

SOUTH DAKOTA GAME, FISH AND PARKS CHRONIC WASTING DISEASE

BIOLOGY, HISTORY LONG-TERM CONCERNS

WHAT IS CWD?

Chronic wasting disease (CWD) is a fatal brain disease of deer, elk, and moose that is caused by an abnormal protein called a prion. Animals infected with CWD show progressive loss of weight and body condition, behavioral changes, excessive salivation, increased drinking and urination, depression, loss of muscle control and eventual death. Chronic wasting disease is always fatal for the afflicted animal. The disease can not be diagnosed by observation of physical symptoms because many big game diseases affect animals in similar ways.

WHAT IS A PRION?

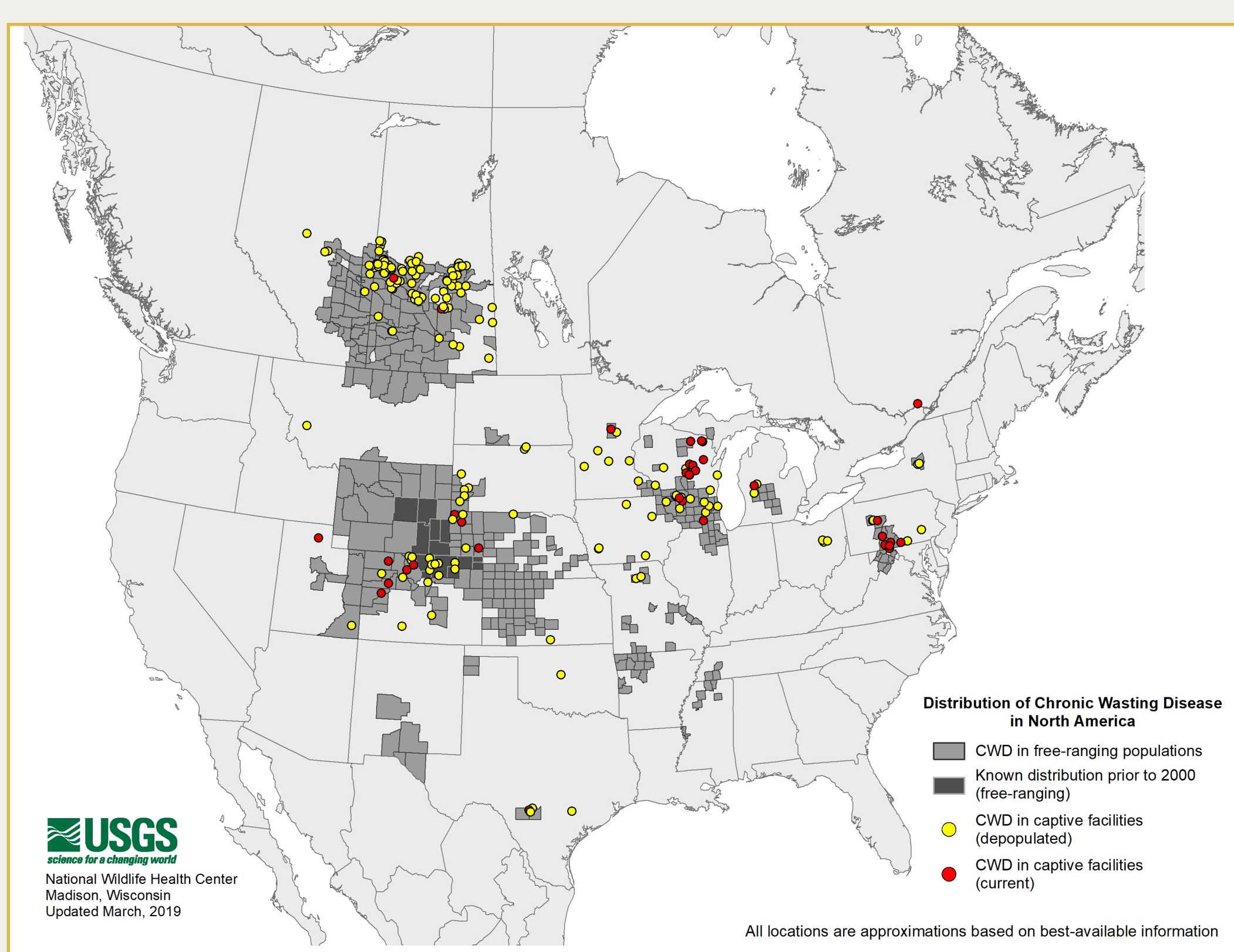
A prion is defined as an abnormal form of cellular protein that is most commonly found in the central nervous system and in lymphoid tissue. The prion “infects” the host animal by promoting conversion of normal cellular protein to the abnormal form.

HOW IS CWD TRANSMITTED?

