

Impact and Control of Chronic Wasting Disease in Wisconsin

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What is Chronic Wasting Disease?

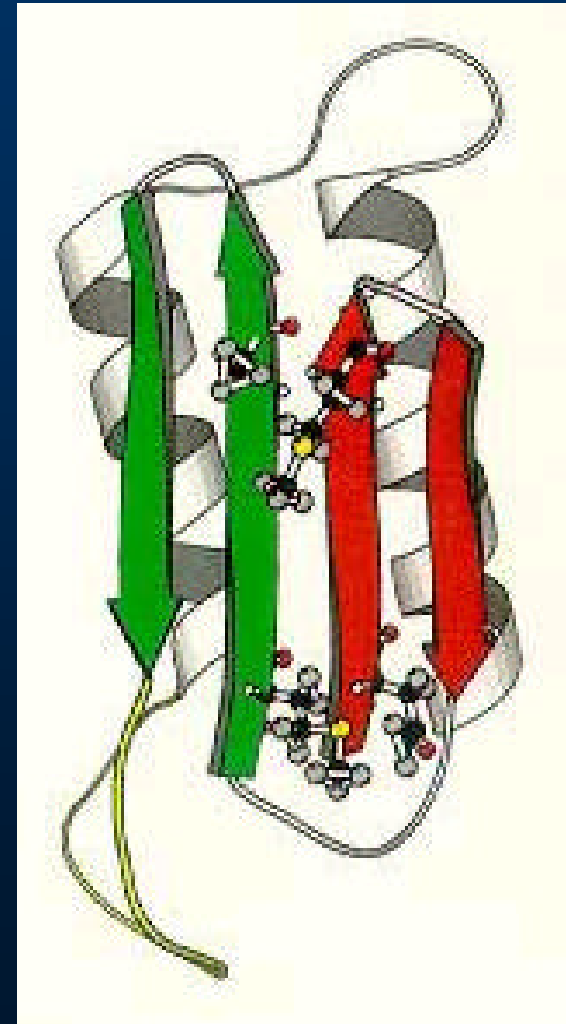
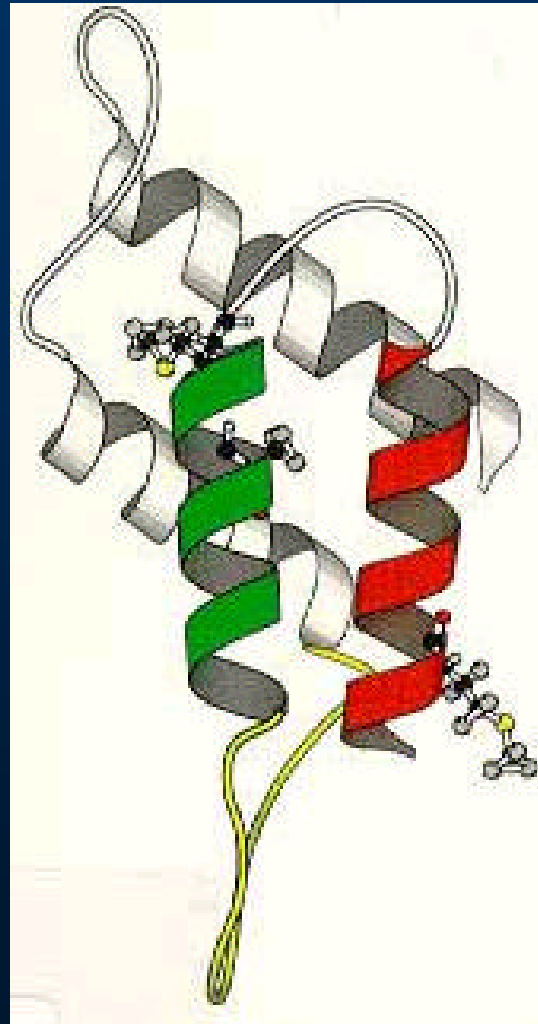
- CWD is a nervous system disease in: white-tailed deer, mule deer, black-tailed deer, & elk.
- Family of diseases known as transmissible spongiform encephalopathies (TSE's), or prion diseases.
- Slowly progressive disease not noticeable until the deer is 18+ months of age.



