Understanding CWD Surveillance
Appendix II

Report on CWD Surveillance and Outcomes in Free-Ranging and Farmed Cervids in Minnesota

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Table of Contents

Objectives

The objectives of this report are to

- Describe surveillance effort in both farmed and free-ranging cervids in Minnesota from 2014-2016
- Describe the potential prevalence of CWD in these populations, based on the results of testing

Farmed Cervid Populations

This section of the report is broken down by year, as the sources of data for each year are varied. Each of these subsections describes the source of data, and a basic description of the surveillance that was performed.

2014

For 2014, there were two different sources of information available (see appendix A). The following information was available:

- Number of cervid herds, by county (no distinction by type)
- Total number of herds with white-tailed deer, total number of herds with elk, and total number of herds with other cervid species across all counties
- Total number of elk, total number of white-tailed deer, and total number of other cervid species across all counties
- Total number of CWD tests (not separated by cervid type or county)
    - Note, this information was not consistent between the two sources; one of these sources appeared to be dated November 2014 and may have been incomplete, and so the result from the second source is included in calculations

Due to the lack of separation of CWD tests by county or cervid type, information related to these tests can only be summarized overall. **Of a total number of 10,361 cervids, 1,729 were tested (16.69%).** None of the tests were positive.

2015

For 2015, there were two sources of information available. The two sources appear in Appendix B. The two sources were in conflict, and so a third source (the document "BAH CWD Sampling.pdf") was used to determine that the first source had accurate testing information, but the second source had accurate herd numbers. The following information was available:

- Total number of herds with white tailed deer, total number herds with elk, and total number of herds with other cervid species across all counties
- Total number of elk, total number of white tailed deer, and total number of other species separated by species across all counties
- Total number of CWD tests across all counties, not separated by cervid type

Due to the lack of separation of CWD tests by county or cervid type, information related to these tests can only be summarized overall. **Of a total number of 10,262 cervids, 1,323 were tested (12.89%).** None of the tests were positive.

2016

For 2016, there was only one source of information available. This source appears in Appendix C. The following information was available:

- Total number of herds with white tailed deer, total number herds with elk, and total number of herds with other cervid species across all counties
- Total number of elk, total number of white tailed deer, and total number of other species separated by species across all counties
- Total number of CWD tests across all counties, not separated by cervid type

Due to the lack of separation of CWD tests by county or cervid type, information related to these tests can only be summarized overall. **Of a total number of 10,383 cervids, 1,593 were tested (15.34%).** Of these tests, 5 (0.31%) were positive.

Free-Ranging Deer Populations

There were two sources of information for free-ranging white tailed deer (no other cervids). The first was an article entitled "Monitoring Population Trends of White-tailed Deer in Minnesota – 2017" by Norton and Giudice. This article provided land area and estimated pre-fawn deer density for each of 121 out of 130 deer permit areas (DPAs) in Minnesota. This information was used to estimate deer populations in each of the DPAs (see Appendix D for this table). The second source of information was a document entitled "Hartkopf_CWDDataRequest_2014to2016 (002).pdf." This contained information about both hunter-harvested and sick/opportunistic surveillance in each DPA.

The following describes basic information about CWD testing in each of the three years:

- In 2014, 516 out of an estimated population of 644,453[1] deer were tested for CWD (0.080%); there were no positive tests
    - The animals that were tested were from 17 out of 130 DPAs
- In 2015, 25 out of an estimated population of 695,330 deer were tested for CWD (0.004%); there were no positive tests
    - The animals that were tested were from 21 out of 130 DPAs
- In 2016, 3,121 out of an estimated population of 802,443 deer were tested for CWD (0.389%); there were 3 positive tests (0.10% of those tested)
    - The animals that were tested were from 30 out of 130 DPAs

The above results are also determined individually by DPA, and those are given in the key outcomes section of this report.

Key Outcomes

This section includes tables and charts that summarize the outcomes of the CWD surveillance. This information includes inferences about the prevalence of CWD in the farmed and free-ranging cervid populations.

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[1] This and other free-ranging population estimates are likely too low, due to the 9 DPAs that had no population model

Farmed Cervid Population

Table 1 provides a summary of the CWD testing that was completed in all three years (2014-2016).

