables 15 and 30 differ due to demographic harmonization without state targets estimated from the National Survey of FHWAR (information not available); see Rockville Institute (2020) for more details about the demographic harmonization.

- Total number of wildlife watchers: product-type statistics derived using model predictions for percent participation in the population (columns denoted by % Pop.) and total population based on adjusted 50-State Survey of FHWAR weights.
- Total number of away from home or around the home wildlife watchers: product-type statistics derived using total number of wildlife watchers, and percent away from home or around the home wildlife watchers in all wildlife watchers (columns denoted by % Pop. in Table 35; not displayed).
- Total population, wildlife watchers, away from home, around the home, by demographics: product-type statistics, derived using total population, wildlife watchers, away from home, around the home participation, and percent demographic-specific participation in total participation (columns denoted by %).
- Percent demographic-specific population, wildlife watchers, away from home, around the home participation in total participation (columns denoted by %): composite statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the wildlife watching survey.
- Percent demographic-specific wildlife watchers, participation in the total demographic-specific population (column denoted by % Pop.): ratio-type statistics, derived using total demographic-specific wildlife watchers participation and total demographic-specific population.
- Percent total and demographic-specific away from home and around the home participation in the total and demographic-specific population (columns denoted by % Pop.): ratio-type statistics, derived using total population and away from home and around the home participation, respectively.

Table 33

Wildlife watching, spenders and expenditures — three versions for all wildlife watchers, away from home wildlife watchers, and around the home wildlife watchers

- Total wildlife watching expenditure (all and subcategories) amount: product-type statistics derived using total number of wildlife watching (all and subcategories)

participants and expenditure amount per participant (columns denoted by Average Per Wildlife Watcher).

- Expenditure amount per participant (columns denoted by Average Per Wildlife Watcher) and expenditure amount per spender (columns denoted by Average Per Spender): statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the wildlife watching survey only.
- Total wildlife watching (all and subcategories) number of spenders: product-type statistics derived using total number of wildlife watching (all and subcategories) participants and the percent spenders in total participation (columns denoted by Percent of Wildlife Watchers).
- Percent spenders in total participation (columns denoted by Percent of Wildlife Watchers): statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the wildlife watching survey only.

Table 35

Wildlife watchers participating in fishing and hunting

- Total number of wildlife watchers: product-type statistics derived using model predictions for percent participation in the population (columns denoted by % Pop. in Table 30), and total population based on adjusted 50-State Survey of FHWAR final weights (displayed in Table 30).
- Total number of away from home or around the home wildlife watchers: product-type statistics derived using total number of wildlife watchers, and percent away from home or around the home wildlife watchers in all wildlife watchers (columns not displayed).
- Total number of wildlife watchers, away from home, around the home who did not fish or hunt, fished or hunted, fished, hunted: product-type statistics, derived using total number of wildlife watchers, and percent sportsperson-specific category in the corresponding total participation (columns denoted by %).
- Percent sportsperson-specific category in the corresponding total participation (columns denoted by %): statistics constructed using full adjusted 50-State Survey of FHWAR final weights, using data from the wildlife watching survey.

Table 36

Sportspersons participating in wildlife watching

- Total number of sportspersons: ratio-type statistics derived using total number of anglers, percent anglers in sportspersons (not displayed).
- Total number of anglers or total number of hunters: product-type statistics derived using model predictions for percent participation in the population (columns denoted by % Pop. in Table 15), and total population based on adjusted 50-State Survey of FHWAR final weights (displayed in Table 15).
- Total number of sportspersons, anglers, or hunters who did not wildlife watch, wildlife watch, wildlife watch away from home, wildlife watch around the home: product-type statistics, derived using total number of sportspersons, anglers, or hunters, and percent wildlife watcher-specific category in the corresponding total participation (columns denoted by %).
- Percent wildlife watcher-specific category in the corresponding total participation (columns denoted by %): composite statistics constructed using 3-way composite factors to adjusted 50-State Survey of FHWAR final weights, using data from the fishing, hunting, and wildlife watching surveys.

Table 5 Pennsylvania Resident Anglers and Hunters, Days of Participation and Trips in the United States,
by Type of Fishing and Hunting: 2016
(Population 16 years and older. Numbers in thousands)

	PARTICIPANTS		DAYS OF PARTICIPATION		TRIPS	
	#	%	#	%	#	%
ALL FISHING	1,193	100	29,149	100	20,350	100
All freshwater	1,078	90	27,167	93	18,678	92
Freshwater, except Great Lakes	1,065	89	24,663	85	17,403	86
Great Lakes	222	19	2,503	9	1,276	6
Saltwater	270	23	1,982	7	1,671	8
ALL HUNTING	559	100	10,805	100	7,005	100
Big game	516	92	9,202	85	4,449	64
Small game	271	48	1,988	18	1,495	21
Migratory birds	52	9	303	3	239	3
Other animals	127	23	1,318	12	822	12

NOTE: Detail does not add to total because of multiple responses.

Table 15 Pennsylvania Resident Anglers and Hunters, by Selected Characteristics: 2016
(State population 16 years and older. Numbers in thousands)

	POPULATION		SPORTSPERSONS			ANGLERS			HUNTERS		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
TOTAL	9,773	100	1,568	16	100	1,193	12	100	559	6	100
RESIDENCE DENSITY											
Urban	6,996	72	894	13	57	710	10	59	281	4	50
Rural	2,777	28	674	24	43	484	17	41	278	10	50
RESIDENCE SIZE											
Metropolitan Statistical Area (MSA)	9,202	94	1,383	15	88	1,043	11	87	484	5	86
1,000,000 or more	4,938	51	548	11	35	475	10	40	177	4	32
250,000 to 999,999	2,779	28	493	18	31	355	13	30	171	6	31
50,000 to 249,999	1,485	15	341	23	22	212	14	18	135	9	24
Outside MSA	571	6	185	32	12	151	26	13	75	13	14
SEX											
Male	4,481	46	957	21	61	692	15	58	398	9	71
Female	5,292	54	611	12	39	501	9	42	161	3	29
AGE											
16 to 17 years	397	4	53	13	3	24	6	2	23	6	4
18 to 24 years	1,043	11	140	13	9	144	14	12	32	3	6
25 to 34 years	1,420	15	223	16	14	179	13	15	79	6	14
35 to 44 years	1,437	15	274	19	17	213	15	18	107	7	19
45 to 54 years	1,686	17	429	25	27	282	17	24	168	10	30
55 to 64 years	1,689	17	220	13	14	151	9	13	80	5	14
65 years and older	2,101	21	230	11	15	201	10	17	70	3	13
65 to 74 years	1,164	12	155	13	10	135	12	11	56	5	10
75 and older	937	10	75	8	5	66	7	6	14	1	2
ETHNICITY											
Hispanic	687	7	31	5	2	30	4	3	2	0	0
Non-Hispanic	9,087	93	1,537	17	98	1,163	13	97	557	6	100
RACE											
White	8,775	90	1,495	17	95	1,158	13	97	533	6	95
African American	335	3	45	14	3	15	4	1	21	6	4
All Others	663	7	28	4	2	21	3	2	5	1	1

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Table 15 Pennsylvania Resident Anglers and Hunters, by Selected Characteristics: 2016 (continued)
(State population 16 years and older. Numbers in thousands)

