

**Hunting Estimates Report
2022-2023 Hunter Harvest Survey
Region: Statewide**

Species	Total Hunters					Total Days					Total Harvest						
	Total Hunters	Confidence Limits (+)	PSE	Credibility Rating	% of incidental hunters	Total Days	Confidence Limits (+)	PSE	Credibility Rating	Total Harvest	Confidence Limits (+)	PSE	Credibility Rating	% of harvest taken incidentally	Mean Days Per Hunter	Mean Harvest Per Hunter	Mean Harvest Per Day
All Deer	234,494	3,546	0.008	G	0.00%	3,446,982	113,284	0.017	G	193,755	8,961	0.024	G	0.00%	14.70	0.83	0.06
All Squirrels	53,705	3,330	0.032	G	0.12%	346,366	27,300	0.040	G	411,587	49,644	0.062	G	0.19%	6.45	7.66	1.19
Antlered Buck	234,494	3,546	0.008	G	0.00%	3,446,982	113,284	0.017	G	85,909	4,316	0.026	G	0.00%	14.70	0.37	0.02
Antlered/Button Buck	234,494	3,546	0.008	G	0.00%	3,446,982	113,284	0.017	G	91,038	4,519	0.025	G	0.00%	14.70	0.39	0.03
Bobcat	2,754	829	0.154	F	16.67%	16,249	7,779	0.244	P	2,098	798	0.194	F	28.13%	5.90	0.76	0.13
Bobwhite Quail	6,164	1,233	0.102	G	0.00%	34,863	7,267	0.106	G	21,673	7,650	0.180	F	0.00%	5.66	3.52	0.62
Button Buck	234,494	3,546	0.008	G	0.00%	3,446,982	113,284	0.017	G	6,384	1,338	0.107	G	0.00%	14.70	0.03	0.00
Canada Geese	11,475	1,667	0.074	G	0.57%	54,361	8,066	0.076	G	42,341	11,062	0.133	G	0.93%	4.74	3.69	0.78
Common Snipe	525	363	0.353	P	0.00%	1,115	763	0.349	P	2,230	1,841	0.421	P	0.00%	2.13	4.25	2.00
Coyote	24,000	2,358	0.050	G	7.38%	208,808	32,468	0.079	G	48,333	14,132	0.149	G	7.87%	8.70	2.01	0.23
Crow	6,754	1,290	0.097	G	3.88%	31,965	10,039	0.160	F	42,821	20,411	0.243	P	1.99%	4.73	6.34	1.34
Doe	234,494	3,546	0.008	G	0.00%	3,446,982	113,284	0.017	G	90,494	6,266	0.035	G	0.00%	14.70	0.39	0.03
Dove	66,492	3,607	0.028	G	0.30%	177,773	12,481	0.036	G	893,367	75,704	0.043	G	0.03%	2.67	13.44	5.03
Ducks	48,787	3,206	0.034	G	0.00%	340,590	25,544	0.038	G	540,408	58,659	0.055	G	0.00%	6.98	11.08	1.59
Feral Swine	8,197	1,417	0.088	G	2.40%	48,174	10,795	0.114	G	11,634	4,689	0.206	P	6.20%	5.88	1.42	0.24
Fox	2,098	724	0.176	F	6.25%	16,719	8,944	0.273	P	1,574	960	0.311	P	8.33%	7.97	0.75	0.09
Fox Squirrel	5,377	1,153	0.109	G	1.22%	25,272	5,043	0.102	G	6,361	2,508	0.201	P	1.03%	4.70	1.18	0.25
Gray Squirrel	52,459	3,300	0.032	G	0.13%	341,086	27,160	0.041	G	405,254	48,654	0.061	G	0.19%	6.50	7.73	1.19
Grouse	3,344	913	0.139	G	0.00%	18,164	4,830	0.136	G	787	651	0.422	P	0.00%	5.43	0.24	0.04
Rabbit	33,443	2,735	0.042	G	0.78%	221,807	27,854	0.064	G	182,883	29,314	0.082	G	0.22%	6.63	5.47	0.82
Raccoon	7,934	1,395	0.090	G	6.61%	95,214	22,153	0.119	G	31,870	8,087	0.129	G	2.06%	12.00	4.02	0.33
Turkey	74,755	3,756	0.026	G	0.09%	395,217	19,433	0.025	G	25,423	2,574	0.052	G	0.00%	5.29	0.34	0.06
Woodcock	2,951	858	0.148	G	4.44%	16,525	5,367	0.166	F	10,395	5,553	0.273	P	1.89%	5.60	3.52	0.63

Total # of license holders	702,809
Deceased license holder rate	0.0122043
Adj Total # of license holders	694,231
Total # of surveys sent	44,001
Undeliverables	2,605
Deceased	537
Sample size	40,859
Sample rate	5.89%
Total Survey Returns	12,030
Refused	38
Total Survey Responses	11,992
Response rate	29.35%
Total Not Responding	28,867