Table 1. Summary of Farmed Cervid Population CWD Testing

Year	Total Farmed Cervid Population	Tested for CWD		Positive for CWD	
		Number	Percent	Number	Percent (of Tested)
2014	10,361	1,729	16.69%	0	0.00%
2015	10,262	1,323	12.89%	0	0.00%
2016	10,383	1,593	15.34%	5	0.31%

Figure 1 shows the information from Table 1 in graphical form. Note that the number of positive cases in 2016 is so small relative to the total number of farmed cervids that the percentage that tested positive in 2016 is not visible in the graph.
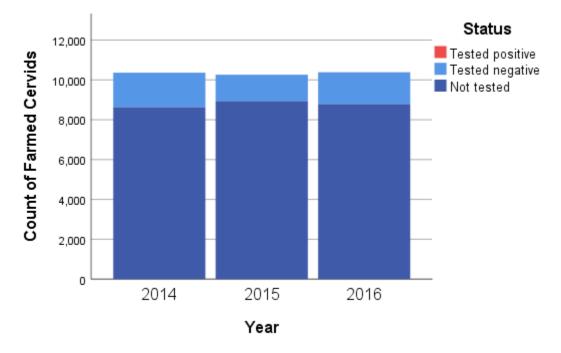

Figure 1. Stacked Bar Chart of Farmed Cervid CWD Testing, 2014-2016

Table 2 provides a summary of some inferences we can make about the prevalence of CWD in the farmed cervid population, based on the numbers provided in Table 1. This table focuses on the potential prevalence of CWD in the population, and provides 95% and 99% upper bounds on the prevalence. For example, we are 95% confident that the prevalence of CWD in the farmed cervid population in 2014 did not exceed 0.16%; we are also 99% confident that the prevalence of CWD in the farmed cervid population in 2014 did not exceed 0.25%.

Table 2. Upper Limits of Disease Prevalence in Farmed Cervid Population

Year	Upper Limits of Disease Prevalence	
	95% Confidence	99% Confidence
2014	0.16%	0.25%
2015	0.21%	0.33%
2016	0.64%	0.79%

Table 3 provides a summary of additional inferences we can make about the prevalence of CWD in the farmed cervid population, based on the numbers provided in Table 1. This table focuses on confidence that the rates of CWD in each year were 1% or less, 5% or less, and 10% or less. For example, we have greater than 99.99% confidence that the prevalence of CWD in 2014 in the farmed cervid population was 1% or less. Overall, we have greater than 99.9% confidence in every year that the prevalence of CWD in the farmed cervid population was 1% or less, based on testing results.

Table 3. Statistical Confidence in Maximum Prevalence Rates

Year	Confidence in Maximum Prevalence		
	1% Prevalence	5% Prevalence	10% Prevalence
2014	>99.99%	>99.99%	>99.99%
2015	>99.99%	>99.99%	>99.99%
2016	99.92%	>99.99%	>99.99%

Free-Ranging Deer Population

Table 4 provides a summary of the CWD testing that was completed in all three years (2014-2016).

Table 4. Summary of Free-Ranging Deer Population CWD Testing

Year	Total Free-Ranging Deer Population	Number of DPAs Included	Tested for CWD		Positive for CWD	
			Number	Percent	Number	Percent (of Tested)
2014	644,453	17	516	0.080%	0	0.00%
2015	695,330	21	25	0.004%	0	0.00%
2016	802,443	30	3,121	0.389%	3	0.10%

Figure 2 shows the information from Table 4 in graphical form. The number of deer tested in each year is so small relative to the population that they are not actually visible in the graph.
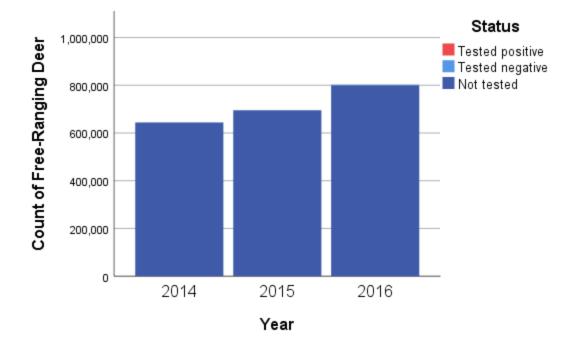
Figure 2. Stacked Bar Chart of Free-Ranging Deer CWD Testing, 2014-2016

Tables 5a-5c are similar to Table 4, but break down the testing according to DPA. Most DPAs are not included in these tables, as there were no deer sampled in the majority of DPAs.

