Perspectives on CWD

By

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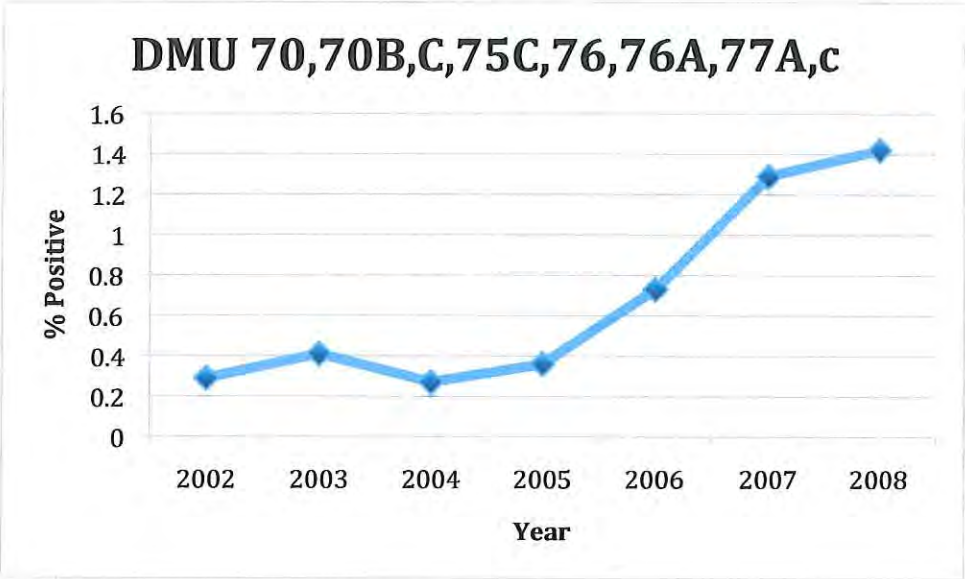
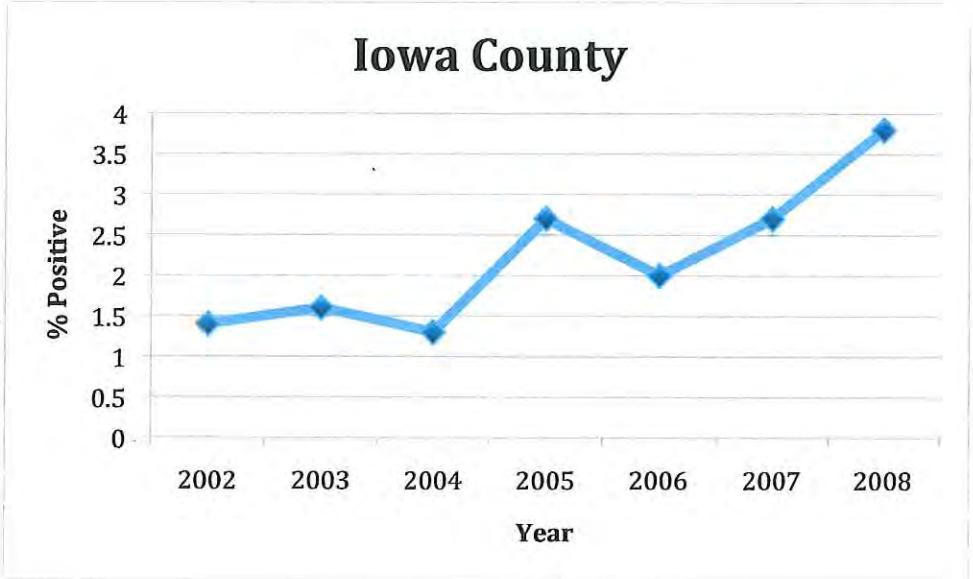
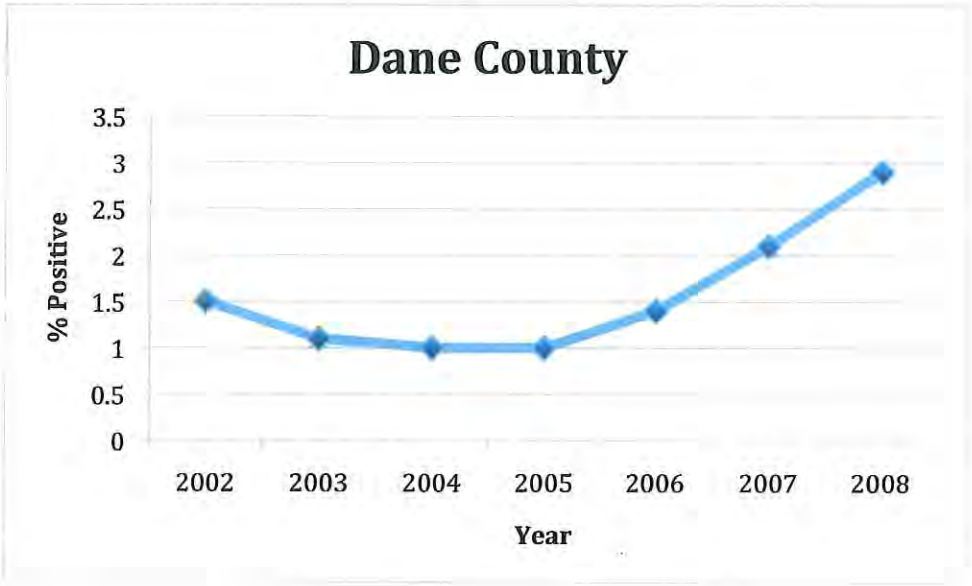
As a veterinarian, I have always maintained a strong interest in the epidemiological aspects of CWD. During 2008, conversations with Wildlife Management convinced me that the Department management was ignoring how the disease was behaving in Wyoming and Colorado. So, as I often do, I did some research. Below are three of the graphs I prepared from data on the DNR web site.