<u>Active Hunter Estimate</u>	
# of Active Hunters from Respondents	4,543
Proportion of Responding Hunters	0.3788359
Estimated Proportion of Non-responding Hunters	0.45
SE	0.0044298
PSE	0.0116932
Total Active Licensed Hunters	297,904
Margin of Error @ 95% CL	6,828
Active Hunter Rate within All License Holders	42.91%

Frequency of Hunters with Various Numbers of Kills
2022-2023 Hunter Harvest Survey
Region: Statewide

All Deer

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	123,927	52.85%	123,927	52.85%
1	62,062	26.47%	185,989	79.32%
2	29,748	12.69%	215,737	92.00%
3	9,346	3.99%	225,083	95.99%
4	4,936	2.10%	230,019	98.09%
5	2,764	1.18%	232,783	99.27%
6+	1,711	0.73%	234,494	100.00%

All Squirrels

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	10,318	19.21%	10,318	19.21%
1	4,564	8.50%	14,882	27.71%
2	4,960	9.24%	19,842	36.95%
3	3,902	7.27%	23,744	44.21%
4	4,828	8.99%	28,572	53.20%
5	2,976	5.54%	31,548	58.74%
6+	22,157	41.26%	53,705	100.00%

Antlered Buck

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	155,913	66.49%	155,913	66.49%
1	60,746	25.91%	216,659	92.39%
2	17,375	7.41%	234,034	99.80%
3	461	0.20%	234,495	100.00%
4	0	0.00%	234,495	100.00%
5	0	0.00%	234,495	100.00%
6+	0	0.00%	234,495	100.00%

**Antlered/Button
Buck**

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	152,885	65.20%	152,885	65.20%
1	61,602	26.27%	214,487	91.47%
2	18,494	7.89%	232,981	99.35%
3	1,382	0.59%	234,363	99.94%
4	132	0.06%	234,495	100.00%
5	0	0.00%	234,495	100.00%
6+	0	0.00%	234,495	100.00%

Bobcat

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	1,180	45.00%	1,180	45.00%
1	1,049	40.00%	2,229	85.00%
2	197	7.50%	2,426	92.50%
3	131	5.00%	2,557	97.50%
4	66	2.50%	2,623	100.00%
5	0	0.00%	2,623	100.00%
6+	0	0.00%	2,623	100.00%

Bobwhite Quail

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	3,115	50.54%	3,115	50.54%
1	663	10.75%	3,778	61.29%
2	597	9.68%	4,375	70.97%
3	0	0.00%	4,375	70.97%
4	265	4.30%	4,640	75.27%
5	331	5.38%	4,971	80.65%
6+	1,193	19.35%	6,164	100.00%

Button Buck

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	228,571	97.47%	228,571	97.47%
1	5,463	2.33%	234,034	99.80%
2	461	0.20%	234,495	100.00%
3	0	0.00%	234,495	100.00%
4	0	0.00%	234,495	100.00%
5	0	0.00%	234,495	100.00%
6+	0	0.00%	234,495	100.00%

Canada Geese

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	4,089	35.63%	4,089	35.63%
1	2,044	17.82%	6,133	53.45%
2	1,319	11.49%	7,452	64.94%
3	857	7.47%	8,309	72.41%
4	462	4.02%	8,771	76.44%
5	330	2.87%	9,101	79.31%
6+	2,374	20.69%	11,475	100.00%

Common Snipe

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	197	37.50%	197	37.50%
1	0	0.00%	197	37.50%
2	0	0.00%	197	37.50%
3	66	12.50%	263	50.00%
4	66	12.50%	329	62.50%
5	66	12.50%	395	75.00%
6+	131	25.00%	526	100.00%

Coyote

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	11,236	46.94%	11,236	46.94%
1	5,718	23.89%	16,954	70.83%
2	2,859	11.94%	19,813	82.78%
3	1,330	5.56%	21,143	88.33%
4	598	2.50%	21,741	90.83%
5	199	0.83%	21,940	91.67%
6+	1,995	8.33%	23,935	100.00%

Crow

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	878	13.00%	878	13.00%
1	1,148	17.00%	2,026	30.00%
2	946	14.00%	2,972	44.00%
3	810	12.00%	3,782	56.00%
4	540	8.00%	4,322	64.00%
5	540	8.00%	4,862	72.00%
6+	1,891	28.00%	6,753	100.00%

Doe

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	177,631	75.75%	177,631	75.75%
1	34,881	14.88%	212,512	90.63%
2	13,887	5.92%	226,399	96.55%
3	5,133	2.19%	231,532	98.74%
4	2,698	1.15%	234,230	99.89%
5	197	0.08%	234,427	99.97%
6+	66	0.03%	234,493	100.00%

Dove

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	8,295	12.49%	8,295	12.49%
1	2,370	3.57%	10,665	16.06%
2	3,621	5.45%	14,286	21.51%
3	2,963	4.46%	17,249	25.97%
4	3,621	5.45%	20,870	31.42%
5	3,226	4.86%	24,096	36.27%
6+	42,332	63.73%	66,428	100.00%