Table 5a. Summary of Free-Ranging Deer Population CWD Testing by DPA, 2014

DPA	Est. Free-Ranging Deer Population	Tested for CWD		Positive for CWD	
		Number	Percent	Number	Percent (of Tested)
176	6447	1	0.016%	0	0.00%
178	9560	1	0.010%	0	0.00%
182	NA	1	NA	0	0.00%
184	19664	1	0.005%	0	0.00%
209	4480	1	0.022%	0	0.00%
221	8346	2	0.024%	0	0.00%
227	8496	1	0.012%	0	0.00%
241	25896	1	0.004%	0	0.00%
288	3125	1	0.032%	0	0.00%
339	2758	1	0.036%	0	0.00%
343	8619	1	0.012%	0	0.00%
346	10812	6	0.055%	0	0.00%
347	7447	3	0.040%	0	0.00%
348	6640	138	2.078%	0	0.00%
349	13720	262	1.910%	0	0.00%
602	NA	10	NA	0	0.00%
601	NA	85	NA	0	0.00%

Table 5b. Summary of Free-Ranging Deer Population CWD Testing by DPA, 2015

DPA	Est. Free-Ranging Deer Population	Tested for CWD		Positive for CWD	
		Number	Percent	Number	Percent (of Tested)
101	4464	1	0.022%	0	0.00%
177	5280	1	0.019%	0	0.00%
180	NA	1	NA	0	0.00%
184	20893	1	0.005%	0	0.00%
197	9550	1	0.010%	0	0.00%
201	1771	1	0.056%	0	0.00%
213	19026	1	0.005%	0	0.00%
225	11124	1	0.009%	0	0.00%
227	9440	1	0.011%	0	0.00%
236	6660	2	0.030%	0	0.00%
253	2922	4	0.137%	0	0.00%
254	3716	1	0.027%	0	0.00%
255	4644	1	0.022%	0	0.00%
281	4600	1	0.022%	0	0.00%
288	3125	1	0.032%	0	0.00%
289	2445	1	0.041%	0	0.00%
294	3430	1	0.029%	0	0.00%
346	10494	1	0.010%	0	0.00%
347	4774	1	0.021%	0	0.00%
348	6972	1	0.014%	0	0.00%
601	NA	1	NA	0	0.00%

Table 5c. Summary of Free-Ranging Deer Population CWD Testing by DPA, 2016

DPA	Est. Free-Ranging Deer Population	Tested for CWD		Positive for CWD	
		Number	Percent	Number	Percent (of Tested)
179	11206	1	0.009%	0	0.00%
214	16066	1	0.006%	0	0.00%
215	15422	1	0.006%	0	0.00%
218	11492	2	0.017%	0	0.00%
219	6256	1	0.016%	0	0.00%
223	6768	1	0.015%	0	0.00%
233	2310	1	0.043%	0	0.00%
236	7400	1	0.014%	0	0.00%
239	11947	1	0.008%	0	0.00%
247	4788	1	0.021%	0	0.00%
253	3896	1	0.026%	0	0.00%
254	3716	1	0.027%	0	0.00%
255	4644	1	0.022%	0	0.00%
267	2832	1	0.035%	0	0.00%
284	2514	1	0.040%	0	0.00%
285	3294	90	2.732%	0	0.00%
291	6400	2	0.031%	0	0.00%
293	5621	1	0.018%	0	0.00%
295	4195	3	0.072%	0	0.00%
341	9792	395	4.034%	0	0.00%
342	6631	251	3.785%	0	0.00%
343	8619	267	3.098%	0	0.00%
344	3610	154	4.266%	0	0.00%
345	6137	222	3.617%	0	0.00%
346	9858	458	4.646%	0	0.00%
347	5208	225	4.320%	0	0.00%
348	7968	382	4.794%	3	0.79%
349	12250	473	3.861%	0	0.00%
601	NA	7	NA	0	0.00%
603	NA	175	NA	0	0.00%

Table 6 provides a summary of some inferences we can make about the prevalence of CWD in the free-ranging deer population, based on the numbers provided in Table 4. This table focuses on the potential prevalence of CWD in the population, and provides 95% and 99% upper bounds on the prevalence (see Table 2 for more explanation). **Note that these inferences assume that the prevalence of CWD is uniform throughout all DPAs, which is not likely to be the case, and this should be interpreted with caution.** Of interest are the high upper limits for disease prevalence in 2015, which indicate it is possible that the disease prevalence could be as high as 11.29% in the population (with 95% confidence). This is due to the very small number of tests that were completed in 2015.