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	POPULATION		SPORTSPERSONS			ANGLERS			HUNTERS		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
ANNUAL HOUSEHOLD INCOME											
Less than \$20,000	891	9	94	11	6	65	7	5	25	3	4
\$20,000 to \$29,999	559	6	64	11	4	53	9	4	31	6	6
\$30,000 to \$39,999	895	9	139	16	9	103	12	9	45	5	8
\$40,000 to \$49,999	470	5	86	18	6	61	13	5	40	9	7
\$50,000 to \$74,999	984	10	206	21	13	149	15	12	93	10	17
\$75,000 to \$99,999	1,267	13	294	23	19	245	19	21	104	8	19
\$100,000 to \$149,999	1,242	13	218	18	14	172	14	14	98	8	18
\$150,000 or more	705	7	159	23	10	128	18	11	49	7	9
Not reported	2,761	28	309	11	20	217	8	18	73	3	13
EDUCATION											
8 years or less	200	2	22	11	1	1	1	0	14	7	3
9 to 12 years	3,735	38	725	19	46	545	15	46	221	6	40
1 to 3 years of college	2,049	21	310	15	20	204	10	17	124	6	22
4 years or more of college	3,790	39	511	13	33	444	12	37	200	5	36

NOTE: Detail does not add to total because of multiple responses. Percent population (% Pop.) columns show the percentage of each row's population who participated in the activity named by the column (the percentage of the population living in urban areas who fished, etc.). Columns labeled "%" under Sportspersons, Anglers, and Hunters show the percentage of each column's participants who are described by the row heading (the percentage of anglers who lived in urban areas, etc.).

Table 22 Expenditures by Pennsylvania Residents for Fishing and Hunting Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of \$)	AVERAGE PER SPORTSPERSON (\$) ¹	AVERAGE PER SPENDER (\$) ¹	NUMBER OF SPENDERS (thousands)
FISHING AND HUNTING	3,965,160	2,529	2,510	1,580
Food and lodging	723,611	461	615	1,176
Transportation	479,748	306	432	1,111
Other trip costs ²	364,185	232	386	945
Equipment (fishing, hunting)	898,988	573	699	1,286
Auxiliary equipment ³	334,408	213	424	789
Special equipment ⁴	643,184	410	7,427	87
Magazines, books, and DVDs	23,687	15	87	272
Membership dues/contributions	17,859	11	102	175
Other ⁵	479,489	306	387	1,239
FISHING	1,871,763	1,568	1,607	1,164
Food and lodging	522,891	438	551	950
Transportation	264,253	221	293	900
Other trip costs ²	277,844	233	298	934
Fishing equipment	379,518	318	380	998
Auxiliary equipment ³	180,266	151	338	534
Special equipment ⁴	29,692	25	1,645	18
Magazines, books, and DVDs	16,009	13	75	213
Membership dues/contributions	9,314	8	88	106
Other ⁵	191,976	161	245	782
HUNTING	1,122,813	2,008	2,008	559
Food and lodging	141,245	253	361	392
Transportation	147,258	263	393	374
Other trip costs ²	61,351	110	385	159
Hunting equipment	352,091	630	820	429
Auxiliary equipment ³	88,515	158	341	260
Special equipment ⁴	128,401	230	3,950	33
Magazines, books, and DVDs	4,081	7	56	73
Membership dues/contributions	3,901	7	76	51
Other ⁵	195,972	351	358	548
UNSPECIFIED⁶	454,325	290	3,375	135

1 Average expenditures are annual estimates.

2 Includes boating costs, equipment rental, guide fees, access fees, heating and cooking fuel, and ice and bait (for fishing only).

3 Includes sleeping bags, packs, duffel bags, tents, binoculars and field glasses, special fishing and hunting clothing, foul weather gear, boots and waders, maintenance and repair of equipment, processing and taxidermy costs, and electronic equipment such as a GPS device.

4 Includes big-ticket items bought primarily for hunting and fishing, including boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

5 Includes land leasing and ownership, licenses, stamps, tags, permits, and plantings (for hunting only).

6 Respondent could not specify whether expenditure was primarily for either fishing or hunting.

NOTE: Individual estimates do not add to total because of multiple responses, nonresponse, the independent bridging of fishing and hunting participation, and the bridging of sportspersons participation relative to fishing participation.

Table 28 Pennsylvania Resident Wildlife Watchers Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	PARTICIPANTS			DAYS OF PARTICIPATION		TRIPS	
	#	%	% Pop.	#	%	#	%
WILDLIFE WATCHERS	3,365	100	35	299,870	100	28,306	100
Away from home	1,350	40	14	48,335	16	28,305	100
Observe wildlife	1,292	38	13	22,150	7	x	x
Photograph wildlife	730	22	8	5,178	2	x	x
Feed wildlife	608	18	6	27,638	9	x	x
Around the home	3,360	100	35	251,532	84	x	x
Observe wildlife	2,620	78	27	212,641	71	x	x
Photograph wildlife	1,755	52	18	23,817	8	x	x
Feed wildlife	2,610	78	27	x	x	x	x
Visit parks or natural areas ¹	1,084	32	11	15,075	5	x	x
Maintain plantings or natural areas	621	18	6	x	x	x	x

x Not applicable

¹ Includes visits only to parks or natural areas within one mile of home.

NOTE: Detail does not add to total because of multiple responses. Percent population (% Pop.) columns show the percentage of each row's population who participated in the activity named by the column (the percentage of the population who observed wildlife away from home, etc.). Columns labeled "%" show the percentage of each column's participants who are described by the row heading (the percentage of wildlife watchers who observed wildlife away from home, etc.).

Table 30 Pennsylvania Resident Wildlife Watchers, by Selected Characteristics: 2016
(State population 16 years and older. Numbers in thousands)

	POPULATION		TOTAL			AWAY FROM HOME			AROUND THE HOME		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
TOTAL	9,681	100	3,365	35	100	1,350	14	100	3,360	35	100
RESIDENCE DENSITY											
Urban	7,244	75	2,487	34	74	1,027	14	76	2,487	34	74
Rural	2,436	25	878	36	26	323	13	24	872	36	26
RESIDENCE SIZE											
Metropolitan Statistical Area (MSA)	9,120	94	3,087	34	92	1,204	13	89	3,081	34	92
1,000,000 or more	3,898	40	1,343	34	40	560	14	41	1,343	34	40
250,000 to 999,999	3,682	38	1,288	35	38	534	14	40	1,283	35	38
50,000 to 249,999	1,539	16	456	30	14	111	7	8	455	30	14
Outside MSA	561	6	278	50	8	145	26	11	278	50	8
SEX											
Male	4,583	47	1,688	37	50	747	16	55	1,687	37	50
Female	5,098	53	1,677	33	50	603	12	45	1,673	33	50
AGE											
16 to 17 years	189	2	99	52	3	70	37	5	99	52	3
18 to 24 years	689	7	188	27	6	67	10	5	188	27	6
25 to 34 years	2,163	22	422	19	13	158	7	12	422	19	13
35 to 44 years	1,388	14	566	41	17	274	20	20	566	41	17
45 to 54 years	1,455	15	634	44	19	333	23	25	634	44	19
55 to 64 years	1,481	15	584	39	17	223	15	17	580	39	17
65 years and older	2,317	24	873	38	26	225	10	17	872	38	26
65 to 74 years	1,539	16	560	36	17	151	10	11	558	36	17
75 and older	778	8	314	40	9	74	10	5	314	40	9
ETHNICITY											
Hispanic	670	7	203	30	6	187	28	14	203	30	6
Non-Hispanic	9,011	93	3,162	35	94	1,162	13	86	3,156	35	94
RACE											
White	8,653	89	2,994	35	89	1,079	12	80	2,989	35	89
African American	392	4	86	22	3	20	5	1	86	22	3
All Others	636	7	285	45	8	251	39	19	285	45	8