Ducks

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	9,337	19.16%	9,337	19.16%
1	2,762	5.67%	12,099	24.83%
2	4,668	9.58%	16,767	34.41%
3	2,499	5.13%	19,266	39.54%
4	3,353	6.88%	22,619	46.42%
5	2,301	4.72%	24,920	51.15%
6+	23,802	48.85%	48,722	100.00%

Feral Swine

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	4,497	57.63%	4,497	57.63%
1	1,190	15.25%	5,687	72.88%
2	992	12.71%	6,679	85.59%
3	265	3.39%	6,944	88.98%
4	265	3.39%	7,209	92.37%
5	0	0.00%	7,209	92.37%
6+	595	7.63%	7,804	100.00%

Fox

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	1,115	53.13%	1,115	53.13%
1	721	34.38%	1,836	87.50%
2	197	9.38%	2,033	96.88%
3	0	0.00%	2,033	96.88%
4	0	0.00%	2,033	96.88%
5	0	0.00%	2,033	96.88%
6+	66	3.13%	2,099	100.00%

Fox Squirrel

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	2,951	55.56%	2,951	55.56%
1	1,049	19.75%	4,000	75.31%
2	590	11.11%	4,590	86.42%
3	197	3.70%	4,787	90.12%
4	131	2.47%	4,918	92.59%
5	131	2.47%	5,049	95.06%
6+	262	4.94%	5,311	100.00%

Gray Squirrel

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	9,658	18.43%	9,658	18.43%
1	4,300	8.21%	13,958	26.64%
2	4,895	9.34%	18,853	35.98%
3	3,771	7.20%	22,624	43.18%
4	4,895	9.34%	27,519	52.53%
5	2,977	5.68%	30,496	58.21%
6+	21,897	41.79%	52,393	100.00%

Grouse

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	2,885	86.27%	2,885	86.27%
1	262	7.84%	3,147	94.12%
2	131	3.92%	3,278	98.04%
3	0	0.00%	3,278	98.04%
4	66	1.96%	3,344	100.00%
5	0	0.00%	3,344	100.00%
6+	0	0.00%	3,344	100.00%

Rabbit

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	8,756	26.23%	8,756	26.23%
1	4,082	12.23%	12,838	38.46%
2	5,464	16.37%	18,302	54.83%
3	2,172	6.51%	20,474	61.34%
4	2,502	7.50%	22,976	68.84%
5	1,777	5.33%	24,753	74.16%
6+	8,624	25.84%	33,377	100.00%

Raccoon

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	1,455	18.33%	1,455	18.33%
1	1,984	25.00%	3,439	43.33%
2	1,190	15.00%	4,629	58.33%
3	793	10.00%	5,422	68.33%
4	397	5.00%	5,819	73.33%
5	463	5.83%	6,282	79.17%
6+	1,653	20.83%	7,935	100.00%

Turkey

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	53,304	72.13%	53,304	72.13%
1	15,794	21.37%	69,098	93.50%
2	4,804	6.50%	73,902	100.00%
3	0	0.00%	73,902	100.00%
4	0	0.00%	73,902	100.00%
5	0	0.00%	73,902	100.00%
6+	0	0.00%	73,902	100.00%

Woodcock

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	872	29.55%	872	29.55%
1	604	20.45%	1,476	50.00%
2	402	13.64%	1,878	63.64%
3	201	6.82%	2,079	70.45%
4	134	4.55%	2,213	75.00%
5	201	6.82%	2,414	81.82%
6+	537	18.18%	2,951	100.00%

Hunter Harvest Survey Regional Credibility Measures

Although the Hunter Harvest Survey (HHS) database provides a huge amount of information about regional hunting activity for many species, there are a variety of possible problems with estimates derived from HHS data. Small sample sizes, low relative harvest or hunting effort rates, imprecise estimates, and missing data all can compromise HHS results. Often, users do not take these problems into account when viewing HHS results, and use the results inappropriately.

To provide some guidance into the interpretation of HHS data, we have implemented a series of checks for some minimum criteria that we view as cause for caution. We categorize HHS results into 3 credibility categories:

	Total Hunters	Total Days	Total Harvest
Poor	> 30% of counties have < 3 records within the selected region* < 20 individual hunter responses Total hunter PSE > 20%	> 30% of counties have < 3 records within the selected region* < 20 individual hunter responses Total Days PSE > 20% <0.1 days per hunter	> 30% of counties have < 3 records within the selected region* < 20 individual hunter responses Total hunter PSE > 20% <0.002 animals per hunter
Fair	>=20 and <30 individual hunter responses 15% < Total Hunter PSE <= 20%	>=20 and <30 individual hunter responses 15% < Total Harvest PSE <= 20% <10.0 days per hunter	>=20 and <30 individual hunter responses <0.02 animals per hunter
Good	>= 30 individual hunter responses Total Hunter PSE < 15%	>= 30 individual hunter responses Total Harvest PSE < 15% >= 10.0 days per hunter	>= 30 individual hunter responses >= 0.02 animals per hunter

*Does not apply to statewide summary