

**Hunting Estimates Report
2018-19 Hunter Harvest
Region: Statewide**

Species	Total Hunters					Total Days					Total Harvest					Mean Days Per Hunter	Mean Harvest Per Hunter	Mean Harvest Per Day
	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				
All Deer	229,720	3,410	0.008	G	0.00%	3,228,154	113,563	0.018	G	178,560	8,151	0.023	G	0.00%	14.05	0.78	0.06	
All Squirrels	50,971	3,212	0.032	G	0.63%	343,760	32,812	0.049	G	405,103	50,306	0.063	G	0.41%	6.74	7.95	1.18	
Antlered Buck	229,720	3,410	0.008	G	0.00%	3,228,154	113,563	0.018	G	93,890	4,722	0.026	G	0.00%	14.05	0.41	0.03	
Antlered/Button Buck	229,720	3,410	0.008	G	0.00%	3,228,154	113,563	0.018	G	97,824	4,828	0.025	G	0.00%	14.05	0.43	0.03	
Bobcat	1,523	453	0.152	F	23.26%	7,347	2,605	0.181	F	921	331	0.184	F	38.46%	4.83	0.60	0.13	
Bobwhite Quail	5,436	1,145	0.107	G	0.00%	25,368	6,428	0.129	G	22,844	6,332	0.141	G	0.00%	4.67	4.20	0.90	
Button Buck	229,720	3,410	0.008	G	0.00%	3,228,154	113,563	0.018	G	7,939	1,487	0.096	G	0.00%	14.05	0.03	0.00	
Canada Geese	11,703	1,661	0.072	G	3.28%	61,879	12,246	0.101	G	48,679	16,705	0.175	F	1.58%	5.29	4.16	0.79	
Common Snipe	384	307	0.408	P	16.67%	640	538	0.429	P	448	563	0.642	P	42.86%	1.67	1.17	0.70	
Coyote	24,861	2,146	0.044	G	9.29%	208,957	32,517	0.079	G	31,809	5,919	0.095	G	9.45%	8.40	1.28	0.15	
Crow	8,442	1,419	0.086	G	4.55%	40,614	14,282	0.179	F	52,549	16,070	0.156	F	1.34%	4.81	6.22	1.29	
Doe	229,720	3,410	0.008	G	0.00%	3,228,154	113,563	0.018	G	87,525	5,909	0.034	G	0.00%	14.05	0.38	0.03	
Dove	60,947	3,438	0.029	G	0.21%	163,470	11,278	0.035	G	752,264	59,137	0.040	G	0.02%	2.68	12.34	4.60	
Ducks	47,965	3,135	0.033	G	0.00%	361,309	27,608	0.039	G	615,517	70,142	0.058	G	0.00%	7.53	12.83	1.70	
Feral Swine	7,866	1,371	0.089	G	1.63%	60,442	14,533	0.123	G	15,093	9,778	0.331	P	1.27%	7.68	1.92	0.25	
Fox	2,174	728	0.171	F	20.59%	17,465	10,128	0.296	P	1,977	851	0.220	P	35.59%	8.03	0.91	0.11	
Fox Squirrel	3,517	924	0.134	G	1.82%	20,158	7,504	0.190	F	2,931	1,099	0.191	F	2.18%	5.73	0.83	0.15	
Gray Squirrel	50,587	3,202	0.032	G	0.63%	341,024	32,687	0.049	G	402,228	49,963	0.063	G	0.41%	6.74	7.95	1.18	
Grouse	3,390	907	0.137	G	1.89%	22,064	6,960	0.161	F	2,878	2,051	0.364	P	2.22%	6.51	0.85	0.13	
Rabbit	32,488	2,662	0.042	G	0.20%	217,281	26,238	0.062	G	219,214	38,534	0.090	G	0.03%	6.69	6.75	1.01	
Raccoon	8,250	1,403	0.087	G	3.88%	160,608	50,571	0.161	F	65,355	21,470	0.168	F	1.17%	19.47	7.92	0.41	
Turkey	71,116	3,630	0.026	G	0.09%	387,447	19,841	0.026	G	26,424	2,626	0.051	G	0.24%	5.45	0.37	0.07	
Woodcock	1,983	696	0.179	F	3.23%	11,417	4,431	0.198	F	5,564	2,930	0.269	P	1.15%	5.76	2.81	0.49	