Table 6. Upper Limits of Disease Prevalence in Free-Ranging Deer Population

	Upper Limits of Disease Prevalence	
Year	95% Confidence	99% Confidence
2014	0.58%	0.89%
2015	11.29%	16.82%
2016	0.25%	0.32%

Tables 7a-7c are similar to Table 6, but break down these limits individually for DPAs. These upper limits tend to be much higher than for the overall population, because the number of deer tested in any one DPA is generally quite small.

Table 7a. Upper Limits of Disease Prevalence in Free-Ranging Deer Population by DPA, 2014

	Upper Limits of Disease Prevalence	
DPA	95% Confidence	99% Confidence
176	95.0%	99.0%
178	95.0%	99.0%
182	NA	NA
184	95.0%	99.0%
209	95.0%	99.0%
221	77.6%	90.0%
227	95.0%	99.0%
241	95.0%	99.0%
288	95.0%	99.0%
339	95.0%	99.0%
343	95.0%	99.0%
346	39.3%	53.6%
347	63.2%	78.4%
348	2.1%	3.3%
349	1.1%	1.7%
602	NA	NA
601	NA	NA

Table 7b. Upper Limits of Disease Prevalence in Free-Ranging Deer Population by DPA, 2015

DPA	Upper Limits of Disease Prevalence	
	95% Confidence	99% Confidence
101	95.0%	99.0%
177	95.0%	99.0%
180	NA	NA
184	95.0%	99.0%
197	95.0%	99.0%
201	95.0%	99.0%
213	95.0%	99.0%
225	95.0%	99.0%
227	95.0%	99.0%
236	77.6%	90.0%
253	52.7%	68.3%
254	95.0%	99.0%
255	95.0%	99.0%
281	95.0%	99.0%
288	95.0%	99.0%
289	95.0%	99.0%
294	95.0%	99.0%
346	95.0%	99.0%
347	95.0%	99.0%
348	95.0%	99.0%
601	NA	NA

Table 7c. Upper Limits of Disease Prevalence in Free-Ranging Deer Population by DPA, 2016

	Upper Limits of Disease Prevalence	
DPA	95% Confidence	99% Confidence
179	95.0%	99.0%
214	95.0%	99.0%
215	95.0%	99.0%
218	77.6%	90.0%
219	95.0%	99.0%
223	95.0%	99.0%
233	95.0%	99.0%
236	95.0%	99.0%
239	95.0%	99.0%
247	95.0%	99.0%
253	95.0%	99.0%
254	95.0%	99.0%
255	95.0%	99.0%
267	95.0%	99.0%
284	95.0%	99.0%
285	3.2%	4.9%
291	77.6%	90.0%
293	95.0%	99.0%
295	63.1%	78.5%
341	0.7%	1.1%
342	1.2%	1.8%
343	1.1%	1.7%
344	1.9%	2.9%
345	1.3%	2.0%
346	0.6%	1.0%
347	1.3%	2.0%
348	2.0%	2.6%
349	0.6%	1.0%
601	NA	NA
603	NA	NA

Table 8 provides a summary of additional inferences we can make about the prevalence of CWD in the free-ranging deer population, based on the numbers provided in Table 4. This table focuses on our confidence that the rates of CWD in each year were 1% or less, 5% or less, and 10% or less. Review Table 3 for additional guidance on interpretation. **Note that these inferences assume that the prevalence of CWD is uniform throughout all DPAs, which is not likely to be the case, and this should be interpreted with caution.**

Table 8. Statistical Confidence in Maximum Prevalence Rates

| Year | Confidence in Maximum Prevalence | | |
	1% Prevalence	5% Prevalence	10% Prevalence
2014	99.44%	>99.99%	>99.99%
2015	22.22%	72.26%	92.82%
2016	>99.99%	>99.99%	>99.99%

Tables 9a-9c are similar to Table 8, but break down these confidence calculations individually for DPAs. We tend to have much less confidence than for the overall population, because the number of deer tested in any one DPA is generally quite small.

