CHRONIC WASTING DISEASE IN COLORADO, 2006–2008

Colorado Division of Wildlife
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Chronic wasting disease (CWD), a naturally-occurring prion disease of North American cervids (species of the "deer" family), is 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" 2006–2008 (= June 2006–June 2009) continued to show that CWD is relatively well-established and widely distributed in Colorado. Through June 2009, at least one case of CWD had been detected in 22 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 (2006–2008) summaries of harvest survey data varied from <1–14.3% among mule deer, <1–2.4% among elk, and <1% 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 steadily over time surveillance data from many DAUs in the southern part of the state presently are insufficient to assure the absence of additional foci in those areas (see Table below). More effective and efficient survey methods are in development to assure long-term sustainability of CWD surveillance efforts in Colorado and elsewhere; in particular, an approach that reemphasizes CWD "suspect" submissions and combines data from different surveillance sources should improve the ability to detect new CWD foci in lightly harvested DAUs in southern Colorado.

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 (2006−2008) 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 2006−2008; for mule deer and white-tailed deer, DAUs are shaded if CWD has been detected in either deer species.

Species	DAU[1]	GMUs[2] included in DAU	Number tested	Prevalence	95% CI[3] Lower	Upper
ELK						
	E-1	2,201	153	0.0%	.	.
	E-2	3,4,5,14,214,301,441	1720	0.3%	0.0%	0.5%
	E-3	6,16,17,161,171	383	0.5%	0.0%	1.2%
	E-4	7,8,9,19,191	362	1.4%	0.2%	2.6%
	E-6	11,12,13,23,24,25,26,33,34,131,211, 231	2713	1.0%	0.6%	1.3%
	E-7	15,27	207	0.5%	0.0%	1.4%
	E-8	18,181	286	2.1%	0.4%	3.8%
	E-9	20	382	2.4%	0.8%	3.9%
	E-10	21,22,30,31,32	221	0.0%	.	.
	E-11	82	27	0.0%	.	.
	E-12	35,36	154	0.0%	.	.
	E-13	28,37,371	343	0.3%	0.0%	0.9%
	E-14	41,42,52,411,421,521	346	0.3%	0.0%	0.9%
	E-15	43,471	47	0.0%	.	.
	E-16	44,45,47,444	115	0.0%	.	.
	E-17	48,56,481,561	49	0.0%	.	.
	E-18	50,500,501	74	0.0%	.	.
	E-19	40	21	0.0%	.	.
	E-20	61,62	94	0.0%	.	.
	E-21	10	112	0.9%	0.0%	2.6%
	E-22	49,57,58	91	0.0%	.	.
	E-23	59,511,512,581,591	151	0.0%	.	.
	E-24	70,71,72,73,711	93	0.0%	.	.
	E-25	66,67	58	0.0%	.	.
	E-26	68,681	51	0.0%	.	.
	E-27	86,691,861	48	0.0%	.	.
	E-28	69,84	59	0.0%	.	.
	E-30	74,741	62	0.0%	.	.
	E-31	75,77,78,751,771	153	0.0%	.	.
	E-32	80,81	52	0.0%	.	.
	E-33	83,85,140,851	105	0.0%	.	.
	E-34	76,79	34	0.0%	.	.
	E-35	64,65	71	0.0%	.	.
	E-38	29,38	76	0.0%	.	.
	E-39	39,46,391,461	212	0.9%	0.0%	2.2%
	E-40	60	3	0.0%	.	.
	E-41	54	44	0.0%	.	.

(ELK cont.)	E-43	55,551	61	0.0%	.	.
	E-45	132,139,145	0	.	.	.
	E-46	128	2	0.0%	.	.
	E-47	1	5	0.0%	.	.
	E-51	51,104,105,106,110,111	79	0.0%	.	.
	E-52	53,63	68	0.0%	.	.
	E-53	133,134,135,141,142	6	0.0%	.	.
	E-54	136,137,138,143,144,147	5	0.0%	.	.
	E-55	682, 791	38	0.0%	.	.
	E-99	(all other GMUs)	10	0.0%	.	.
MULE DEER (MD)	D-1	1,2,201	17	0.0%	.	.
	D-2	3,4,5,14,214,301,441	1876	1.1%	0.6%	1.5%
	D-3	6,16,17,161,171	334	2.4%	0.8%	4.0%
	D-4	7,8,9,19,191	574	9.6%	7.2%	12.0%
	D-5	87,88,89,90,95	120	7.5%	2.8%	12.2%
	D-6	10	44	0.0%	0.0%	0.0%
	D-7	11,12,13,22,23,24,131,211,231	1369	2.2%	1.4%	3.0%
	D-8	15,35,36,45	421	1.0%	0.0%	1.9%
	D-9	18,27,28,37,181,371	601	1.5%	0.5%	2.5%
	D-10	20	501	10.8%	8.1%	13.5%
	D-11	21,30	66	0.0%	.	.
	D-12	41,42,421	294	0.0%	.	.
	D-13	43,47,471	57	0.0%	.	.
	D-14	44	39	0.0%	.	.
	D-15	48,56,481,561	55	0.0%	.	.
	D-16	49,57,58,59,581,591	217	3.2%	0.9%	5.6%
	D-17	39,46,51,391,461	333	2.4%	0.8%	4.0%
	D-18	40	40	0.0%	.	.
	D-19	61,62	78	0.0%	.	.
	D-20	53	45	0.0%	.	.
	D-21	54	79	0.0%	.	.
	D-22	55,551	85	0.0%	.	.
	D-23	60	5	0.0%	.	.
	D-24	70,71,711	99	0.0%	.	.
	D-25	66,67	61	0.0%	.	.
	D-26	68,681,682	15	0.0%	.	.
	D-27	29,38	320	4.7%	2.4%	7.0%
	D-28	122,125,126,127,130,132,137,138,139,146	22	0.0%	.	.
	D-29	72,73	32	0.0%	.	.
	D-30	75,77,78,751,771	185	0.0%	.	.
	D-31	83	25	0.0%	.	.
	D-32	85,140,851	15	0.0%	.	.
	D-33	143,144,145	3	0.0%	.	.
	D-34	69,84,86,691,861	165	0.0%	.	.
	D-35	80,81	14	0.0%	.	.
	D-36	76,79,791	11	0.0%	.	.