Up to that time in early March 2009, the Department had stuck steadfastly to the story that they were not detecting any change in prevalence. My crude graphs, while not subjected to sophisticated analysis and modeling, turned out to be a pretty fair representation of what was actually happening on the ground. Every graph exhibited the same exponential growth that as the published data from Colorado. (Miller and Connor, 2005 Journal of Wildlife Diseases)

At the present time, it is my observation that the Department management continues to ignore or minimize how the disease is actually behaving and possible implications of such behavior for deer management. So, again I did some research. This time I have the luxury of 11 years of robust data and a whole lot more sophisticated set of numbers. Below is my observation of how CWD appears to be behaving in a 4 township (122 square miles) area of Northern Iowa County along with the supporting data. There has been robust sampling in this area. The sample sizes are large enough to be statistically valid. Note also the annual rates of growth. These rates are unprecedented, and to me alarming.

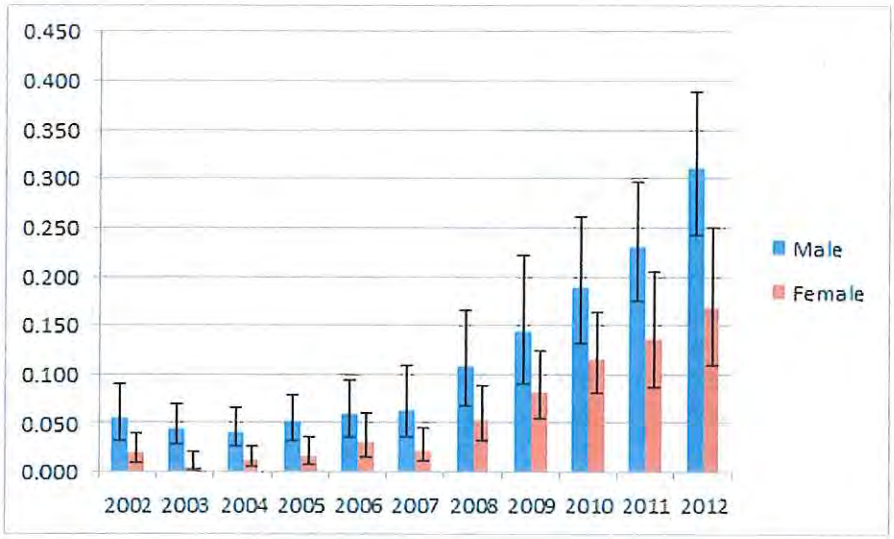
Percent CWD+ samples
Area: Township 7&8 North, Range 3&4 E
Ages: 2.5 yrs and older
Samples: hunting and "out of season" collections

