

## CHRONIC WASTING DISEASE IN COLORADO: SUMMARY OF 2005–2006 SURVEY DATA

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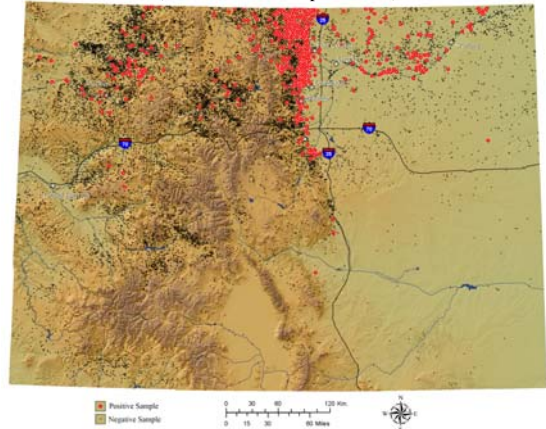
Chronic wasting disease (CWD), a naturally-occurring prion disease of North American cervids (species in the “deer” family), has emerged as an important wildlife health issue. CWD has been endemic in free-ranging cervid populations in northcentral Colorado and southeastern Wyoming since at least the early 1980s, and has been detected in a number of other states and provinces over the last 5 years.

Surveys conducted during 2002–2005 have shown that CWD is widely distributed in Colorado. At least one case of CWD has been detected in 19 of 55 deer data analysis units (DAUs) (top map; red dots are CWD cases, black dots are negative samples) and 11 of 46 elk DAUs (bottom map red dots are CWD cases, black dots are negative samples). Much of the change in the known distribution of CWD in Colorado since 2002 has probably been due to improved surveillance efforts rather than true geographic spread. Although understanding about the true distribution of CWD in Colorado has improved substantially in Colorado since 2002, surveillance data from many DAUs in the southern part of the state presently are insufficient to assure that CWD is truly absent from those areas.

Data from surveys conducted in conjunction with hunting seasons and from sampling of clinically ill and vehicle-killed cervids have provided a few new insights into CWD distribution and natural host range in Colorado during 2005–2006. CWD was detected for the first time in three more deer DAUs (D34, D47, D55), representing southern and southeastern extensions of known distribution in eastern Colorado. These findings helped to refine understanding about where CWD occurs in Colorado, and also illustrated the value of using several surveillance strategies to monitor CWD distribution: one of the three new DAUs was detected by sampling a sick or “suspect” deer, one by sampling a vehicle-kill, and the third by sampling a harvest submission. Within CWD-infected DAUs, estimates of prevalence from 2005–2006 harvest survey data varied from <1–10% among mule deer and <1–2.8% among elk (see table below). In addition to improved understanding about the geographic distribution of CWD, this year’s survey results also extended knowledge about the natural host range of CWD: in September 2005, a male moose (*Alces alces*) harvested on the west side of the Never Summer Range in northcentral Colorado was diagnosed with CWD. The finding that moose are naturally susceptible to CWD confirmed suspicions arising from an experimental study conducted in Wyoming wherein a moose was infected with CWD after oral inoculation with infectious brain tissue. Whether CWD is maintained in moose populations or is a sporadic disease remains to be determined.



Minimum distribution of CWD in Colorado mule deer (1996–2005, all sample sources)



Minimum distribution of CWD in Colorado elk (1996–2005, all sample sources)

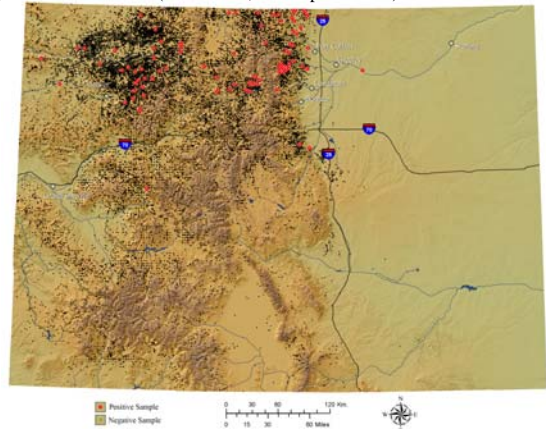


Table. Chronic wasting disease (CWD) prevalence estimates by species and data analysis unit (DAU) for adult elk, mule deer, and white-tailed deer (harvest data only, Colorado, winter 2005-2006). Shaded DAUs had one or more cases in 2005-2006, as determined by all forms of surveillance.