Table 9a. Statistical Confidence in Maximum Prevalence Rates by DPA, 2014

| DPA | Confidence in Maximum Prevalence | | |
	1% Prevalence	5% Prevalence	10% Prevalence
176	1.0%	5.0%	10.0%
178	1.0%	5.0%	10.0%
182	NA	NA	NA
184	1.0%	5.0%	10.0%
209	1.0%	5.0%	10.0%
221	2.0%	9.7%	19.0%
227	1.0%	5.0%	10.0%
241	1.0%	5.0%	10.0%
288	1.0%	5.0%	10.0%
339	1.0%	5.0%	10.0%
343	1.0%	5.0%	10.0%
346	5.8%	26.5%	46.9%
347	3.0%	14.3%	27.1%
348	75.2%	99.9%	>99.9%
349	93.0%	>99.9%	>99.9%
602	NA	NA	NA
601	NA	NA	NA

Table 9b. Statistical Confidence in Maximum Prevalence Rates by DPA, 2015

DPA	Confidence in Maximum Prevalence		
	1% Prevalence	5% Prevalence	10% Prevalence
101	1.0%	5.0%	10.0%
177	1.0%	5.0%	10.0%
180	NA	NA	NA
184	1.0%	5.0%	10.0%
197	1.0%	5.0%	10.0%
201	1.0%	5.0%	10.0%
213	1.0%	5.0%	10.0%
225	1.0%	5.0%	10.0%
227	1.0%	5.0%	10.0%
236	2.0%	9.8%	19.0%
253	3.9%	18.5%	34.4%
254	1.0%	5.0%	10.0%
255	1.0%	5.0%	10.0%
281	1.0%	5.0%	10.0%
288	1.0%	5.0%	10.0%
289	1.0%	5.0%	10.0%
294	1.0%	5.0%	10.0%
346	1.0%	5.0%	10.0%
347	1.0%	5.0%	10.0%
348	1.0%	5.0%	10.0%
601	NA	NA	NA

Table 9c. Statistical Confidence in Maximum Prevalence Rates by DPA, 2016

DPA	Confidence in Maximum Prevalence		
	1% Prevalence	5% Prevalence	10% Prevalence
179	1.0%	5.0%	10.0%
214	1.0%	5.0%	10.0%
215	1.0%	5.0%	10.0%
218	2.0%	9.7%	19.0%
219	1.0%	5.0%	10.0%
223	1.0%	5.0%	10.0%
233	1.0%	5.0%	10.0%
236	1.0%	5.0%	10.0%
239	1.0%	5.0%	10.0%
247	1.0%	5.0%	10.0%
253	1.0%	5.0%	10.0%
254	1.0%	5.0%	10.0%
255	1.0%	5.0%	10.0%
267	1.0%	5.0%	10.0%
284	1.0%	5.0%	10.0%
285	59.0%	99.1%	100.0%
291	2.0%	9.8%	19.0%
293	1.0%	5.0%	10.0%
295	2.9%	14.2%	27.1%
341	98.2%	>99.9%	>99.9%
342	92.3%	>99.9%	>99.9%
343	93.4%	>99.9%	>99.9%
344	79.3%	>99.9%	>99.9%
345	89.6%	>99.9%	>99.9%
346	99.1%	>99.9%	>99.9%
347	90.1%	>99.9%	>99.9%
348	52.9%	>99.9%	>99.9%
349	99.2%	>99.9%	>99.9%
601	NA	NA	NA
603	NA	NA	NA

Brief Comments

It is clear from comparing Table 1 to Table 4 (and Figure 1 to Figure 2) that the sampling rates among farmed cervids are much greater than those among free-ranging deer. For farmed cervids, we can be highly confident that there are very low rates of CWD in the population. That is not the case for free-ranging deer, where we are relying on much less information. Estimates at the state level are dubious, as it is unlikely that there is one constant rate of CWD across all DPAs. Many DPAs remain unsampled, and with the exception of a few more heavily-sampled DPAs, we have scant information and cannot make any precise conclusions about CWD rates in free-ranging deer.