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Table 30 Pennsylvania Resident Wildlife Watchers, by Selected Characteristics: 2016 (continued)
(State population 16 years and older. Numbers in thousands)

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	POPULATION		TOTAL			AWAY FROM HOME			AROUND THE HOME		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
ANNUAL HOUSEHOLD INCOME											
Less than \$20,000	500	5	206	41	6	69	14	5	206	41	6
\$20,000 to \$29,999	396	4	142	36	4	33	8	2	142	36	4
\$30,000 to \$39,999	599	6	256	43	8	88	15	7	256	43	8
\$40,000 to \$49,999	660	7	242	37	7	99	15	7	242	37	7
\$50,000 to \$74,999	1,447	15	519	36	15	318	22	24	519	36	15
\$75,000 to \$99,999	1,782	18	576	32	17	226	13	17	575	32	17
\$100,000 to \$149,999	1,163	12	432	37	13	213	18	16	428	37	13
\$150,000 or more	701	7	213	30	6	72	10	5	213	30	6
Not reported	2,432	25	779	32	23	233	10	17	779	32	23
EDUCATION											
8 years or less	746	8	181	24	5	76	10	6	181	24	5
9 to 12 years	3,172	33	1,120	35	33	320	10	24	1,119	35	33
1 to 3 years of college	2,237	23	787	35	23	426	19	32	787	35	23
4 years or more of college	3,525	36	1,277	36	38	527	15	39	1,273	36	38

NOTE: Detail does not add to total because of multiple responses and nonresponse. Percent population (% Pop.) columns show the percentage of each row's population who participated in the activity named by the column (the percentage of the population living in urban areas who participated, etc.). Columns labeled "% under TOTAL, Away From Home, and Around the Home show the percentage of each column's participants who are described by the row heading (the percentage of those who lived in urban areas, etc.).

Table 33A Expenditures by Pennsylvania Residents for All Wildlife Watching Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of \$)	AVERAGE PER WILDLIFE WATCHER (\$) ¹	AVERAGE PER SPENDER (\$) ¹	NUMBER OF SPENDERS (thousands)	PERCENT OF WILDLIFE WATCHERS
ALL EXPENDITURES	3,476,478	1,033	1,326	2,621	78
TRIP-RELATED EXPENDITURES	1,313,621	390	1,084	1,212	36
Food and lodging	715,238	213	695	1,029	31
Food	364,124	108	357	1,019	30
Lodging	351,114	104	910	386	11
Transportation	404,444	120	383	1,057	31
Other trip costs ²	193,942	58	347	559	17
EQUIPMENT AND OTHER EXPENDITURES	2,162,853	643	882	2,454	73
Wildlife-watching equipment	850,872	253	365	2,333	69
Binoculars, spotting scopes	58,278	17	149	392	12
Film and photo processing	14,050	4	67	210	6
Cameras, special lenses, video cameras, and other photographic equipment, including memory cards	142,755	42	296	483	14
Day packs, carrying cases, and special clothing	131,417	39	202	650	19
Bird food	324,204	96	175	1,850	55
Food for other wildlife	84,480	25	134	629	19
Nest boxes, bird houses, bird feeders, and bird baths	91,877	27	88	1,043	31
Other equipment (including field guides)	3,806	1	29	130	4
Auxiliary equipment ³	138,575	41	249	557	17
Special equipment ⁴	763,440	227	3,639	210	6
Magazines, books, and DVDs	27,838	8	89	314	9
Membership dues and contributions	36,760	11	66	561	17
Land leasing and ownership	295,892	88	1,827	162	5
Plantings	49,474	15	140	354	11

¹ Average expenditures are annual estimates.

² Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

³ Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

⁴ Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 33B

Expenditures by Pennsylvania Residents for Away-from-home Wildlife Watching Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of \$)	AVERAGE PER WILDLIFE WATCHER (\$) ¹	AVERAGE PER SPENDER (\$) ¹	NUMBER OF SPENDERS (thousands)	PERCENT OF WILDLIFE WATCHERS
ALL EXPENDITURES	1,567,926	1,162	1,307	1,199	89
TRIP-RELATED EXPENDITURES	1,456,505	1,079	1,241	1,174	87
Food and lodging	948,863	703	839	1,131	84
Food	406,230	301	365	1,113	82
Lodging	542,634	402	1,058	513	38
Transportation	386,090	286	405	953	71
Other trip costs ²	121,551	90	157	774	57
EQUIPMENT AND OTHER EXPENDITURES	111,420	83	305	366	27
Wildlife-watching equipment	47,591	35	266	179	13
Binoculars, spotting scopes	—	—	—	—	—
Film and photo processing	—	—	—	—	—
Cameras, special lenses, video cameras, and other photographic equipment, including memory cards	2,539	2	150	17	1
Day packs, carrying cases, and special clothing	17,209	13	176	98	7
Bird food	8,962	7	116	78	6
Food for other wildlife	9,856	7	264	37	3
Nest boxes, bird houses, bird feeders, and bird baths	9,025	7	208	43	3
Other equipment (including field guides)	—	—	—	—	—
Auxiliary equipment ³	27,217	20	213	128	9
Special equipment ⁴	—	—	—	—	—
Magazines, books, and DVDs	14,546	11	99	147	11
Membership dues and contributions	2,975	2	83	36	3
Land leasing and ownership	19,089	14	250	76	6
Plantings	—	—	—	—	—

— No sample data

¹ Average expenditures are annual estimates.

² Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

³ Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

⁴ Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 33C

Expenditures by Pennsylvania Residents for Around-the-home Wildlife Watching Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of \$)	AVERAGE PER WILDLIFE WATCHER (\$) ¹	AVERAGE PER SPENDER (\$) ¹	NUMBER OF SPENDERS (thousands)	PERCENT OF WILDLIFE WATCHERS
ALL EXPENDITURES	1,189,037	354	542	2,194	65
TRIP-RELATED EXPENDITURES	x	x	x	x	x
Food and lodging	x	x	x	x	x
Food	x	x	x	x	x
Lodging	x	x	x	x	x
Transportation	x	x	x	x	x
Other trip costs ²	x	x	x	x	x
EQUIPMENT AND OTHER EXPENDITURES	1,189,037	354	542	2,194	65
Wildlife-watching equipment	490,327	146	234	2,094	62
Binoculars, spotting scopes	22,510	7	151	149	4
Film and photo processing	5,181	2	52	99	3
Cameras, special lenses, video cameras, and other photographic equipment, including memory cards	83,396	25	365	228	7
Day packs, carrying cases, and special clothing	73,589	22	175	421	13
Bird food	205,238	61	132	1,560	46
Food for other wildlife	48,186	14	99	488	15
Nest boxes, bird houses, bird feeders, and bird baths	50,628	15	66	763	23
Other equipment (including field guides)	1,596	0	23	68	2
Auxiliary equipment ³	39,178	12	215	182	5
Special equipment ⁴	570,622	170	4,679	122	4
Magazines, books, and DVDs	8,295	2	50	164	5
Membership dues and contributions	23,307	7	69	336	10
Land leasing and ownership	47,090	14	1,631	29	1
Plantings	10,214	3	57	178	5

— No sample data x Not applicable

¹ Average expenditures are annual estimates.

² Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

³ Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

⁴ Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 35 Pennsylvania Resident Wildlife Watchers Participating in Fishing or Hunting: 2016
(State population 16 years and older. Numbers in thousands)

	TOTAL		AWAY FROM HOME		AROUND THE HOME	
	#	%	#	%	#	%
ALL WILDLIFE WATCHERS	3,365	100	1,350	100	3,360	100
Did not fish or hunt	2,023	60	587	44	2,018	60
Fished or hunted	1,342	40	763	56	1,342	40
Fished	1,127	33	673	50	1,127	34
Hunted	533	16	305	23	533	16

NOTE: Detail does not add to total because of multiple responses and nonresponse.