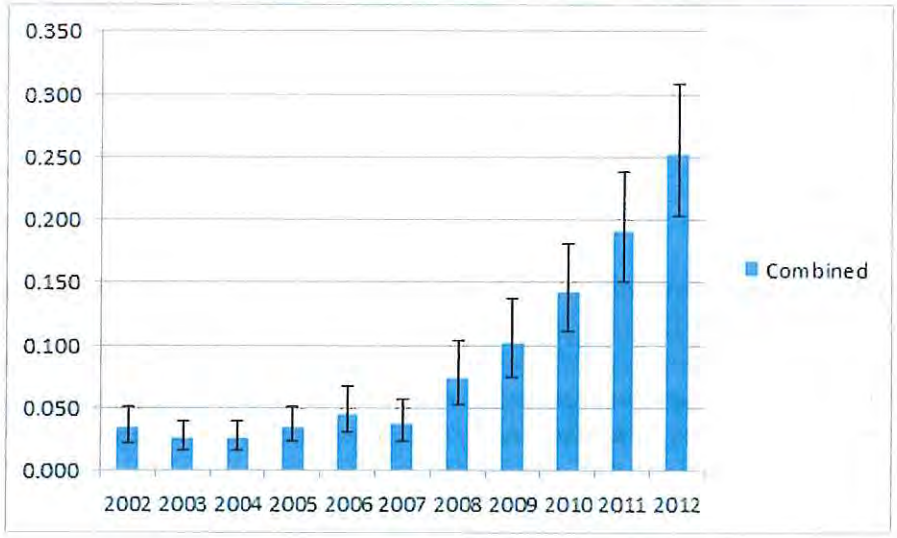
Year	Negative	Positive	Total	% Positive	Negative	Positive	Total	% Positive	Total	% Positive
2002	439	8	447	0.018	267	15	282	0.053	729	0.032
2003	355	2	357	0.006	374	17	391	0.043	748	0.025
2004	479	5	484	0.010	391	17	408	0.042	892	0.025
2005	376	6	382	0.016	378	22	400	0.055	782	0.036
2006	363	14	377	0.037	281	18	299	0.060	676	0.047
2007	343	8	351	0.023	175	12	187	0.064	538	0.037
2008	253	15	268	0.056	141	17	158	0.108	426	0.075
2009	227	20	247	0.081	95	19	114	0.167	361	0.108
2010	221	28	249	0.112	113	27	140	0.193	389	0.141
2011	117	18	135	0.133	141	43	184	0.234	319	0.191
2012	90	22	112	0.196	105	48	153	0.314	265	0.264

Annual Exponential Growth Rate (% Positive)
Males 0.232
Females 0.381
Combined 0.274

Females Males Combined

Below is a graphic representation of the results. Compare the data from 2003 with 2006, 2006 with 2009, 2009 with 2012. Note that the confidence intervals from those comparisons DO NOT overlap indicating there is a statistically significance difference in the data and confirming that the upward curve in prevalence is real. This data is in agreement with similar prevalence data from Colorado, Wyoming and Dr Dennis Heisey's peer reviewed paper in Ecological Monographs.





We have all seen the graphs showing upward trend in CWD prevalence. Those graphs have become so common that we tend to be a little ho-hum about them. And, it is sometimes difficult to envision just how those upward trends actually will effect deer management and hunting. I wondered, what would it look like if one were to graph the inverse of the prevalence data curve to determine how many healthy, uninfected deer would remain on the landscape as prevalence continues to increase? Below is that graph for the past 11 years and a projection for the next few years based on how the disease has behaved or progressed to this point.

Granted this is a projection. But, before you completely dismiss it and the possible implications for deer management, consider the following facts:

There are 11 years of sound scientific data supporting the projection.

There is NOT ONE example, anywhere, demonstrating that the prevalence curve of CWD will plateau or level off. NONE.

We know from the Hall farm that CWD can reach levels of 80% in a relatively short time span. There is no data to suggest similar or even higher levels of infection cannot or will not happen in a densely populated, free ranging white-tail herd.

Percent of Uninfected Deer

This is sobering stuff with wide-ranging implications for deer management.

As an agency we should be asking ourselves:

How do you get a landowner in this 4 township area excited about something like DMAP when the reality may well be that in a few years there may not be enough healthy D to MAP?

The Department has maintained that "...impacts of CWD on deer populations and hunting traditions will likely develop over decades, whereas impacts of CWD control efforts ....on hunting traditions are felt more quickly". In light of what appears to be happening here, do we need to re-evaluate that concept?

The CWD Management Plan states: "Surveys of deer hunters suggest that nearly half would stop hunting if CWD prevalence increased to 50%...." How will increasing prevalence impact the demand for hunter service testing and how will we meet that demand? If hunter numbers do decline, how will we deal with that decline?