

## **CHRONIC WASTING DISEASE IN COLORADO, 2004–2006**

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Chronic wasting disease (CWD), a naturally-occurring prion disease of North American cervids (species of the “deer” family), has emerged recently 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.

Surveys conducted during the “biological years” 2004–2006 (= June 2004–June 2007) continued to show that CWD is relatively well-established and widely distributed in Colorado. Through June 2007, at least one case of CWD had been detected in 20 of 55 deer data analysis units (DAUs), 12 of 46 elk DAUs, and 2 of 4 moose DAUs. Within CWD-infected DAUs, pooled estimates of prevalence from rolling three-year (2004–2006) summaries of harvest survey data varied from <1–10% among mule deer, <1–2.8% among elk, and 1–2.7% among moose (see Table below).

Much of the change in the known distribution of CWD in Colorado since 2002 is attributable to improved surveillance rather than true geographic spread. Although understanding about the true distribution of CWD in Colorado has improved substantially in Colorado in recent years, surveillance data from many DAUs in the southern part of the state presently are insufficient (fewer than 300 samples per DAU) to assure the likely absence of additional foci in those areas (see Table below). More effective and efficient survey methods are needed to assure long-term sustainability of CWD surveillance efforts in Colorado and elsewhere.

Table. Chronic wasting disease (CWD) prevalence estimates in Colorado, by data analysis unit (DAU), for adult elk, mule deer, white-tailed deer, and moose. Data represent “rolling” three-year prevalence estimates (2004–2006) and 95% confidence intervals (CI) from harvest survey samples. Shaded DAUs have yielded at least one case of CWD in the respective species, but not necessarily from harvest surveys during 2004–2006.

Species	DAU <sup>1</sup>	GMUs <sup>2</sup> included in DAU	Number tested	Prevalence	95% CI <sup>3</sup>	
					Lower	Upper
Elk	E-1	2,201	187	0.0%	.	.
	E-2	3,4,5,14,214,301,441	2925	0.2%	0.1%	0.4%
	E-3	6,16,17,161,171	617	0.0%	.	.
	E-4	7,8,9,19,191	556	2.0%	0.8%	3.1%
	E-6	11,12,13,23,24,25,26,33,34,131,211,231	4154	0.3%	0.1%	0.5%
	E-7	15,17	370	0.3%	0.0%	0.8%
	E-8	18,181	522	1.3%	0.4%	2.3%
	E-9	20	571	2.8%	1.4%	4.2%
	E-10	21,22,30,31,32	286	0.3%	0.0%	1.0%
	E-11	82	26	0.0%	.	.
	E-12	35,36	255	0.0%	.	.
	E-13	28,37,371	579	0.0%	.	.
	E-14	41,42,52,411,421,521	597	0.2%	0.0%	0.5%
	E-15	43,471	95	0.0%	.	.
	E-16	44,45,47,444	216	0.0%	.	.
	E-17	48,56,481,561	62	0.0%	.	.
	E-18	50,500,501	115	0.0%	.	.
	E-19	40	39	0.0%	.	.
	E-20	61,62	184	0.0%	.	.
	E-21	10	130	0.0%	.	.
	E-22	49,57,58	102	0.0%	.	.
	E-23	59,511,512,581,591	149	0.0%	.	.
	E-24	70,71,72,73,711	132	0.0%	.	.
	E-25	66,67	117	0.0%	.	.
	E-26	68,681	76	0.0%	.	.
	E-27	86,691,861	50	0.0%	.	.
	E-28	69,84	62	0.0%	.	.
	E-30	74,741	91	0.0%	.	.
	E-31	75,77,78,751,771	221	0.0%	.	.
	E-32	80,81	58	0.0%	.	.
	E-33	83,85,140,851	96	0.0%	.	.
	E-34	76,79	39	0.0%	.	.
	E-35	64,65	130	0.0%	.	.
	E-38	29,38	110	0.0%	.	.
	E-39	39,46,391,461	282	0.4%	0.0%	1.0%
	E-40	60	6	0.0%	.	.
	E-41	54	63	0.0%	.	.
	E-43	55,551	113	0.0%	.	.

(Elk cont.)	E-45	132,139,145	0	0.0%	.	.
	E-46	128	2	0.0%	.	.
	E-47	1	9	0.0%	.	.
	E-51	51,104,105,106,110,111	124	0.0%	.	.
	E-52	53,63	81	0.0%	.	.
	E-53	133,134,135,141,142	7	0.0%	.	.
	E-54	136,137,138,143,144,147	4	0.0%	.	.
	E-99	(all other GMUs)	26	0.0%	.	.