Table 36 Pennsylvania Resident Sportspersons Participating in Wildlife Watching: 2016
(State population 16 years and older. Numbers in thousands)

	SPORTSPERSONS		ANGLERS		HUNTERS	
	#	%	#	%	#	%
ALL SPORTSPERSONS	1,568	100	1,193	100	559	100
Did not watch wildlife	450	29	294	25	175	31
Watched wildlife	1,118	71	900	75	384	69
Away from home	608	39	511	43	216	39
Around the home	1,094	70	878	74	375	67

NOTE: Detail does not add to total because of multiple responses and nonresponse.

APPENDIX B: STANDARD ERRORS

The tables in Appendix B depict the standard errors, subject to rounding error, corresponding to the calibrated point estimates reported in the tables in Appendix A. Summary statistics reported in these calibrated tables are described below, by table.

Table 5

Fishing and hunting, participation, days, and trips

- Standard errors of total fishing participation and total hunting participation: product-type statistics derived using model point estimates and standard errors of percent participation in the population and survey point estimates and standard errors of total population based on adjusted 50-State Survey of FHWAR weights.
- Standard errors of total freshwater, freshwater except Great Lakes, Great Lakes, and saltwater fishing participation, total big game, small game, migratory birds, and other animals hunting participation: product-type statistics derived using point estimates and standard errors of total fishing participation, point estimates and standard errors of total hunting participation, point estimates and standard errors of percent participation of freshwater, freshwater except Great Lakes, Great Lakes, and saltwater fishing in all fishing, and point estimates and standard errors of percent participation of big game, small game, migratory birds, and other animals hunting in all hunting (columns denoted by %).
- Standard errors of total fishing (all and subcategories) days/trips of participation and total hunting (all and subcategories) days/trips of participation: product-type statistics derived using point estimates and standard errors of total number of fishing (all and subcategories) participants, point estimates and standard errors of total number of hunting (all and subcategories) participants, and point estimates and standard errors of days/trips per participant (not displayed).

- Standard errors of percent participation (columns denoted by %): statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the fishing or hunting survey for the fishing and hunting sections, respectively.

Table 15

Fishing and hunting, demographics

- Standard errors of total population (all and subcategories): composite statistics constructed using 2-way composite factors to adjusted 50-State Survey of FHWAR final and replicate weights, using data from both the fishing and the hunting surveys.
- Standard errors of total number of anglers and total number of hunters: product-type statistics derived using model point estimates and standard errors for percent participation in the population (columns denoted by % Pop.) and survey point estimates and standard errors of total population based on adjusted 50-State Survey of FHWAR final and replicate weights.
- Standard errors of total number of sportspersons: ratio-type statistics derived using point estimates and standard errors of total number of anglers and point estimates and standard errors of percent anglers in sportspersons (not displayed).
- Standard errors of total population, sportspersons, anglers, hunters, by demographics: product-type statistics, derived using point estimates and standard errors of total population, sportspersons, anglers, hunters participation, and point estimates and standard errors of percent demographic-specific participation in total participation (columns denoted by %).

- Standard errors of percent demographic-specific population, sportspersons, anglers, hunters participation in total participation (columns denoted by %): composite statistics constructed using 2-way composite factors to adjusted 50-State Survey of FHWAR final and replicate weights, using data from the fishing and hunting surveys.
- Standard errors of percent demographic-specific anglers and hunters participation in the total demographic-specific population (columns denoted by % Pop.): ratio-type statistics, derived using point estimates and standard errors of total demographic-specific anglers and hunters participation and total demographic-specific population.
- Standard errors of percent total and demographic-specific sportspersons participation in the total and demographic-specific population (column denoted by % Pop.): ratio-type statistics, derived using point estimates and standard errors of total population and sportspersons participation.

Table 22

Fishing and hunting, spenders and expenses

- Standard errors of total fishing and hunting expenditure (all and subcategories) amount, total fishing expenditure (all and subcategories) amount, total hunting expenditure (all and subcategories) amount, and total unspecified expenditure amount: product-type statistics derived using point estimates and standard errors of expenditure amount per participant (columns denoted by Average Per Sportsperson), and point estimates and standard errors of total sportspersons participation (all and subcategories), point estimates and standard errors of total anglers participation (all and subcategories), point estimates and standard errors of total hunters participation (all and subcategories) and point estimates and standard errors of total sportspersons participation, respectively.
- Standard errors of expenditure amount per participant (columns denoted by Average Per Sportsperson) and expenditure amount per spender (columns denoted by Average Per Spender):
 - > Fishing section: statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the fishing survey only.

- > Hunting section: statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the hunting survey only.
- > Fishing and hunting, and unspecified sections: except for some expenses and spenders noted in the table footnotes, these are composite statistics constructed using 2-way composite factors to adjusted 50-State Survey of FHWAR final and replicate weights, using data from the fishing and hunting surveys.
- Standard errors of total fishing and hunting (all and subcategories) number of spenders, total fishing (all and subcategories) number of spenders, total hunting (all and subcategories) number of spenders, and total unspecified number of spenders: product-type statistics derived using the point estimates and standard errors of percent spenders in total participation (not displayed), and point estimates and standard errors of total sportspersons participation (all and subcategories), point estimates and standard errors of total anglers participation (all and subcategories), point estimates and standard errors of total hunters participation (all and subcategories) and point estimates and standard errors of total sportspersons participation, respectively.

Table 28

Wildlife watching, participation, days, and trips

- Standard errors of total wildlife watching participation: product-type statistics derived using model point estimates and standard errors of percent participation in the population, and survey point estimates and standard errors of total population based on adjusted 50-State Survey of FHWAR final and replicate weights.
- Standard errors of total away from home (all and subcategories) and around the home (all and subcategories) wildlife watching participation: product-type statistics derived using point estimates and standard errors of total wildlife watching participation, point estimates and standard errors of percent participation of away from home (all and subcategories) and point estimates and standard errors of around the home (all and subcategories) wildlife watching in all wildlife watching (columns denoted by %).

- Standard errors of total wildlife watching (all and sub-categories) days/trips of participation: product-type statistics derived using point estimates and standard errors of total number of wildlife watching (all and subcategories) participants and point estimates and standard errors of days/trips per participant (not displayed).
- Standard errors of percent participation (columns denoted by %): statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the wildlife watching survey.
- Standard errors of percent participation in the total population (column denoted by % Pop.): ratio-type statistics, derived using point estimates and standard errors of total population from Table 30 and point estimates and standard errors of wildlife watching participation.

Table 30

Wildlife watching, demographics

- Standard errors of total population (all and subcategories): composite statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the wildlife watching survey. Note that the standard errors of total population estimates in Tables 15 and 30 differ due to demographic harmonization without state targets estimated from the National Survey of FHWAR (information not available); see Rockville Institute (2020) for more details about the demographic harmonization.
- Standard errors of total number of wildlife watchers: product-type statistics derived using model point estimates and standard errors of percent participation in the population (columns denoted by % Pop.) and survey standard error of total population based on adjusted 50-State Survey of FHWAR final and replicate weights.
- Standard errors of total number of away from home or around the home wildlife watchers: product-type statistics derived using point estimates and standard errors of total number of wildlife watchers and point estimates and standard errors of percent away from home or around the home wildlife watchers in all wildlife watchers (columns denoted by % Pop. in Table 35).