Species	DAU	Number tested	Prevalence	95% Confidence Interval	
				Lower	Upper
Elk	E-1	73	0.0%	.	.
	E-2	1107	0.2%	0.0%	0.4%
	E-3	230	0.0%	.	.
	E-4	182	2.8%	0.4%	5.1%
	E-6	1457	0.2%	0.0%	0.4%
	E-7	156	0.0%	.	.
	E-8	194	0.5%	0.0%	1.5%
	E-9	195	2.6%	0.3%	4.8%
	E-10	100	1.0%	0.0%	3.0%
	E-11	11	0.0%	.	.
	E-12	106	0.0%	.	.
	E-13	226	0.0%	.	.
	E-14	231	0.4%	0.0%	1.3%
	E-15	38	0.0%	.	.
	E-16	104	0.0%	.	.
	E-17	37	0.0%	.	.
	E-18	59	0.0%	.	.
	E-19	18	0.0%	.	.
	E-20	66	0.0%	.	.
	E-21	53	0.0%	.	.
	E-22	63	0.0%	.	.
	E-23	97	0.0%	.	.
	E-24	53	0.0%	.	.
	E-25	48	0.0%	.	.
	E-26	36	0.0%	.	.
	E-27	18	0.0%	.	.
	E-28	19	0.0%	.	.
	E-30	34	0.0%	.	.
	E-31	77	0.0%	.	.
	E-32	19	0.0%	.	.
	E-33	45	0.0%	.	.
	E-34	26	0.0%	.	.
E-35	54	0.0%	.	.	
E-38	43	0.0%	.	.	
E-39	90	0.0%	.	.	
E-40	2	0.0%	.	.	
E-41	27	0.0%	.	.	
E-43	72	0.0%	.	.	
E-46	1	0.0%	.	.	
E-47	3	0.0%	.	.	
E-51	58	0.0%	.	.	
E-52	32	0.0%	.	.	

E-53	4	0.0%	.	.
E-54	1	0.0%	.	.
E-99	4	0.0%	.	.
E-999	10	0.0%	.	.

Mule deer	D-1	10	0.0%	.	.
	D-2	829	0.6%	0.1%	1.1%
	D-3	144	0.7%	0.0%	2.1%
	D-4	320	6.6%	3.8%	9.3%
	D-5	59	5.1%	0.0%	10.9%
	D-6	15	0.0%	.	.
	D-7	744	1.6%	0.7%	2.5%
	D-8	332	0.0%	.	.
	D-9	371	0.3%	0.0%	0.8%
	D-10	300	8.7%	5.5%	11.9%
	D-11	37	0.0%	.	.
	D-12	98	0.0%	.	.
	D-13	35	0.0%	.	.
	D-14	8	0.0%	.	.
	D-15	19	0.0%	.	.
	D-16	127	2.4%	0.0%	5.0%
	D-17	183	0.6%	0.0%	1.6%
	D-18	17	0.0%	.	.
	D-19	45	0.0%	.	.
	D-20	25	0.0%	.	.
	D-21	342	0.0%	.	.
	D-22	546	0.0%	.	.
	D-24	41	0.0%	.	.
	D-25	378	0.0%	.	.
	D-26	4	0.0%	.	.
	D-27	165	0.0%	.	.
	D-28	8	0.0%	.	.
	D-29	20	0.0%	.	.
	D-30	137	0.0%	.	.
	D-31	23	0.0%	.	.
	D-32	4	0.0%	.	.
	D-33	5	0.0%	.	.
	D-34	35	0.0%	.	.
	D-35	7	0.0%	.	.
	D-36	8	0.0%	.	.
	D-37	1	0.0%	.	.
	D-38	32	0.0%	.	.
	D-39	28	0.0%	.	.
	D-40	38	0.0%	.	.
	D-41	41	0.0%	.	.
	D-42	36	0.0%	.	.
	D-43	57	0.0%	.	.
	D-44	30	10.0%	0.0%	21.4%
	D-45	12	0.0%	.	.
	D-46	12	0.0%	.	.

	D-47	4	0.0%	.	.
	D-48	10	0.0%	.	.
	D-49	45	0.0%	.	.
	D-50	68	0.0%	.	.
	D-51	77	0.0%	.	.
	D-52	31	0.0%	.	.
	D-53	7	0.0%	.	.
	D-54	44	0.0%	.	.
	D-55	27	3.7%	0.0%	11.3%

White-tailed deer	D-2	1	0.0%	.	.
	D-4	9	11.1%	0.0%	36.7%
	D-5	12	8.3%	0.0%	26.7%
	D-9	6	0.0%	.	.
	D-10	2	0.0%	.	.
	D-22	1	0.0%	.	.
	D-28	6	0.0%	.	.
	D-34	2	0.0%	.	.
	D-43	1	0.0%	.	.
	D-44	100	3.0%	0.0%	6.4%
	D-47	14	0.0%	.	.
	D-48	3	0.0%	.	.
	D-49	1	0.0%	.	.
	D-54	4	0.0%	.	.
	D-55	22	0.0%	.	.