<b>MULE DEER (MD)</b>						
	D-1	1,2,201	21	0.0%	.	.
	D-2	3,4,5,14,214,301,441	2306	0.6%	0.3%	0.9%
	D-3	6,16,17,161,171	401	1.5%	0.3%	2.7%
	D-4	7,8,9,19,191	822	8.8%	6.8%	10.7%
	D-5	87,88,89,90,95	184	8.2%	4.2%	12.1%
	D-6	10	79	2.5%	0.0%	6.0%
	D-7	11,12,13,22,23,24,131,211,231	2118	1.3%	0.8%	1.8%
	D-8	15,35,36,45	801	0.4%	0.0%	0.8%
	D-9	18,27,28,37,181,371	1201	0.8%	0.3%	1.3%
	D-10	20	760	10.0%	7.9%	12.1%
	D-11	21,30	97	0.0%	.	.
	D-12	41,42,421	333	0.0%	.	.
	D-13	43,47,471	128	0.0%	.	.
	D-14	44	30	0.0%	.	.
	D-15	48,56,481,561	47	0.0%	.	.
	D-16	49,57,58,59,581,591	157	1.9%	0.0%	4.1%
	D-17	39,46,51,391,461	418	1.4%	0.3%	2.6%
	D-18	40	74	0.0%	.	.
	D-19	61,62	145	0.0%	.	.
	D-20	53	51	0.0%	.	.
	D-21	54	395	0.0%	.	.
	D-22	55,551	555	0.0%	.	.
	D-23	60	7	0.0%	.	.
	D-24	70,71,711	129	0.0%	.	.
	D-25	66,67	426	0.0%	.	.
	D-26	68,681,682	16	0.0%	.	.
	D-27	29,38	382	2.6%	1.0%	4.2%
	D-28	122,125,126,127,130,132,137,138,139,146	18	0.0%	.	.
	D-29	72,73	40	0.0%	.	.
	D-30	75,77,78,751,771	264	0.0%	.	.
	D-31	83	21	0.0%	.	.
	D-32	85,140,851	13	0.0%	.	.
	D-33	143,144,145	6	0.0%	.	.
	D-34	69,84,86,691,861	108	0.0%	.	.
	D-35	80,81	11	0.0%	.	.
	D-36	76,79,791	7	0.0%	.	.
	D-37	82	1	0.0%	.	.
	D-38	50,500,501	71	0.0%	.	.

(MD cont.)	D-39	63	111	0.0%	.	.
	D-40	64,65	81	0.0%	.	.
	D-41	31,32	94	0.0%	.	.
	D-42	33	81	0.0%	.	.
	D-43	25,26,34	179	0.6%	0.0%	1.7%
	D-44	91,92,94,96,951	116	8.6%	3.5%	13.8%
	D-45	128,129,133,134,135,136,141,142, 147	29	0.0%	.	.
	D-46	107,112,113,114,115,120,121	32	0.0%	.	.
	D-47	103,109,116,117	39	0.0%	.	.
	D-48	110,111,118,119,123,124	23	0.0%	.	.
	D-49	104,105,106	91	0.0%	.	.
	D-50	511,512	98	0.0%	.	.
	D-51	52,411,521	180	0.0%	.	.
	D-52	74,741	77	0.0%	.	.
	D-53	444	37	0.0%	.	.
	D-54	93,97,98,99,100	104	0.0%	.	.
	D-55	101,102	55	1.8%	0.0%	5.4%

<b>WHITE-TAILED DEER (WTD)</b>	D-2	3,4,5,14,214,301,441	2	0.0%	.	.
	D-3	6,16,17,161,171	1	0.0%	.	.
	D-4	7,8,9,19,191	22	4.5%	0.0%	13.5%
	D-5	87,88,89,90,95	34	5.9%	0.0%	13.9%
	D-7	11,12,13,22,23,24,131,211,231	1	0.0%	.	.
	D-8	15,35,36,45	1	0.0%	.	.
	D-9	18,27,28,37,181,371	6	0.0%	.	.
	D-10	20	4	0.0%	.	.
	D-16	49,57,58,59,581,591	1	0.0%	.	.
	D-17	39,46,51,391,461	1	0.0%	.	.
	D-20	53	2	0.0%	.	.
	D-22	55,551	0	.	.	.
	D-27	29,38	3	0.0%	.	.
	D-28	122,125,126,127,130,132,137,138, 139,146	11	0.0%	.	.
	D-33	143,144,145	0	.	.	.
	D-34	69,84,86,691,861	0	.	.	.
	D-43	25,26,34	2	0.0%	.	.
	D-44	91,92,94,96,951	292	3.4%	1.3%	5.5%
	D-45	128,129,133,134,135,136,141,142, 147	2	0.0%	.	.
	D-46	107,112,113,114,115,120,121	2	0.0%	.	.
	D-47	103,109,116,117	37	0.0%	.	.
	D-48	110,111,118,119,123,124	9	0.0%	.	.
	D-49	104,105,106	4	0.0%	.	.
	D-50	511,512	0	.	.	.
	D-52	74,741	1	0.0%	.	.
	D-54	93,97,98,99,100	10	0.0%	.	.
	D-55	101,102	42	0.0%	.	.

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**Moose**

M-1	6,16,17,161,171	208	1.0%	0.0%	2.3%
M-2	7,8,19	37	2.7%	0.0%	7.9%
M-3	18,28,36,37,371	63	0.0%	.	.
M-4	66,76,77,751	38	0.0%	.	.

<sup>1</sup>DAU = data analysis unit.

<sup>2</sup>GMU = game management unit.

<sup>3</sup>CI = confidence interval.