- Standard errors of total population, wildlife watchers, away from home, around the home, by demographics: product-type statistics, derived using point estimates and standard errors of total population, wildlife watchers, away from home, around the home participation and point estimates and standard errors of percent demographic-specific participation in total participation (columns denoted by %).
- Standard errors of percent demographic-specific population, wildlife watchers, away from home, around the home participation in total participation (columns denoted by %): composite statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the wildlife watching survey.
- Standard errors of percent demographic-specific wildlife watchers in the total demographic-specific population (column denoted by % Pop.): ratio-type statistics, derived using point estimates and standard errors of total demographic-specific wildlife watchers participation and point estimates and standard errors of total demographic-specific population.
- Standard errors of percent total and demographic-specific away from home and around the home participation in the total and demographic-specific population (columns denoted by % Pop.): ratio-type statistics, derived using point estimates and standard errors of total population and away from home and around the home participation, respectively.

Table 33

Wildlife watching, spenders and expenditures — three versions for all wildlife watchers, away from home wildlife watchers, and around the home wildlife watchers

- Standard errors of total wildlife watching expenditure (all and subcategories) amount: product-type statistics derived using point estimates and standard errors of total number of wildlife watching (all and subcategories) participants and point estimates and standard errors of expenditure amount per participant (columns denoted by Average Per Wildlife Watcher).

- Standard errors or expenditure amount per participant (columns denoted by Average Per Wildlife Watcher) and expenditure amount per spender (columns denoted by Average Per Spender): statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the wildlife watching survey only.
- Standard errors of total wildlife watching (all and subcategories) number of spenders: product-type statistics derived using point estimates and standard errors of total number of wildlife watching (all and subcategories) participants and point estimates and standard errors of the percent spenders in total participation (columns denoted by Percent of Wildlife Watchers).
- Standard errors of percent spenders in total participation (columns denoted by Percent of Wildlife Watchers): statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the wildlife watching survey only.

Table 35

Wildlife watchers participating in fishing and hunting

- Standard errors of total number of wildlife watchers: product-type statistics derived using model point estimates and standard errors of percent participation in the population (columns denoted by % Pop. in Table 30) and survey point estimates and standard errors of total population based on adjusted 50-State Survey of FHWAR final and replicate weights (displayed in Table 30).
- Standard errors of total number of away from home or around the home wildlife watchers: product-type statistics derived using point estimates and standard errors of total number of wildlife watchers and point estimates and standard errors of percent away from home or around the home wildlife watchers in all wildlife watchers (columns not displayed).
- Standard errors of total number of wildlife watchers, away from home, around the home who did not fish

or hunt, fished or hunted, fished, hunted: product-type statistics, derived using point estimates and standard errors of total number of wildlife watchers and point estimates and standard errors of percent sportsperson-specific category in the corresponding total participation (columns denoted by %).

- Standard errors or percent sportsperson-specific category in the corresponding total participation (columns denoted by %): statistics constructed using full adjusted 50-State Survey of FHWAR final and replicate weights, using data from the wildlife watching survey.

Table 36

Sportspersons participating in wildlife watching

- Standard errors of total number of sportspersons: ratio-type statistics derived using point estimates and standard errors of total number of anglers and point estimates and standard errors of percent anglers in sportspersons (not displayed).
- Standard errors of total number of anglers or total number of hunters: product-type statistics derived using model point estimates and standard errors of percent participation in the population (columns denoted by % Pop. in Table 15) and survey point estimates and standard errors of total population based on adjusted 50-State Survey of FHWAR weights (displayed in Table 15).
- Standard errors of total number of sportspersons, anglers, or hunters who did not wildlife watch, wildlife watch, wildlife watch away from home, wildlife watch around the home: product-type statistics, derived using point estimates and standard errors of total number of sportspersons, anglers, or hunters and point estimates and standard errors of percent wildlife watcher-specific category in the corresponding total participation (columns denoted by %).
- Standard errors of percent wildlife watcher-specific category in the corresponding total participation (columns denoted by %): composite statistics constructed using 3-way composite factors to adjusted 50-State Survey of FHWAR final and replicate weights, using data from the fishing, hunting, and wildlife watching surveys.

Table 5 SE Standard Errors of Pennsylvania Resident Anglers and Hunters, Days of Participation and Trips in the United States, by Type of Fishing and Hunting: 2016
(Population 16 years and older. Numbers in thousands)

	PARTICIPANTS		DAYS OF PARTICIPATION		TRIPS	
	#	%	#	%	#	%
ALL FISHING	212.38	0.00	6,724.78	0.00	5,131.74	0.00
All freshwater	194.64	2.79	6,554.89	2.61	4,956.71	3.69
Freshwater, except Great Lakes	192.76	2.96	5,930.53	4.31	4,602.70	4.13
Great Lakes	128.15	10.38	2,643.87	3.70	1,099.38	2.89
Saltwater	83.76	5.85	719.14	2.61	657.06	3.69
ALL HUNTING	120.64	0.00	2,667.83	0.00	2,001.16	0.00
Big game	115.61	5.70	2,369.19	3.72	1,344.83	5.68
Small game	69.15	6.78	601.75	3.99	471.79	4.57
Migratory birds	22.42	3.56	167.24	1.49	151.92	2.10
Other animals	42.69	5.98	558.69	3.54	340.36	2.56

Table 15 SE Standard Errors of Pennsylvania Resident Anglers and Hunters, by Selected Characteristics: 2016
(State population 16 years and older. Numbers in thousands)

	POPULATION		SPORTSPERSONS			ANGLERS			HUNTERS		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
TOTAL	428.45	0.00	290.02	3.05	0.00	212.38	2.11	0.00	120.64	1.21	0.00
RESIDENCE DENSITY											
Urban	445.08	3.18	185.26	2.77	5.43	146.92	2.20	6.39	70.15	1.03	6.48
Rural	328.94	3.18	150.15	6.12	5.43	114.22	4.60	6.39	69.72	2.78	6.48
RESIDENCE SIZE											
Metropolitan Statistical Area (MSA)	423.38	1.30	260.72	2.92	3.30	192.42	2.16	4.34	106.85	1.19	4.20
1,000,000 or more	443.82	3.50	126.49	2.75	4.90	110.22	2.39	6.02	46.85	1.00	4.98
250,000 to 999,999	273.57	2.79	118.37	4.60	4.89	90.58	3.49	5.52	51.30	1.94	6.51
50,000 to 249,999	211.67	2.13	90.85	6.94	4.24	68.34	5.03	4.85	37.89	2.86	4.42
Outside MSA	129.26	1.30	61.34	13.02	3.30	57.58	11.72	4.34	28.13	5.77	4.20
SEX											
Male	286.27	2.44	196.71	4.60	5.56	145.48	3.39	6.59	91.60	2.12	5.83
Female	354.08	2.44	141.74	2.79	5.56	118.05	2.32	6.59	47.11	0.91	5.83
AGE											
16 to 17 years	157.75	1.58	25.47	8.32	1.53	13.97	4.29	1.13	14.32	4.31	2.46
18 to 24 years	195.71	1.95	46.60	5.13	2.51	47.22	5.22	3.38	11.50	1.24	1.69
25 to 34 years	232.15	2.49	64.82	5.24	3.24	56.29	4.47	3.95	27.94	2.17	4.06
35 to 44 years	324.30	3.10	75.16	6.77	3.60	61.95	5.45	4.18	36.18	3.02	5.11
45 to 54 years	221.72	2.26	119.54	7.84	5.81	94.41	6.02	6.81	51.54	3.33	6.70
55 to 64 years	199.89	1.98	56.89	3.70	2.58	43.25	2.77	2.89	25.09	1.59	3.33
65 years and older	241.00	2.26	68.65	3.50	3.50	64.34	3.25	4.55	21.65	1.10	2.84
65 to 74 years	163.97	1.60	40.39	3.95	1.84	36.03	3.50	2.29	18.77	1.75	2.62
75 and older	176.48	1.74	51.64	5.71	3.23	53.20	5.83	4.42	5.51	0.65	0.86
ETHNICITY											
Hispanic	215.13	2.17	20.75	3.34	1.29	21.42	3.41	1.76	1.65	0.25	0.30
Non-Hispanic	442.76	2.17	284.91	3.24	1.29	208.02	2.37	1.76	120.31	1.36	0.30
RACE											
White	473.18	3.52	278.50	3.30	2.15	207.02	2.46	1.71	116.55	1.37	3.38
African American	124.06	1.28	29.43	10.10	1.83	9.17	3.18	0.75	18.71	6.03	3.33
All Others	340.37	3.44	18.70	3.54	1.17	18.18	3.19	1.52	3.81	0.70	0.67