Appendix A: 2014 Sources for Farmed Cervids
Source 1: Document entitled "MN Farmed Cervidae Numbers November 2014.docx"

CER Total Herds by County	
CountOfHerd id	county
4	Aitkin
8	Anoka
4	Becker
4	Beltrami
8	Benton
2	Big Stone
6	Blue Earth
6	Brown
2	Carlton
6	Carver
8	Cass
3	Chippewa
8	Chisago
4	Clearwater
3	Cottonwood
9	Crow Wing
5	Dakota
2	Dodge
7	Douglas
3	Faribault
15	Fillmore
4	Freeborn
7	Goodhue
3	Hennepin
8	Houston
7	Hubbard
10	Isanti
8	Itasca
5	Jackson
7	Kanabec
8	Kandiyohi
2	Kittson
1	Koochiching

CER Total Herds by County	
CountOfHerd id	county
2	Lac Qui Parle
2	Lake Of The Woods
3	Le Sueur
4	Lincoln
2	Lyon
2	Mahnomen
3	Marshall
8	Mcleod
5	Meeker
9	Mille Lacs
30	Morrison
2	Mower
1	Murray
2	Nicollet
14	Olmsted
10	Otter Tail
7	Pine
1	Pipestone
5	Polk
1	Ramsey
4	Redwood
5	Renville
6	Rice
10	Roseau
4	Scott
9	Sherburne
5	Sibley
12	St Louis
32	Stearns
8	Steele
1	Stevens
2	Swift
18	Todd
2	Traverse
16	Wabasha
4	Wadena
3	Waseca

12/20/18

CER Total Herds by County	
CountOfHerd id	county
3	Washington
1	Watonwan
14	Winona
20	Wright
3	Yellow Medicine

	Elk	White-tailed Deer	Other Cervid Species	All Cervids
Total Number of Herds	134	323	55	482
Total Number of Animals	3926	5797	638	10361
Total Number of CWD Test Charts in 2014				1020

Source 2: Document Entitled "CWD Tests Farmed Cervidae 2014-2016.pdf"

Testing

Chronic Wasting Disease	
Negative	1700
Location	29
Positive	0
Total	1729

Tuberculosis	
Negative	2415
Suspect	3
Positive	2
Total	2420

Brucellosis	
Negative	1548
Positive	0
Total	1548

Appendix B: 2015 Sources for Farmed Cervids
Source 1: Document Entitled "CWD Tests Farmed Cervidae 2014-2016.pdf"

State of Minnesota Program Report
Farmed Cervidae

January 1, 2015 - December 31, 2015

	Testing						
Chronic Wasting Disease		**Tuberculosis**		**Brucellosis**	
Negative	1283	Negative	2222	Negative	1825
Location	40	Suspect	11	Positive	0
Positive	0	Positive	0	**Total**	1825
Total	1323	**Total**	2233		

Source 2: Document Entitled "2015 Farmed Cervidae Program Report.docx"
Note that the dates on this document run from January 1, 2015 to January 9, 2016.

State of Minnesota Program Report
Farmed Cervidae

January 1, 2015 - January 9, 2016

Herds			
Total Registered Herds	468	Herds with Elk	129
Inspections Conducted	484	Herds with White-tailed Deer	327
		Herds with Other Cervid Species	57

Program Participation	
CWD Level 6 Certified	165
CWD Level 6	277
CWD Level 5	6
CWD Level 4	2
CWD Level 3	5
CWD Level 2	6
CWD Level 1	5
Tuberculosis Accredited	171
Tuberculosis - First WHT	7
Brucellosis Certified	95
Brucellosis - First WHT	13

Inventory	
Caribou	9
Elk	3793
Fallow deer	220
Moose	9
Mule deer	39
Muntjac	34
Pere David's deer	1
Pudu	1
Red deer	210
Reindeer	100
Sika Deer	54
White-tailed deer	5792
Total	10262

Testing					
Chronic Wasting Disease		Tuberculosis		Brucellosis	
Negative	1109	Negative	2175	Negative	1821
Location	31	Suspect	11	Positive	0
Positive	0	Positive	0	Total	1821
Total	1140	Total	2186		

