

**Hunting Estimates Report
2019-20 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	231,808	3,267	0.007	G	0.03%	3,200,131	103,565	0.017	G	201,980	8,398	0.021	G	0.06%	13.81	0.87	0.06	
All Squirrels	53,933	3,136	0.030	G	0.43%	338,741	27,517	0.041	G	383,356	38,185	0.051	G	0.36%	6.28	7.11	1.13	
Antlered Buck	231,808	3,267	0.007	G	0.03%	3,200,131	103,565	0.017	G	85,978	3,961	0.024	G	0.14%	13.81	0.37	0.03	
Antlered/Buttton Buck	231,808	3,267	0.007	G	0.03%	3,200,131	103,565	0.017	G	95,509	4,280	0.023	G	0.12%	13.81	0.41	0.03	
Bobcat	2,796	787	0.144	G	18.75%	23,581	8,608	0.186	F	2,097	886	0.216	P	33.33%	8.43	0.75	0.09	
Bobwhite Quail	5,999	1,147	0.098	G	1.94%	35,121	12,610	0.183	F	20,078	12,928	0.329	P	0.58%	5.85	3.35	0.57	
Buttton Buck	231,808	3,267	0.007	G	0.03%	3,200,131	103,565	0.017	G	9,787	1,577	0.082	G	0.00%	13.81	0.04	0.00	
Canada Geese	11,882	1,597	0.069	G	1.47%	66,761	11,540	0.088	G	51,467	15,780	0.156	F	0.23%	5.62	4.33	0.77	
Common Snipe	408	302	0.378	P	28.57%	874	769	0.449	P	1,971	2,355	0.610	P	8.87%	2.14	4.83	2.26	
Coyote	28,015	2,380	0.043	G	11.43%	279,433	57,932	0.106	G	55,023	14,962	0.139	G	10.90%	9.97	1.96	0.20	
Crow	8,678	1,373	0.081	G	2.68%	35,534	7,203	0.103	G	77,049	50,017	0.331	P	3.63%	4.09	8.88	2.17	
Doe	231,808	3,267	0.007	G	0.03%	3,200,131	103,565	0.017	G	90,183	5,701	0.032	G	0.00%	13.81	0.39	0.03	
Dove	61,272	3,291	0.027	G	0.00%	167,609	11,802	0.036	G	781,919	66,720	0.044	G	0.00%	2.74	12.76	4.67	
Ducks	46,711	2,963	0.032	G	0.25%	355,903	26,334	0.038	G	459,424	47,242	0.052	G	0.03%	7.62	9.84	1.29	
Feral Swine	8,678	1,373	0.081	G	3.36%	76,980	16,437	0.109	G	20,230	9,567	0.241	P	3.74%	8.87	2.33	0.26	
Fox	2,097	682	0.166	F	8.33%	19,241	12,760	0.338	P	1,857	728	0.200	P	9.41%	9.18	0.89	0.10	
Fox Squirrel	5,067	1,056	0.106	G	3.45%	30,343	10,150	0.171	F	5,242	1,965	0.191	F	3.33%	5.99	1.03	0.17	
Gray Squirrel	52,419	3,102	0.030	G	0.22%	331,419	27,225	0.042	G	378,170	37,285	0.050	G	0.32%	6.32	7.21	1.14	
Grouse	3,850	1,003	0.133	G	0.00%	28,073	12,579	0.229	P	4,130	2,200	0.272	P	0.00%	7.29	1.07	0.15	
Rabbit	35,587	2,644	0.038	G	0.49%	222,928	24,322	0.056	G	190,386	26,656	0.071	G	0.06%	6.26	5.35	0.85	
Raccoon	12,530	2,010	0.082	G	2.07%	163,769	43,761	0.136	G	54,239	12,732	0.120	G	0.96%	13.07	4.33	0.33	
Turkey	72,804	3,497	0.025	G	0.08%	414,247	23,403	0.029	G	27,646	2,540	0.047	G	0.00%	5.69	0.38	0.07	
Woodcock	2,271	710	0.160	F	5.13%	11,823	4,533	0.196	F	11,298	5,487	0.248	P	8.25%	5.21	4.97	0.96	

Total # of license holders	649,981
Deceased license holder rate	0.0176069
Adj Total # of license holders	638,536
Total # of surveys sent	30,613
Undeliverables	2,188
Deceased	539
Sample size	27,886
Sample rate	4.37%
Total Survey Returns	11,845
Refused	60
Total Survey Responses	11,785
Response rate	42.26%
Total Not Responding	16,101