(MD cont.)	D-37	82	5	0.0%	.	.
	D-38	50,500,501	39	0.0%	.	.
	D-39	63	100	0.0%	.	.
	D-40	64,65	43	0.0%	.	.
	D-41	31,32	34	0.0%	.	.
	D-42	33	45	2.2%	0.0%	6.6%
	D-43	25,26,34	146	0.7%	0.0%	2.0%
	D-44	91,92,94,96,951	102	7.8%	2.6%	13.1%
	D-45	128,129,133,134,135,136,141,142,147	36	0.0%	.	.
	D-46	107,112,113,114,115,120,121	36	0.0%	.	.
	D-47	103,109,116,117	40	0.0%	.	.
	D-48	110,111,118,119,123,124	24	0.0%	.	.
	D-49	104,105,106	85	0.0%	.	.
	D-50	511,512	108	0.0%	.	.
	D-51	52,411,521	119	0.0%	.	.
	D-52	74,741	82	0.0%	.	.
	D-53	444	36	0.0%	.	.
	D-54	93,97,98,99,100	86	1.2%	0.0%	3.4%
	D-55	101,102	41	0.0%	.	.
WHITE-TAILED DEER (WTD)	D-2	3,4,5,14,214,301,441	1	0.0%	.	.
	D-3	6,16,17,161,171	1	0.0%	.	.
	D-4	7,8,9,19,191	12	0.0%	.	.
	D-5	87,88,89,90,95	18	5.6%	0.0%	16.4%
	D-7	11,12,13,22,23,24,131,211,231	0	.	.	.
	D-8	15,35,36,45	0	.	.	.
	D-9	18,27,28,37,181,371	3	0.0%	.	.
	D-10	20	5	0.0%	.	.
	D-12	41,42,421	1	0.0%	.	.
	D-15	48,56,481,561	2	0.0%	.	.
	D-16	49,57,58,59,581,591	7	0.0%	.	.
	D-17	39,46,51,391,461	2	0.0%	.	.
	D-19	61,62	1	0.0%	.	.
	D-20	53	0	.	.	.
	D-22	55,551	0	.	.	.
	D-27	29,38	5	0.0%	.	.
	D-28	122,125,126,127,130,132,137,138,139,146	19	0.0%	.	.
	D-30	75,77,78,751,771	1	0.0%	.	.
	D-33	143,144,145	0	.	.	.
	D-34	69,84,86,691,861	1	0.0%	.	.
	D-40	64,65	1	0.0%	.	.
	D-43	25,26,34	0	.	.	.
	D-44	91,92,94,96,951	218	3.2%	0.9%	5.6%
	D-45	128,129,133,134,135,136,141,142,147	2	0.0%	.	.
	D-46	107,112,113,114,115,120,121	5	0.0%	.	.

	DAU[1]	GMU[2]				
(WTD cont.)	D-47	103,109,116,117	33	0.0%	.	.
	D-48	110,111,118,119,123,124	11	0.0%	.	.
	D-49	104,105,106	5	0.0%	.	.
	D-50	511,512	0	.	.	.
	D-51	52,411,521	2	0.0%	.	.
	D-52	74,741	0	.	.	.
	D-53	444	1	0.0%	.	.
	D-54	93,97,98,99,100	10	0.0%	.	.
	D-55	101,102	34	0.0%	.	.
MOOSE						
	M-1	6,16,17,161,171	400	0.0%	.	.
	M-2	7,8,19	105	0.0%	.	.
	M-3	18,28,36,37,371	123	0.0%	.	.
	M-4	66,76,77,751	36	0.0%	.	.

[1]DAU = data analysis unit.
[2]GMU = game management unit.
[3]CI = confidence interval.