Keweenaw Bay Indian Community

Chronic Wasting Disease Surveillance

USDA/APHIS
KBIC Natural Resource Department
KBIC Conservation Department

Chronic Wasting Disease (CWD) is:

- A disease caused by mutated protein cells called prions (pry-ons)
- Affects deer, elk and moose
- Causes a spongy degeneration of the brain

How is CWD transmitted?

- Prions are present in saliva and feces of infected deer
- Spread of infection is through direct contact (Mathiason et al. 2006)
- Prions persist in soil for many years and may cause indirect transmission as well (Georgsson et al. 2006)

Signs of CWD in Whitetail Deer

- Loss of body condition and changes in behavior
- Loss of appetite and weight loss
- Weakened with lack of coordination
- Excessive thirst and excessive salivation
- Most animals survive a few weeks to several months

Fig.1 An elk experimentally infected with chronic wasting disease. *Photo by Terry Kreeger, Wyoming Game and Fish Laboratory.*

CWD Detected in Midwest USA

- Wild deer (1,808 total) in southern Wisconsin between 2002 and 2011 and in one deer in northwestern Wisconsin in 2011
- One captive deer in Kent County of Michigan's lower peninsula.

Human Health Concerns

- No evidence that CWD poses a risk for humans
- No cases of human disease associated with CWD

Recommendations for Hunters

- Do not to consume meat from animals that appear sick
- Do not consume brain or nervous system
- Wear rubber gloves when gutting/butchering wild game, wash hands and cutting implements thoroughly
- Cook wild game meat thoroughly

Why Test for CWD in UP Michigan?

- Potential impact of CWD could result in long-term population decline of WT Deer and Moose
- High populations of deer have potential to spread the disease quickly across wide areas
- Presence of CWD in deer populations alters management strategies in an effort to isolate the disease and hopefully snuff it out before it causes long-term population declines
- Perceptions about associated human health risks may erode hunters willingness to hunt in areas where CWD occurs thus adversely affecting the isolation effort
- Potential to impact local economies dependent on seasonal tourism for hunting

Results from KBIC Surveillance

- Number Sampled by KBIC between 2007 and 2011: 379 hunter harvested and/or road killed white-tailed deer from Baraga and Houghton Counties.
- All WT deer tested to date found negative for CWD
- In 2011, 116 deer tested and all with negative results
- Increased collection success in years 2010 and 2011 were most likely due to KBIC Natural Resource Committee's generous donation for valuable prize drawings for all participants.

Fig. 2 Numbers of white-tailed deer tested by KBIC according to age and sex in 2007 through 2011.

	2007		2008		2009		2010		2011		
Age in Years	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Grand Total
Fawn	0	0	0	0	4	1	3	11	3	7	29
1.5	11	2	25	2	7	0	17	5	24	11	104
2.5	7	4	26	9	6	5	23	10	13	7	110
3.5	7	1	7	5	7	1	13	4	12	7	64
4.5	1	1	1	2	1	0	7	4	11	8	36
5.5	0	2	0	1	1	1	2	4	4	2	17
6.5	0	2	0	0	0	0	0	3	0	1	6
7.5+	0	1	0	4	0	0	0	2	0	6	13
Total	**26**	**13**	**59**	**23**	**26**	**8**	**65**	**43**	**67**	**49**	**379**
	39		**82**		**34**		**108**		**116**		

Miigwech to all who voluntarily donated deer heads to the surveillance effort!

References:

Chronic Wasting Disease Alliance. 2002. http://www.cwd-info.org/index.php.

Georgsson G., S. Sigurdarson and P. Brown. 2006. Infectious agent of sheep scrapie may persist in the environment for at least 16 years. J. Gen. Virol. **87:** 3737-3740.

Mathiason K.C., J. Powers, S.J. Dahmes, D.A.Osborn, K. V. Miller, R.J. Warren, G. L. Mason, S.A. Hays, J. Hayes-Klug, D. M. Seelig, M. A. Wild, L. L. Wolfe, T. R. Spraker, M.W. Miller, C. J. Sigurdson, G.C. Telling, E.A. Hoover. 2006. Infectious Prions in the Saliva and Blood of Deer with Chronic Wasting Disease. Science Vol. 314 133 -136.