Active Hunter Estimate	
# of Active Hunters from Respondents	5,011
Proportion of Responding Hunters	0.4252015
Estimated Proportion of Non-responding Hunters	0.4804000
SE	0.0045540
PSE	0.0107102
Total Active Licensed Hunters	291,847
Margin of Error @ 95% CL	6,126
Active Hunter Rate within All License Holders	45.71%

Frequency of Hunters with Various Numbers of Kills
2019-20 Hunter Harvest
Region: Statewide

All Deer

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	118,026	50.92%	118,026	50.92%
1	61,693	26.61%	179,719	77.53%
2	30,060	12.97%	209,779	90.50%
3	12,875	5.55%	222,654	96.05%
4	5,360	2.31%	228,014	98.37%
5	2,680	1.16%	230,694	99.52%
6+	1,107	0.48%	231,801	100.00%

All Squirrels

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	11,174	20.72%	11,174	20.72%
1	4,117	7.63%	15,291	28.35%
2	5,293	9.81%	20,584	38.17%
3	3,764	6.98%	24,348	45.15%
4	4,293	7.96%	28,641	53.11%
5	3,293	6.11%	31,934	59.21%
6+	21,996	40.79%	53,930	100.00%

Antlered Buck

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	150,184	64.79%	150,184	64.79%
1	61,576	26.56%	211,760	91.35%
2	19,749	8.52%	231,509	99.87%
3	233	0.10%	231,742	99.97%
4	58	0.03%	231,800	100.00%
5	0	0.00%	231,800	100.00%
6+	0	0.00%	231,800	100.00%

**Antlered/Button
Buck**

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	145,523	62.78%	145,523	62.78%
1	62,275	26.87%	207,798	89.65%
2	22,603	9.75%	230,401	99.40%
3	1,282	0.55%	231,683	99.95%
4	117	0.05%	231,800	100.00%
5	0	0.00%	231,800	100.00%
6+	0	0.00%	231,800	100.00%

Bobcat

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	1,339	48.94%	1,339	48.94%
1	1,048	38.30%	2,387	87.23%
2	233	8.51%	2,620	95.74%
3	0	0.00%	2,620	95.74%
4	58	2.13%	2,678	97.87%
5	0	0.00%	2,678	97.87%
6+	58	2.13%	2,736	100.00%

Bobwhite Quail

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	3,244	54.08%	3,244	54.08%
1	551	9.18%	3,795	63.27%
2	673	11.22%	4,468	74.49%
3	61	1.02%	4,529	75.51%
4	367	6.12%	4,896	81.63%
5	184	3.06%	5,080	84.69%
6+	918	15.31%	5,998	100.00%

Button Buck

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	222,887	96.15%	222,887	96.15%
1	8,039	3.47%	230,926	99.62%
2	874	0.38%	231,800	100.00%
3	0	0.00%	231,800	100.00%
4	0	0.00%	231,800	100.00%
5	0	0.00%	231,800	100.00%
6+	0	0.00%	231,800	100.00%

Canada Geese

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	3,453	29.21%	3,453	29.21%
1	2,107	17.82%	5,560	47.03%
2	1,931	16.34%	7,491	63.37%
3	468	3.96%	7,959	67.33%
4	761	6.44%	8,720	73.76%
5	585	4.95%	9,305	78.71%
6+	2,517	21.29%	11,822	100.00%

Common Snipe

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	136	33.33%	136	33.33%
1	68	16.67%	204	50.00%
2	68	16.67%	272	66.67%
3	0	0.00%	272	66.67%
4	68	16.67%	340	83.33%
5	0	0.00%	340	83.33%
6+	68	16.67%	408	100.00%

Coyote

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	13,149	47.13%	13,149	47.13%
1	7,404	26.54%	20,553	73.67%
2	3,317	11.89%	23,870	85.56%
3	1,185	4.25%	25,055	89.81%
4	652	2.34%	25,707	92.14%
5	533	1.91%	26,240	94.06%
6+	1,658	5.94%	27,898	100.00%

Crow

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	1,525	17.57%	1,525	17.57%
1	1,114	12.84%	2,639	30.41%
2	1,407	16.22%	4,046	46.62%
3	880	10.14%	4,926	56.76%
4	997	11.49%	5,923	68.24%
5	469	5.41%	6,392	73.65%
6+	2,287	26.35%	8,679	100.00%