Total # of license holders	673,165
Deceased license holder rate	0.0207739
Adj Total # of license holders	659,180
Total # of surveys sent	31,530
Undeliverables	2,812
Deceased	655
Sample size	28,063
Sample rate	4.26%
Total Survey Returns	11,250
Refused	51
Total Survey Responses	11,199
Response rate	39.91%
Total Not Responding	16,864

<u>Active Hunter Estimate</u>	
# of Active Hunters from Respondents	4,524
Proportion of Responding Hunters	0.4039646
Estimated Proportion of Non-responding Hunters	0.4621
SE	0.0046368
PSE	0.0114782
Total Active Licensed Hunters	289,314
Margin of Error @ 95% CL	6,509
Active Hunter Rate within All License Holders	43.89%

Frequency of Hunters with Various Numbers of Kills
2018-19 Hunter Harvest
Region: Statewide

All Deer

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	121,794	53.02%	121,794	53.02%
1	59,380	25.85%	181,174	78.87%
2	27,238	11.86%	208,412	90.73%
3	11,747	5.11%	220,159	95.84%
4	6,261	2.73%	226,420	98.57%
5	1,485	0.65%	227,905	99.21%
6+	1,807	0.79%	229,712	100.00%

All Squirrels

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	9,609	18.85%	9,609	18.85%
1	4,026	7.90%	13,635	26.75%
2	5,454	10.70%	19,089	37.45%
3	3,701	7.26%	22,790	44.71%
4	3,961	7.77%	26,751	52.48%
5	3,182	6.24%	29,933	58.73%
6+	21,037	41.27%	50,970	100.00%

Antlered Buck

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	152,195	66.25%	152,195	66.25%
1	58,735	25.57%	210,930	91.82%
2	18,266	7.95%	229,196	99.78%
3	323	0.14%	229,519	99.92%
4	129	0.06%	229,648	99.97%
5	0	0.00%	229,648	99.97%
6+	65	0.03%	229,713	100.00%

**Antlered/Button
Buck**

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	148,322	64.57%	148,322	64.57%
1	59,897	26.07%	208,219	90.64%
2	19,880	8.65%	228,099	99.30%
3	1,226	0.53%	229,325	99.83%
4	258	0.11%	229,583	99.94%
5	65	0.03%	229,648	99.97%
6+	65	0.03%	229,713	100.00%

Bobcat

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	648	43.90%	648	43.90%
1	792	53.66%	1,440	97.56%
2	0	0.00%	1,440	97.56%
3	0	0.00%	1,440	97.56%
4	36	2.44%	1,476	100.00%
5	0	0.00%	1,476	100.00%
6+	0	0.00%	1,476	100.00%

Bobwhite Quail

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	2,265	42.17%	2,265	42.17%
1	388	7.23%	2,653	49.40%
2	194	3.61%	2,847	53.01%
3	259	4.82%	3,106	57.83%
4	324	6.02%	3,430	63.86%
5	259	4.82%	3,689	68.67%
6+	1,683	31.33%	5,372	100.00%

Button Buck

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	222,419	96.82%	222,419	96.82%
1	6,713	2.92%	229,132	99.75%
2	516	0.22%	229,648	99.97%
3	65	0.03%	229,713	100.00%
4	0	0.00%	229,713	100.00%
5	0	0.00%	229,713	100.00%
6+	0	0.00%	229,713	100.00%

Canada Geese

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	4,115	35.16%	4,115	35.16%
1	2,636	22.53%	6,751	57.69%
2	1,222	10.44%	7,973	68.13%
3	707	6.04%	8,680	74.18%
4	772	6.59%	9,452	80.77%
5	257	2.20%	9,709	82.97%
6+	1,993	17.03%	11,702	100.00%

Common Snipe

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	256	66.67%	256	66.67%
1	0	0.00%	256	66.67%
2	0	0.00%	256	66.67%
3	64	16.67%	320	83.33%
4	64	16.67%	384	100.00%
5	0	0.00%	384	100.00%
6+	0	0.00%	384	100.00%

Coyote

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	12,368	49.89%	12,368	49.89%
1	5,993	24.18%	18,361	74.07%
2	3,215	12.97%	21,576	87.03%
3	981	3.96%	22,557	90.99%
4	654	2.64%	23,211	93.63%
5	545	2.20%	23,756	95.82%
6+	1,035	4.18%	24,791	100.00%

