

Chronic Wasting Disease



Dr. Russ Mason, Chief
Michigan Department of Natural Resources
Wildlife Division



Chronic Wasting Disease



- In May 2015, the DNR Wildlife Disease Lab received confirmation a skinny six-year-old whitetail doe was infected with Chronic Wasting Disease (CWD).
- The doe had been wandering unafraid of humans in a neighborhood in Meridian Township, Ingham County.
- This was the first confirmed CWD-positive wild deer in Michigan. A captive white-tailed doe from Kent County was positive in 2008.

Chronic Wasting Disease



What is CWD?

- **Nervous System Disease**
 - Progressive, fatal, prolonged incubation (18 mos.)
- **Species affected**
 - Cervids: Deer, elk, moose

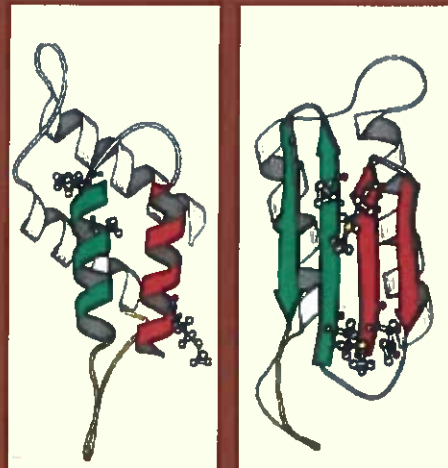


Chronic Wasting Disease



What causes CWD? Prions

- Mutant versions of normal proteins
- Normal protein undergoes change of shape, becomes:
 - Resistant to degradation, able to convert normal proteins to mutant form, contagious



From: Saperstein, Verling - 1999

Chronic Wasting Disease



Prion Disease = Transmissible Spongiform Encephalopathy (TSE)

- Prions multiply, accumulate & kill nerve cells
- As cells die, creates "holes" in the brain, severe symptoms
- CWD is like other TSEs (Mad Cow Disease, scrapie in sheep, Creutzfeldt-Jakob disease in humans, et al.)

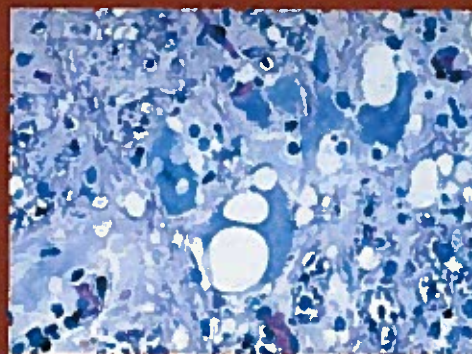


Photo: CO St. Univ. Coll. Vet. Med.

Chronic Wasting Disease



How is CWD transmitted?

- Direct (animal to animal) or indirect (environment to animal) contact with saliva, feces, urine, +/- blood
- Environmental contamination becomes a huge (the biggest) problem
 - Secretions & carcasses of infected animals contaminate soil, plants
 - Prions bound to soil are more infectious
 - Prions stay infectious in soil for years (e.g. at least 16 years for scrapie)
 - Congregating animals (e.g. by baiting, feeding) makes it worse



Photo: J. S. Williams
(i. Womax)



Chronic Wasting Disease



Current Geographic Range

Free-ranging wild cervids

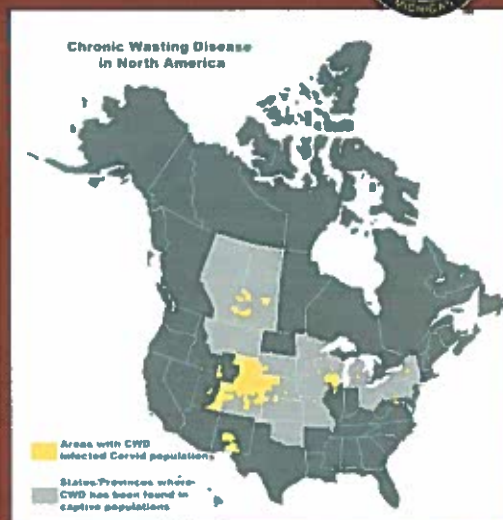
20 States

2 Canadian Provinces

Privately-owned/captive cervid facilities

15 States

2 Canadian Provinces



Chronic Wasting Disease



Are other animals (including humans) susceptible to CWD?

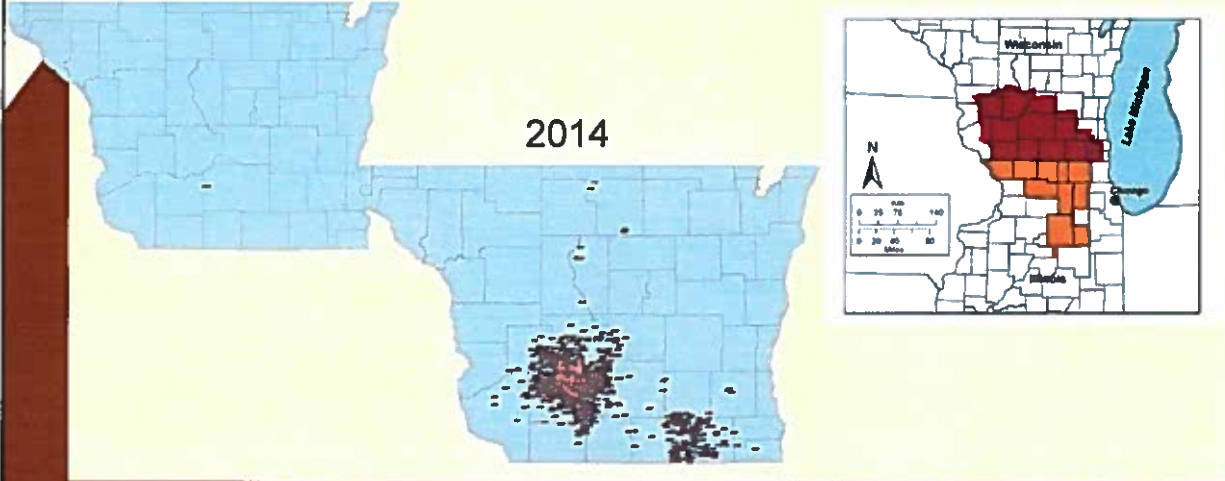
- No evidence CWD can be transmitted by natural exposure outside deer family
- Currently no evidence CWD can be transmitted to humans (World Health Organization and U.S. Centers for Disease Control & Prevention)
- WHO & CDC say don't eat it

Chronic Wasting Disease



2001

CWD in other States – Wisconsin and Illinois



Chronic Wasting Disease



The Michigan Response

- CWD Management Zone
 - Clinton, Ingham, and Shiawassee
- Open for early antlerless season
- Ban on baiting and feeding
- Increased license quotas
- Reduced antlerless license fee (40%)



Chronic Wasting Disease



What does the future hold?

- CWD is impossible to eradicate once established
- Without control, there are long term impacts that threaten deer management
- Likely impacts – reduced population size, younger deer herd, fewer older bucks
- Early management strategies focused on eradication and failed
- Current strategies focus on containment and maintaining low prevalence
- Hunter and landowner participation necessary in combating this disease

Chronic Wasting Disease



Economic Ramifications

- ~650,000 deer hunters
- ~10 million days of recreation
- \$2.3 billion dollar impact annually for hunting (deer is a large part of this)
- >25 million pounds of venison consumed



Chronic Wasting Disease



Questions?