Doe

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	173,777	74.97%	173,777	74.97%
1	35,886	15.48%	209,663	90.45%
2	14,622	6.31%	224,285	96.76%
3	5,360	2.31%	229,645	99.07%
4	1,864	0.80%	231,509	99.87%
5	233	0.10%	231,742	99.97%
6+	58	0.03%	231,800	100.00%

Dove

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	7,542	12.32%	7,542	12.32%
1	1,695	2.77%	9,237	15.09%
2	2,339	3.82%	11,576	18.91%
3	1,929	3.15%	13,505	22.06%
4	3,976	6.49%	17,481	28.56%
5	3,391	5.54%	20,872	34.10%
6+	40,340	65.90%	61,212	100.00%

Ducks

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	9,318	19.97%	9,318	19.97%
1	3,048	6.53%	12,366	26.51%
2	4,396	9.42%	16,762	35.93%
3	3,458	7.41%	20,220	43.34%
4	2,813	6.03%	23,033	49.37%
5	2,168	4.65%	25,201	54.02%
6+	21,450	45.98%	46,651	100.00%

Feral Swine

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	3,870	45.52%	3,870	45.52%
1	2,052	24.14%	5,922	69.66%
2	821	9.66%	6,743	79.31%
3	645	7.59%	7,388	86.90%
4	235	2.76%	7,623	89.66%
5	235	2.76%	7,858	92.41%
6+	645	7.59%	8,503	100.00%

Fox

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	839	40.00%	839	40.00%
1	959	45.71%	1,798	85.71%
2	120	5.71%	1,918	91.43%
3	120	5.71%	2,038	97.14%
4	0	0.00%	2,038	97.14%
5	60	2.86%	2,098	100.00%
6+	0	0.00%	2,098	100.00%

Fox Squirrel

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	2,970	58.62%	2,970	58.62%
1	874	17.24%	3,844	75.86%
2	582	11.49%	4,426	87.36%
3	233	4.60%	4,659	91.95%
4	116	2.30%	4,775	94.25%
5	116	2.30%	4,891	96.55%
6+	175	3.45%	5,066	100.00%

Gray Squirrel

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	10,413	19.87%	10,413	19.87%
1	3,765	7.18%	14,178	27.05%
2	5,177	9.88%	19,355	36.92%
3	3,589	6.85%	22,944	43.77%
4	4,412	8.42%	27,356	52.19%
5	3,177	6.06%	30,533	58.25%
6+	21,885	41.75%	52,418	100.00%

Grouse

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	2,450	63.64%	2,450	63.64%
1	350	9.09%	2,800	72.73%
2	630	16.36%	3,430	89.09%
3	210	5.45%	3,640	94.55%
4	0	0.00%	3,640	94.55%
5	0	0.00%	3,640	94.55%
6+	210	5.45%	3,850	100.00%

Rabbit

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	8,955	25.21%	8,955	25.21%
1	5,479	15.42%	14,434	40.63%
2	5,067	14.26%	19,501	54.89%
3	2,946	8.29%	22,447	63.18%
4	2,180	6.14%	24,627	69.32%
5	1,532	4.31%	26,159	73.63%
6+	9,368	26.37%	35,527	100.00%

Raccoon

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	2,541	20.28%	2,541	20.28%
1	2,541	20.28%	5,082	40.56%
2	1,490	11.89%	6,572	52.45%
3	1,752	13.99%	8,324	66.43%
4	789	6.29%	9,113	72.73%
5	1,051	8.39%	10,164	81.12%
6+	2,366	18.88%	12,530	100.00%

Turkey

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	50,565	69.96%	50,565	69.96%
1	15,801	21.86%	66,366	91.82%
2	5,911	8.18%	72,277	100.00%
3	0	0.00%	72,277	100.00%
4	0	0.00%	72,277	100.00%
5	0	0.00%	72,277	100.00%
6+	0	0.00%	72,277	100.00%

Woodcock

Number Killed	Number of Hunters	Percent of Hunters	Cumulative Frequency	Cumulative Percent
0	956	42.11%	956	42.11%
1	120	5.26%	1,076	47.37%
2	179	7.89%	1,255	55.26%
3	179	7.89%	1,434	63.16%
4	0	0.00%	1,434	63.16%
5	120	5.26%	1,554	68.42%
6+	717	31.58%	2,271	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