Crow

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	1,375	16.41%	1,375	16.41%
1	1,767	21.09%	3,142	37.50%
2	916	10.94%	4,058	48.44%
3	655	7.81%	4,713	56.25%
4	982	11.72%	5,695	67.97%
5	458	5.47%	6,153	73.44%
6+	2,225	26.56%	8,378	100.00%

Doe

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	173,494	75.53%	173,494	75.53%
1	34,918	15.20%	208,412	90.73%
2	14,264	6.21%	222,676	96.94%
3	4,389	1.91%	227,065	98.85%
4	2,324	1.01%	229,389	99.86%
5	323	0.14%	229,712	100.00%
6+	0	0.00%	229,712	100.00%

Dove

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	6,507	10.70%	6,507	10.70%
1	1,288	2.12%	7,795	12.82%
2	3,608	5.93%	11,403	18.75%
3	2,706	4.45%	14,109	23.20%
4	3,028	4.98%	17,137	28.18%
5	3,092	5.08%	20,229	33.26%
6+	40,588	66.74%	60,817	100.00%

Ducks

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	7,833	16.33%	7,833	16.33%
1	3,403	7.10%	11,236	23.43%
2	3,917	8.17%	15,153	31.59%
3	2,954	6.16%	18,107	37.75%
4	2,568	5.35%	20,675	43.11%
5	2,440	5.09%	23,115	48.19%
6+	24,848	51.81%	47,963	100.00%

Feral Swine

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	3,837	50.42%	3,837	50.42%
1	2,174	28.57%	6,011	78.99%
2	512	6.72%	6,523	85.71%
3	320	4.20%	6,843	89.92%
4	192	2.52%	7,035	92.44%
5	192	2.52%	7,227	94.96%
6+	384	5.04%	7,611	100.00%

Fox

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	858	41.94%	858	41.94%
1	792	38.71%	1,650	80.65%
2	132	6.45%	1,782	87.10%
3	198	9.68%	1,980	96.77%
4	0	0.00%	1,980	96.77%
5	66	3.23%	2,046	100.00%
6+	0	0.00%	2,046	100.00%

Fox Squirrel

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	1,759	50.94%	1,759	50.94%
1	1,042	30.19%	2,801	81.13%
2	326	9.43%	3,127	90.57%
3	195	5.66%	3,322	96.23%
4	0	0.00%	3,322	96.23%
5	130	3.77%	3,452	100.00%
6+	0	0.00%	3,452	100.00%

Gray Squirrel

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	9,546	18.92%	9,546	18.92%
1	3,637	7.21%	13,183	26.13%
2	5,390	10.68%	18,573	36.81%
3	3,766	7.46%	22,339	44.27%
4	4,026	7.98%	26,365	52.25%
5	3,182	6.31%	29,547	58.56%
6+	20,910	41.44%	50,457	100.00%

Grouse

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	2,558	75.47%	2,558	75.47%
1	384	11.32%	2,942	86.79%
2	64	1.89%	3,006	88.68%
3	128	3.77%	3,134	92.45%
4	64	1.89%	3,198	94.34%
5	0	0.00%	3,198	94.34%
6+	192	5.66%	3,390	100.00%

Rabbit

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	8,074	25.10%	8,074	25.10%
1	4,069	12.65%	12,143	37.75%
2	4,199	13.05%	16,342	50.80%
3	2,519	7.83%	18,861	58.63%
4	2,390	7.43%	21,251	66.06%
5	1,679	5.22%	22,930	71.29%
6+	9,237	28.71%	32,167	100.00%

Raccoon

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	1,096	13.39%	1,096	13.39%
1	1,547	18.90%	2,643	32.28%
2	1,289	15.75%	3,932	48.03%
3	773	9.45%	4,705	57.48%
4	516	6.30%	5,221	63.78%
5	322	3.94%	5,543	67.72%
6+	2,643	32.28%	8,186	100.00%

Turkey

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	49,984	70.93%	49,984	70.93%
1	14,617	20.74%	64,601	91.67%
2	5,808	8.24%	70,409	99.91%
3	65	0.09%	70,474	100.00%
4	0	0.00%	70,474	100.00%
5	0	0.00%	70,474	100.00%
6+	0	0.00%	70,474	100.00%

Woodcock

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	639	32.26%	639	32.26%
1	511	25.81%	1,150	58.06%
2	192	9.68%	1,342	67.74%
3	256	12.90%	1,598	80.65%
4	64	3.23%	1,662	83.87%
5	0	0.00%	1,662	83.87%
6+	320	16.13%	1,982	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