Appendix C: 2016 Source for Farmed Cervids
Document Entitled "CWD Tests Farmed Cervidae 2014-2016.pdf"

State of Minnesota Program Report
Farmed Cervidae
January 1, 2016 - December 31, 2016

Herds			
Total Registered Herds	449	Herds with Elk	126
Inspections Conducted	567	Herds with White-tailed Deer	315
		Herds with Other Cervid Species	55

Program Participation		Inventory	
CWD Level 6 Certified	161	Caribou	8
CWD Level 6	258	Elk	3885
CWD Level 5	2	Fallow deer	244
CWD Level 4	8	Moose	7
CWD Level 3	6	Mule deer	33
CWD Level 2	1	Muntjac	34
CWD Level 1	7	Red deer	224
		Reindeer	88
Tuberculosis Accredited	177	Sika Deer	56
Tuberculosis - First WHT	5	Unknown/Deer breed not specified	55
Brucellosis Certified	128	White-tailed deer	5725
Brucellosis - First WHT	20	Total	10383

Testing					
Chronic Wasting Disease		**Tuberculosis**		**Brucellosis**	
Negative	1505	Negative	1236	Negative	3679
Location	83	Suspect	0	Positive	0
Positive	5	Positive	0	Total	3679
Total	1593	Total	1236		

Appendix D: Estimated Populations of Free-Ranging Deer

DPA	Land Area (square miles)	Pre-Fawn Deer Density (per square mile)			Pre-Fawn Deer Population		
		2014	2015	2016	2014	2015	2016
101	496	8	9	11	3,968	4,464	5,456
103	1820	3	3	4	5,460	5,460	7,280
105	740	10	10	13	7,400	7,400	9,620
108	1651	5	5	7	8,255	8,255	11,557
110	529	11	11	14	5,819	5,819	7,406
111	1438	2	2	3	2,876	2,876	4,314
114	116						
117	927						
118	1220	4	4	4	4,880	4,880	4,880
119	770	5	6	7	3,850	4,620	5,390
126	942	3	3	3	2,826	2,826	2,826
130	746	3	3	4	2,238	2,238	2,984
131	899	2	2	2	1,798	1,798	1,798
132	482	4	5	6	1,928	2,410	2,892
133	352	7	8	9	2,464	2,816	3,168
152	61	11	13	16	671	793	976
155	593	15	17	21	8,895	10,081	12,453
156	825	10	10	13	8,250	8,250	10,725
157	673	20	21	23	13,460	14,133	15,479
159	571	12	13	16	6,852	7,423	9,136
169	1124	9	10	13	10,116	11,240	14,612
171	701	10	12	14	7,010	8,412	9,814
172	687	19	21	26	13,053	14,427	17,862
173	584	8	8	10	4,672	4,672	5,840
176	921	7	8	10	6,447	7,368	9,210
177	480	11	11	14	5,280	5,280	6,720
178	1195	8	8	11	9,560	9,560	13,145
179	862	11	11	13	9,482	9,482	11,206
181	629	8	9	12	5,032	5,661	7,548
182	267						
183	663	11	12	15	7,293	7,956	9,945
184	1229	16	17	21	19,664	20,893	25,809
197	955	9	10	12	8,595	9,550	11,460
199	148	7	8	10	1,036	1,184	1,480
201	161	9	11	13	1,449	1,771	2,093
203	118	28	24	32	3,304	2,832	3,776
208	379	4	5	7	1,516	1,895	2,653
209	640	7	7	9	4,480	4,480	5,760
210	615	8	8	9	4,920	4,920	5,535