(continued on next page)

Table 15 SE Standard Errors of Pennsylvania Resident Anglers and Hunters, by Selected Characteristics: 2016 (continued)
(State population 16 years and older. Numbers in thousands)

(continued from previous page)

	POPULATION		SPORTSPERSONS			ANGLERS			HUNTERS		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
ANNUAL HOUSEHOLD INCOME											
Less than \$20,000	207.38	2.17	41.55	5.27	2.45	31.62	3.94	2.50	15.47	1.86	2.65
\$20,000 to \$29,999	127.99	1.31	25.27	5.23	1.45	24.26	4.85	1.90	14.13	2.83	2.28
\$30,000 to \$39,999	189.64	1.90	48.15	6.30	2.64	41.08	5.20	3.13	18.04	2.28	2.78
\$40,000 to \$49,999	119.61	1.24	34.02	8.62	1.95	20.40	5.46	1.47	20.32	4.85	3.37
\$50,000 to \$74,999	141.57	1.50	55.34	6.38	2.61	44.56	5.03	3.05	28.99	3.25	3.81
\$75,000 to \$99,999	194.76	2.08	84.42	7.56	4.19	75.03	6.63	5.20	36.72	3.16	5.31
\$100,000 to \$149,999	207.64	2.19	58.67	5.56	2.76	51.37	4.74	3.51	31.71	2.88	4.31
\$150,000 or more	142.95	1.56	55.50	9.10	3.06	48.06	7.75	3.60	25.05	3.82	4.16
Not reported	531.71	4.59	113.14	4.63	6.34	96.14	3.80	7.50	38.29	1.48	6.40
EDUCATION											
8 years or less	79.02	0.81	9.13	6.31	0.53	0.81	0.46	0.07	6.25	4.21	1.00
9 to 12 years	321.96	2.89	155.68	4.49	5.14	121.21	3.48	6.19	58.33	1.64	6.15
1 to 3 years of college	234.57	2.25	78.05	4.19	3.43	53.05	2.83	3.30	37.16	1.94	4.72
4 years or more of college	369.32	3.29	115.90	3.33	4.36	102.23	2.93	5.53	53.99	1.51	5.96

NOTE: Percent population (% Pop.) columns show the percentage of each row's population who participated in the activity named by the column (the percentage of the population living in urban areas who fished, etc.). Columns labeled "% Pop." under Sportspeople, Anglers, and Hunters show the percentage of each column's participants who are described by the row heading (the percentage of anglers who lived in urban areas, etc.).

Table 22 SE Standard Errors of Expenditures by Pennsylvania Residents for Fishing and Hunting Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of \$)	AVERAGE PER SPORTSPERSON (\$) ¹	AVERAGE PER SPENDER (\$) ¹	NUMBER OF SPENDERS (thousands)
FISHING AND HUNTING	915,418.79	355.53	337.20	318.07
Food and lodging	216,690.86	110.59	135.03	250.18
Transportation	133,787.13	64.98	87.07	232.43
Other trip costs ²	108,622.33	55.30	90.99	213.32
Equipment (fishing, hunting)	216,744.76	90.23	104.73	269.47
Auxiliary equipment ³	109,960.80	59.00	88.18	203.16
Special equipment ⁴	254,131.19	145.73	2,562.53	29.03
Magazines, books, and DVDs	10,277.70	6.03	12.69	133.05
Membership dues/contributions	5,065.38	2.49	13.21	48.34
Other ⁵	180,989.76	102.38	125.83	268.59
FISHING	459,249.86	269.21	274.83	207.84
Food and lodging	181,887.44	133.07	162.54	180.45
Transportation	88,569.44	63.91	76.89	197.33
Other trip costs ²	93,608.92	67.68	79.54	203.86
Fishing equipment	94,803.41	56.65	64.80	186.28
Auxiliary equipment ³	86,962.18	68.82	135.12	146.82
Special equipment ⁴	18,488.74	15.09	905.98	9.00
Magazines, books, and DVDs	9,671.21	7.87	7.40	128.51
Membership dues/contributions	3,746.78	2.86	19.43	41.01
Other ⁵	147,795.27	122.44	187.47	162.04
HUNTING	316,471.79	372.94	372.94	120.64
Food and lodging	43,051.52	55.70	72.04	90.80
Transportation	52,349.26	76.21	105.27	87.39
Other trip costs ²	27,787.99	44.75	157.20	54.34
Hunting equipment	99,493.89	117.67	150.95	97.80
Auxiliary equipment ³	31,224.90	45.25	83.04	68.09
Special equipment ⁴	70,910.84	119.57	2,448.64	16.64
Magazines, books, and DVDs	1,430.08	2.06	8.61	24.56
Membership dues/contributions	1,514.23	2.31	14.79	18.52
Other ⁵	69,605.59	101.27	102.97	118.41
UNSPECIFIED ⁶	220,487.00	132.28	1,502.08	36.55

1 Average expenditures are annual estimates.

2 Includes boating costs, equipment rental, guide fees, access fees, heating and cooking fuel, and ice and bait (for fishing only).

3 Includes sleeping bags, packs, duffel bags, tents, binoculars and field glasses, special fishing and hunting clothing, foul weather gear, boots and waders, maintenance and repair of equipment, processing and taxidermy costs, and electronic equipment such as a GPS device.

4 Includes big-ticket items bought primarily for hunting and fishing, including boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

5 Includes land leasing and ownership, licenses, stamps, tags, permits, and plantings (for hunting only).

6 Respondent could not specify whether expenditure was primarily for either fishing or hunting.

Table 28 SE Standard Errors of Pennsylvania Resident Wildlife Watchers Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	PARTICIPANTS			DAYS OF PARTICIPATION		TRIPS	
	#	%	% Pop.	#	%	#	%
WILDLIFE WATCHERS	302.45	0.00	2.61	41,874.13	0.00	12,666.20	0.00
Away from home	205.20	4.94	2.23	16,646.15	4.63	12,810.04	0.00
Observe wildlife	199.02	4.82	2.16	5,101.42	1.35	x	x
Photograph wildlife	145.83	3.89	1.55	1,365.84	0.46	x	x
Feed wildlife	165.72	4.67	1.74	16,895.91	4.70	x	x
Around the home	301.98	0.14	3.56	35,713.14	4.63	x	x
Observe wildlife	260.34	3.31	3.00	33,077.55	4.81	x	x
Photograph wildlife	224.45	4.76	2.49	5,236.02	1.40	x	x
Feed wildlife	272.02	4.11	3.11	x	x	x	x
Visit parks or natural areas ¹	195.84	5.07	2.10	4,155.07	1.12	x	x
Maintain plantings or natural areas	127.05	3.40	1.35	x	x	x	x

x Not applicable

¹ Includes visits only to parks or natural areas within one mile of home.