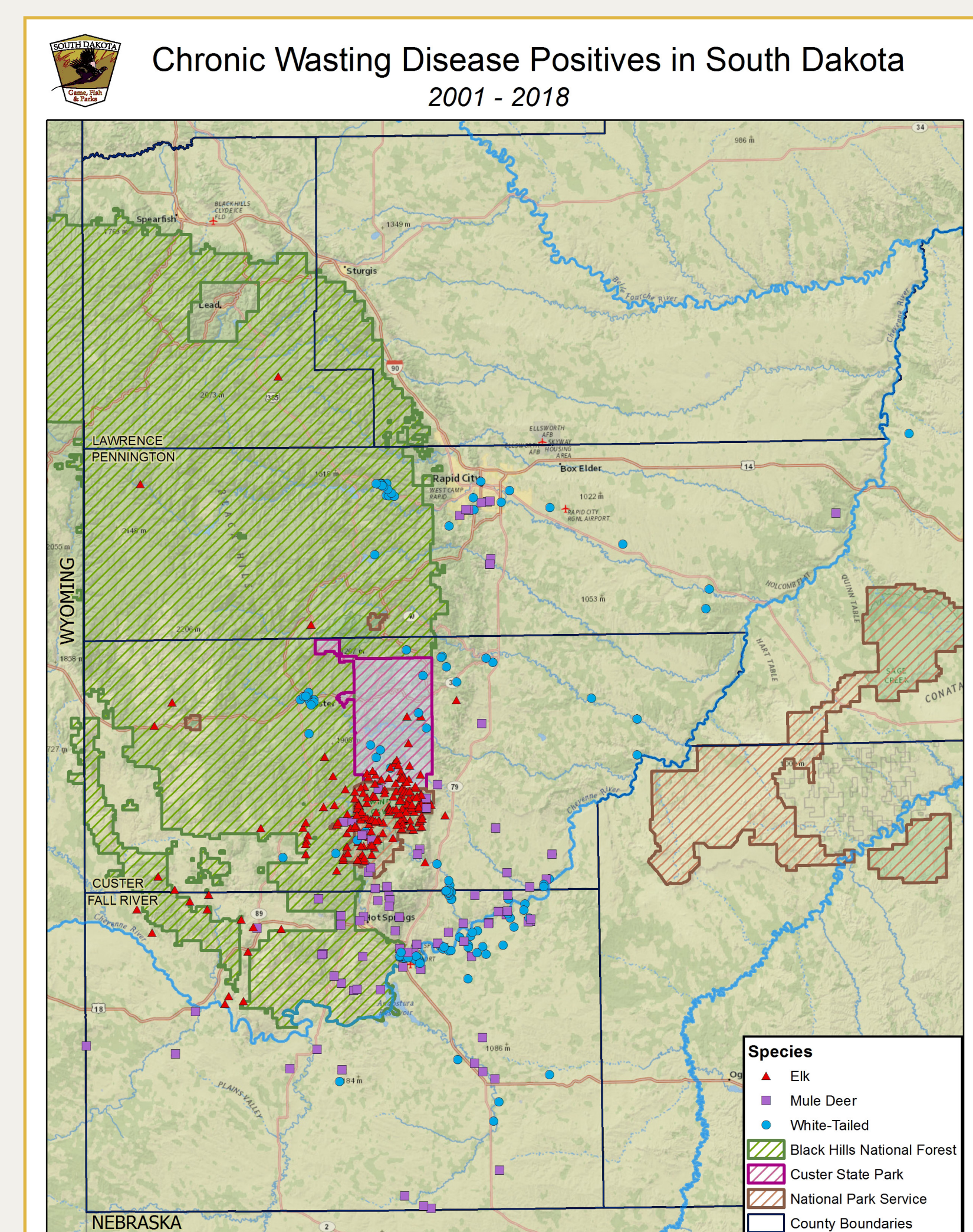
How the pathogenic prion is transmitted from diseased animals to healthy ones is believed to be through direct animal to animal contact and/or contamination of feed or water sources with saliva, urine, and/or feces. Numerous organizations and individual scientists across the United States and Canada are continuing to conduct detailed investigations in an effort to obtain a definitive answer to the route of transmission. Evidence shows that infected carcasses may serve as a source of infection. CWD seems more likely to occur in areas where deer or elk are crowded or where they congregate at man-made feed and water stations. Artificial feeding of deer and elk will likely compound the problem.

WHAT DOES THIS MEAN TO THE FUTURE OF THESE WILDLIFE POPULATIONS IN SOUTH DAKOTA?

Research has shown that if prevalence of CWD gets to high levels that population may not be able to sustain themselves and hunting of these populations may have to cease in order to maintain desired population levels.



Known distribution of chronic wasting disease in North America, December 2018



Locations of chronic wasting disease infected wild white-tailed deer in South Dakota, 2001-2018.

YEAR	WHITE-TAILED DEER		MULE DEER		ELK		MOOSE	
	# Sampled	# Positive	# Sampled	# Positive	# Sampled	# Positive	# Sampled	# Positive
1997-1998	107	0	27	0	1	0	0	0
1998-1999	251	0	37	0	160	0	0	0
1999-2000	161	0	65	0	209	0	0	0
2000-2001	0	0	2	0	0	0	0	0
2001-2002	307	1	212	0	169	0	0	0
2002-2003	912	6	632	7	609	1	0	0
2003-2004	1,208	2	608	1	682	4	0	0
2004-2005	1,241	4	753	3	700	4	0	0
2005-2006	1,616	4	867	4	769	6	0	0
2006-2007	1,318	3	615	4	608	4	0	0
2007-2008	1,465	9	603	6	490	4	0	0
2008-2009	1,273	8	499	13	394	14	0	0
2009-2010	1,041	13	476	8	405	7	1	0
2010-2011	1,135	17	339	8	253	8	0	0
2011-2012	970	18	242	11	197	15	1	0
2012-2013	114	6	28	1	140	12	0	0
2013-2014	56	8	8	3	145	13	0	0
2014-2015	30	4	19	6	129	12	0	0
2015-2016	31	4	19	4	187	15	0	0
2016-2017	82	5	56	0	645	50	0	0
2017-2018	272	12	15	0	459	25	0	0
2018-2019	228	11	43	10	215	7	0	0
TOTAL	13,818	135	6,165	89	7,566	201	2	0