213	1057	16	18	20	16,912	19,026	21,140
214	554	25	27	29	13,850	14,958	16,066
215	701	18	20	22	12,618	14,020	15,422
218	884	11	12	13	9,724	10,608	11,492
219	391	13	14	16	5,083	5,474	6,256
221	642	13	14	16	8,346	8,988	10,272
222	413	14	15	17	5,782	6,195	7,021
223	376	14	16	18	5,264	6,016	6,768
224	47	18	21	25	846	987	1,175
225	618	16	18	20	9,888	11,124	12,360
227	472	18	20	21	8,496	9,440	9,912
229	284	10	12	14	2,840	3,408	3,976
230	452	3	3	4	1,356	1,356	1,808
232	377	6	6	8	2,262	2,262	3,016
233	385	5	5	6	1,925	1,925	2,310
234	636	2	2	3	1,272	1,272	1,908
235	34						
236	370	16	18	20	5,920	6,660	7,400
237	728	2	3	3	1,456	2,184	2,184
238	95						
239	919	12	12	13	11,028	11,028	11,947
240	643	20	22	24	12,860	14,146	15,432
241	996	26	27	29	25,896	26,892	28,884
242	214	20	20	24	4,280	4,280	5,136
246	840	16	18	22	13,440	15,120	18,480
247	228	17	19	21	3,876	4,332	4,788
248	214	15	15	16	3,210	3,210	3,424
249	502	16	16	19	8,032	8,032	9,538
250	713	3	3	3	2,139	2,139	2,139
251	55						
252	715	3	3	4	2,145	2,145	2,860
253	974	3	3	4	2,922	2,922	3,896
254	929	4	4	4	3,716	3,716	3,716
255	774	5	6	6	3,870	4,644	4,644
256	654	7	7	8	4,578	4,578	5,232
257	412	8	8	10	3,296	3,296	4,120
258	343	18	20	22	6,174	6,860	7,546
259	490	16	19	22	7,840	9,310	10,780
260	1249	3	4	5	3,747	4,996	6,245
261	795	3	4	5	2,385	3,180	3,975
262	677	3	3	4	2,031	2,031	2,708
263	512	8	10	13	4,096	5,120	6,656
264	669	12	14	17	8,028	9,366	11,373
265	494	9	10	12	4,446	4,940	5,928

266	617	5	6	7	3,085	3,702	4,319
267	472	4	5	6	1,888	2,360	2,832
268	228	8	9	11	1,824	2,052	2,508
269	650	3	3	4	1,950	1,950	2,600
270	748	3	3	3	2,244	2,244	2,244
271	632	3	3	3	1,896	1,896	1,896
272	531	2	3	3	1,062	1,593	1,593
273	571	6	7	8	3,426	3,997	4,568
274	354	6	6	7	2,124	2,124	2,478
275	764	4	4	4	3,056	3,056	3,056
276	542	9	10	11	4,878	5,420	5,962
277	812	13	14	15	10,556	11,368	12,180
278	402	6	6	7	2,412	2,412	2,814
279	344	4	4	4	1,376	1,376	1,376
280	675	3	3	3	2,025	2,025	2,025
281	575	7	8	9	4,025	4,600	5,175
282	778	2	2	3	1,556	1,556	2,334
283	613	4	4	4	2,452	2,452	2,452
284	838	3	3	3	2,514	2,514	2,514
285	549	5	6	6	2,745	3,294	3,294
286	446	5	5	6	2,230	2,230	2,676
287	46						
288	625	5	5	5	3,125	3,125	3,125
289	815	2	3	3	1,630	2,445	2,445
290	662	5	6	6	3,310	3,972	3,972
291	800	6	7	8	4,800	5,600	6,400
292	479	10	12	14	4,790	5,748	6,706
293	511	8	9	11	4,088	4,599	5,621
294	686	4	5	5	2,744	3,430	3,430
295	839	4	5	5	3,356	4,195	4,195
296	667	3	4	5	2,001	2,668	3,335
297	438	3	3	4	1,314	1,314	1,752
298	618	9	11	14	5,562	6,798	8,652
299	386	5	6	6	1,930	2,316	2,316
338	454	6	7	8	2,724	3,178	3,632
339	394	7	7	8	2,758	2,758	3,152
341	612	15	15	16	9,180	9,180	9,792
342	349	17	18	19	5,933	6,282	6,631
343	663	13	13	13	8,619	8,619	8,619
344	190	20	19	19	3,800	3,610	3,610
345	323	15	17	19	4,845	5,491	6,137
346	318	34	33	31	10,812	10,494	9,858
347	434	11	11	12	4,774	4,774	5,208
348	332	20	21	24	6,640	6,972	7,968

349	490	28	27	25	13,720	13,230	12,250
601	1625						
603	372						
All					644,453	695,330	802,443