NOTE: Percent population (% Pop.) columns show the percentage of each row's population who participated in the activity named by the column (the percentage of the population who observed wildlife away from home, etc.). Columns labeled "%" show the percentage of each column's participants who are described by the row heading (the percentage of wildlife watchers who observed wildlife away from home, etc.).

Table 30 SE Standard Errors of Pennsylvania Resident Wildlife Watchers, by Selected Characteristics: 2016
(State population 16 years and older. Numbers in thousands)

	POPULATION		TOTAL			AWAY FROM HOME			AROUND THE HOME		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
TOTAL	478.78	0.00	302.45	2.61	0.00	205.20	2.23	0.00	301.98	3.56	0.00
RESIDENCE DENSITY											
Urban	524.58	5.11	268.92	4.47	4.46	182.77	2.72	7.12	268.77	4.47	4.46
Rural	536.38	5.11	169.03	10.54	4.46	106.94	5.27	7.12	168.52	10.49	4.46
RESIDENCE SIZE											
Metropolitan Statistical Area (MSA)	477.89	1.68	288.44	3.63	2.35	197.38	2.27	5.52	287.98	3.62	2.36
1,000,000 or more	492.57	4.91	191.71	6.57	4.44	130.36	3.80	7.40	191.53	6.57	4.44
250,000 to 999,999	486.98	5.08	199.19	7.12	4.84	139.47	4.24	8.50	198.57	7.09	4.83
50,000 to 249,999	494.74	4.87	102.62	11.63	2.81	55.57	4.29	3.97	102.24	11.59	2.80
Outside MSA	164.76	1.68	82.77	20.74	2.35	76.91	15.68	5.52	82.74	20.73	2.36
SEX											
Male	381.49	3.65	206.15	5.44	4.16	149.21	3.53	7.26	205.75	5.44	4.16
Female	470.29	3.65	205.38	5.04	4.16	133.33	2.83	7.26	204.80	5.03	4.16
AGE											
16 to 17 years	98.70	1.03	51.31	38.50	1.51	48.05	31.96	3.51	51.36	38.52	1.51
18 to 24 years	228.16	2.37	88.34	15.69	2.59	51.05	8.08	3.75	88.33	15.69	2.59
25 to 34 years	489.21	4.61	118.16	7.02	3.34	74.66	3.83	5.30	118.20	7.02	3.35
35 to 44 years	377.69	3.92	186.95	17.46	5.37	160.04	12.73	11.58	186.82	17.45	5.37
45 to 54 years	253.37	2.55	136.10	12.05	3.69	114.33	8.81	7.68	136.10	12.05	3.69
55 to 64 years	206.38	2.10	100.18	8.72	2.55	72.42	5.32	4.80	99.38	8.65	2.53
65 years and older	270.41	2.68	147.42	7.73	3.72	72.02	3.31	4.75	147.07	7.72	3.72
65 to 74 years	220.05	2.19	106.13	8.64	2.79	49.80	3.53	3.31	106.05	8.63	2.79
75 and older	183.28	1.89	89.36	14.89	2.53	42.61	5.92	3.08	89.35	14.89	2.53
ETHNICITY											
Hispanic	372.52	3.80	140.06	26.88	4.14	135.44	25.51	9.93	140.03	26.87	4.15
Non-Hispanic	532.29	3.80	316.28	4.08	4.14	220.81	2.57	9.93	315.84	4.07	4.15
RACE											
White	517.74	3.42	311.89	4.16	4.70	214.53	2.59	10.36	311.45	4.15	4.71
African American	180.51	1.85	53.55	16.98	1.58	16.25	4.76	1.20	53.53	16.97	1.58
All Others	301.80	3.09	154.91	32.37	4.56	145.12	29.53	10.50	154.89	32.36	4.57

(continued on next page)

Table 30 SE Standard Errors of Pennsylvania Resident Wildlife Watchers, by Selected Characteristics: 2016 (continued)
(State population 16 years and older. Numbers in thousands)

(continued from previous page)

	POPULATION		TOTAL			AWAY FROM HOME			AROUND THE HOME		
	Total	%	Total	% Pop.	%	Total	% Pop.	%	Total	% Pop.	%
ANNUAL HOUSEHOLD INCOME											
Less than \$20,000	129.45	1.35	62.12	16.37	1.77	30.72	7.10	2.16	62.12	16.37	1.77
\$20,000 to \$29,999	139.04	1.44	58.20	19.38	1.69	19.91	5.81	1.44	58.21	19.38	1.70
\$30,000 to \$39,999	183.94	1.89	88.25	19.70	2.54	42.87	8.46	3.05	88.31	19.71	2.55
\$40,000 to \$49,999	188.24	1.95	80.58	16.06	2.32	43.59	7.85	3.07	80.65	16.07	2.32
\$50,000 to \$74,999	386.59	4.07	132.88	13.28	3.71	111.91	9.71	7.57	133.07	13.29	3.72
\$75,000 to \$99,999	378.38	3.95	165.53	11.55	4.69	134.02	7.99	9.71	165.38	11.53	4.70
\$100,000 to \$149,999	252.70	2.70	93.39	11.39	2.53	66.31	6.95	4.34	93.26	11.33	2.54
\$150,000 or more	199.99	2.08	77.70	14.07	2.25	38.45	6.23	2.76	77.68	14.07	2.25
Not reported	594.33	5.42	174.31	10.61	4.76	109.81	5.09	7.79	174.13	10.61	4.76
EDUCATION											
8 years or less	344.92	3.51	80.04	15.53	2.34	56.70	8.94	4.16	80.01	15.53	2.34
9 to 12 years	529.19	4.99	173.36	8.04	4.21	99.44	3.56	6.50	173.54	8.04	4.23
1 to 3 years of college	440.20	4.49	171.51	10.33	4.66	137.48	7.20	9.09	171.43	10.33	4.67
4 years or more of college	431.82	4.54	191.68	7.02	4.58	126.31	4.02	7.32	191.66	7.01	4.60

NOTE: Percent population (% Pop.) columns show the percentage of each row's population who participated in the activity named by the column (the percentage of the population living in urban areas who participated, etc.). Columns labeled "% under TOTAL, Away From Home, and Around the Home show the percentage of each column's participants who are described by the row heading (the percentage of those who lived in urban areas, etc.).

Table 33A SE Standard Errors of Expenditures by Pennsylvania Residents for All Wildlife Watching Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of \$)	AVERAGE PER WILDLIFE WATCHER (\$) ¹	AVERAGE PER SPENDER (\$) ¹	NUMBER OF SPENDERS (thousands)	PERCENT OF WILDLIFE WATCHERS
ALL EXPENDITURES	659,361.20	173.24	214.76	273.88	4.17
TRIP-RELATED EXPENDITURES	314,380.29	86.93	239.80	200.86	5.04
Food and lodging	188,416.01	52.84	184.38	190.54	4.97
Food	90,228.66	25.09	86.61	190.26	4.97
Lodging	109,203.92	31.19	180.48	90.96	2.51
Transportation	129,211.14	36.99	115.82	191.87	4.97
Other trip costs ²	73,340.64	21.25	144.19	180.12	5.16
EQUIPMENT AND OTHER EXPENDITURES	471,557.87	128.18	167.09	266.10	4.44
Wildlife-watching equipment	137,577.31	34.12	42.84	256.72	4.42
Binoculars, spotting scopes	16,443.00	4.65	46.31	134.83	3.88
Film and photo processing	5,101.54	1.47	20.20	64.69	1.85
Cameras, special lenses, video cameras, and other photographic equipment, including memory cards	39,479.70	11.14	53.16	111.85	3.08
Day packs, carrying cases, and special clothing	30,144.00	8.27	23.31	135.91	3.66
Bird food	79,710.35	22.14	35.32	232.59	4.85
Food for other wildlife	23,024.47	6.49	25.83	133.87	3.62
Nest boxes, bird houses, bird feeders, and bird baths	20,882.46	5.72	12.59	175.62	4.43
Other equipment (including field guides)	1,743.27	0.51	13.67	51.20	1.49
Auxiliary equipment ³	38,678.21	10.93	44.42	126.98	3.48
Special equipment ⁴	349,561.15	102.26	1,702.99	75.46	2.18
Magazines, books, and DVDs	11,059.83	3.21	24.98	76.26	2.11
Membership dues and contributions	8,294.72	2.27	17.74	143.29	4.00
Land leasing and ownership	168,430.11	49.62	789.22	72.76	2.13
Plantings	19,442.14	5.65	44.05	100.72	2.85

¹ Average expenditures are annual estimates.

² Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

³ Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

⁴ Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

Table 33B SE Standard Errors of Expenditures by Pennsylvania Residents for Away-from-home Wildlife Watching
Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of \$)	AVERAGE PER WILDLIFE WATCHER (\$) ¹	AVERAGE PER SPENDER (\$) ¹	NUMBER OF SPENDERS (thousands)	PERCENT OF WILDLIFE WATCHERS
ALL EXPENDITURES	550,377.57	371.88	442.47	213.49	8.32
TRIP-RELATED EXPENDITURES	527,438.60	358.86	442.11	212.53	8.65
Food and lodging	380,153.42	263.67	345.96	212.04	9.31
Food	160,200.97	110.81	148.14	211.53	9.52
Lodging	233,632.91	163.86	219.85	171.42	11.44
Transportation	160,332.80	111.85	179.78	236.83	14.04
Other trip costs ²	54,427.66	38.38	79.37	237.67	15.48
EQUIPMENT AND OTHER EXPENDITURES	59,517.36	42.77	94.12	134.18	9.15
Wildlife-watching equipment	30,788.79	22.43	137.21	103.09	7.45
Binoculars, spotting scopes	—	—	—	—	—
Film and photo processing	—	—	—	—	—
Cameras, special lenses, video cameras, and other photographic equipment, including memory cards	2,718.91	2.02	0.00	18.13	1.34
Day packs, carrying cases, and special clothing	13,912.56	10.24	78.46	84.23	6.22
Bird food	6,606.61	4.85	53.78	47.79	3.47
Food for other wildlife	7,848.49	5.78	150.15	31.20	2.30
Nest boxes, bird houses, bird feeders, and bird baths	7,611.50	5.61	71.72	34.67	2.55
Other equipment (including field guides)	—	—	—	—	—
Auxiliary equipment ³	23,857.27	17.61	156.33	87.36	6.38
Special equipment ⁴	—	—	—	—	—
Magazines, books, and DVDs	8,803.47	6.39	26.85	95.61	6.97
Membership dues and contributions	2,862.85	2.12	91.84	28.98	2.13
Land leasing and ownership	20,362.68	15.11	0.00	81.46	6.04
Plantings	—	—	—	—	—

— No sample data

¹ Average expenditures are annual estimates.

² Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

³ Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

⁴ Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

Table 33C SE Standard Errors of Expenditures by Pennsylvania Residents for Around-the-home Wildlife Watching
Both In and Out of Pennsylvania: 2016
(State population 16 years and older. Numbers in thousands)

	AMOUNT (thousands of \$)	AVERAGE PER WILDLIFE WATCHER (\$) ¹	AVERAGE PER SPENDER (\$) ¹	NUMBER OF SPENDERS (thousands)	PERCENT OF WILDLIFE WATCHERS
ALL EXPENDITURES	354,094.36	100.89	152.57	274.07	5.69
TRIP-RELATED EXPENDITURES	x	x	x	x	x
Food and lodging	x	x	x	x	x
Food	x	x	x	x	x
Lodging	x	x	x	x	x
Transportation	x	x	x	x	x
Other trip costs ²	x	x	x	x	x
EQUIPMENT AND OTHER EXPENDITURES	354,094.36	100.89	152.57	274.07	5.69
Wildlife-watching equipment	87,484.49	22.58	36.06	270.33	5.80
Binoculars, spotting scopes	11,089.61	3.26	61.67	55.16	1.60
Film and photo processing	2,562.00	0.75	13.70	39.70	1.16
Cameras, special lenses, video cameras, and other photographic equipment, including memory cards	35,890.74	10.49	97.94	83.15	2.41
Day packs, carrying cases, and special clothing	22,549.22	6.44	44.91	117.11	3.31
Bird food	41,303.40	11.04	19.18	241.21	5.87
Food for other wildlife	17,490.68	5.06	31.45	132.72	3.74
Nest boxes, bird houses, bird feeders, and bird baths	14,505.74	4.12	14.44	149.60	3.97
Other equipment (including field guides)	829.63	0.24	12.81	36.39	1.07
Auxiliary equipment ³	19,266.84	5.66	39.64	89.48	2.63
Special equipment ⁴	314,344.95	92.68	5,067.65	77.27	2.29
Magazines, books, and DVDs	3,404.71	0.99	13.70	56.28	1.62
Membership dues and contributions	6,447.20	1.82	13.29	83.29	2.32
Land leasing and ownership	29,731.67	8.79	134.66	18.25	0.54
Plantings	4,151.96	1.21	20.43	70.57	2.05

— No sample data x Not applicable

¹ Average expenditures are annual estimates.

² Includes equipment rental and fees for guides, pack trips, public land use and private land use, boat fuel, other boating costs, and heating and cooking fuel.

³ Includes tents, tarps, frame packs and other backpacking equipment, other camping equipment, and other auxiliary equipment.

⁴ Includes boats, campers, cabins, trail bikes, dune buggies, 4 x 4 vehicles, ATVs, 4-wheelers, snowmobiles, pickups, vans, travel and tent trailers, motor homes, house trailers, recreational vehicles (RVs) and other special equipment.

Table 35 SE Standard Errors of Pennsylvania Resident Wildlife Watchers Participating in Fishing or Hunting: 2016
(State population 16 years and older. Numbers in thousands)

	TOTAL		AWAY FROM HOME		AROUND THE HOME	
	#	%	#	%	#	%
ALL WILDLIFE WATCHERS	302.45	0.00	205.20	0.00	301.98	0.00
Did not fish or hunt	243.47	4.83	146.87	8.74	243.03	4.84
Fished or hunted	201.90	4.83	164.45	8.74	201.81	4.84
Fished	202.06	5.22	164.24	9.63	202.02	5.22
Hunted	110.53	2.97	95.91	6.29	110.51	2.98

Table 36 SE Standard Errors of Pennsylvania Resident Sportspersons Participating in Wildlife Watching: 2016
(State population 16 years and older. Numbers in thousands)

	SPORTSPERSONS		ANGLERS		HUNTERS	
	#	%	#	%	#	%
ALL SPORTSPERSONS	290.02	0.00	212.38	0.00	120.64	0.00
Did not watch wildlife	101.78	3.80	71.33	4.13	48.50	5.56
Watched wildlife	214.93	3.80	167.31	4.13	88.20	5.56
Away from home	133.77	4.70	114.99	5.98	54.08	5.03
Around the home	210.62	3.81	163.86	4.23	86.32	5.53