What Causes CWD?

A PRION

On the left is the normal prion protein found in all mammals. On the right is the abnormal, misshapen prion protein thought to cause diseases such as Chronic Wasting Disease.



Diagrams from: Springer-Verlag, © 1996.

Transmissible Spongiform Encephalopathies (TSE's)

- Chronic Wasting Disease (cervids)
- BSE - “Mad Cow Disease” (cattle)
- Scrapie (sheep, goat)
- Creutzfeldt-Jakob Disease/Kuru (humans)
- Trans. Mink Encephalopathy

Spongiform Change in the Brain

Brain tissue showing the holes associated with Chronic Wasting Disease.

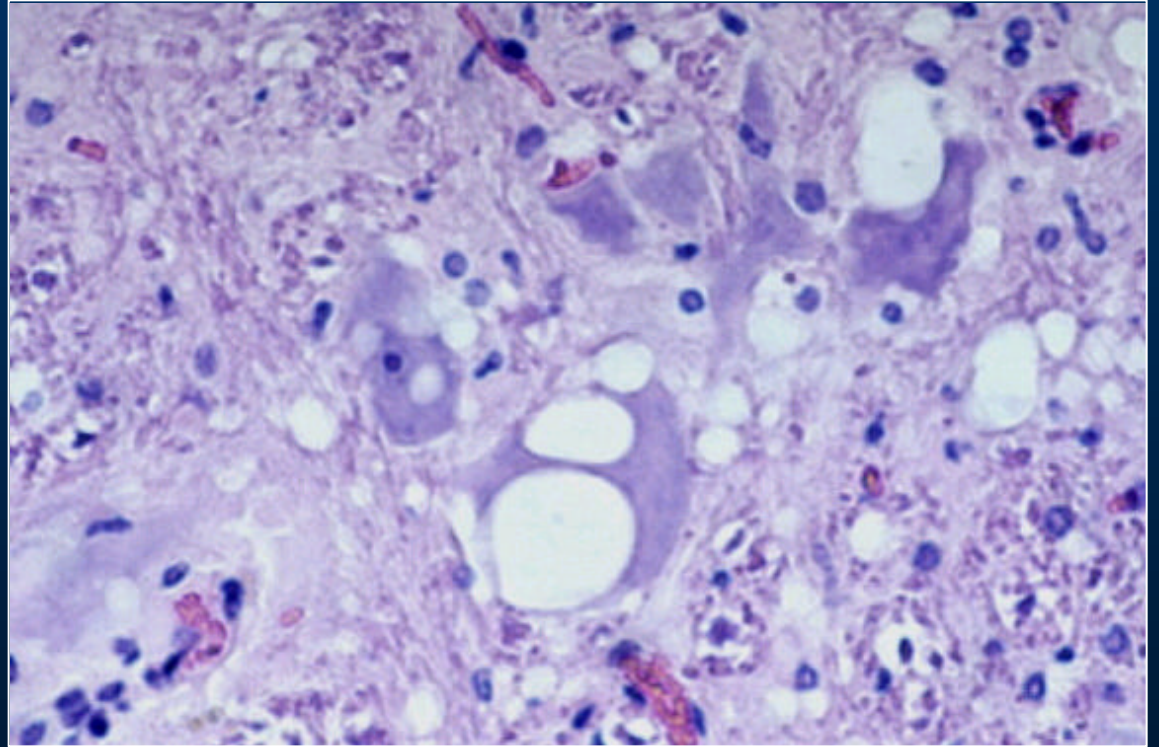


Photo by:

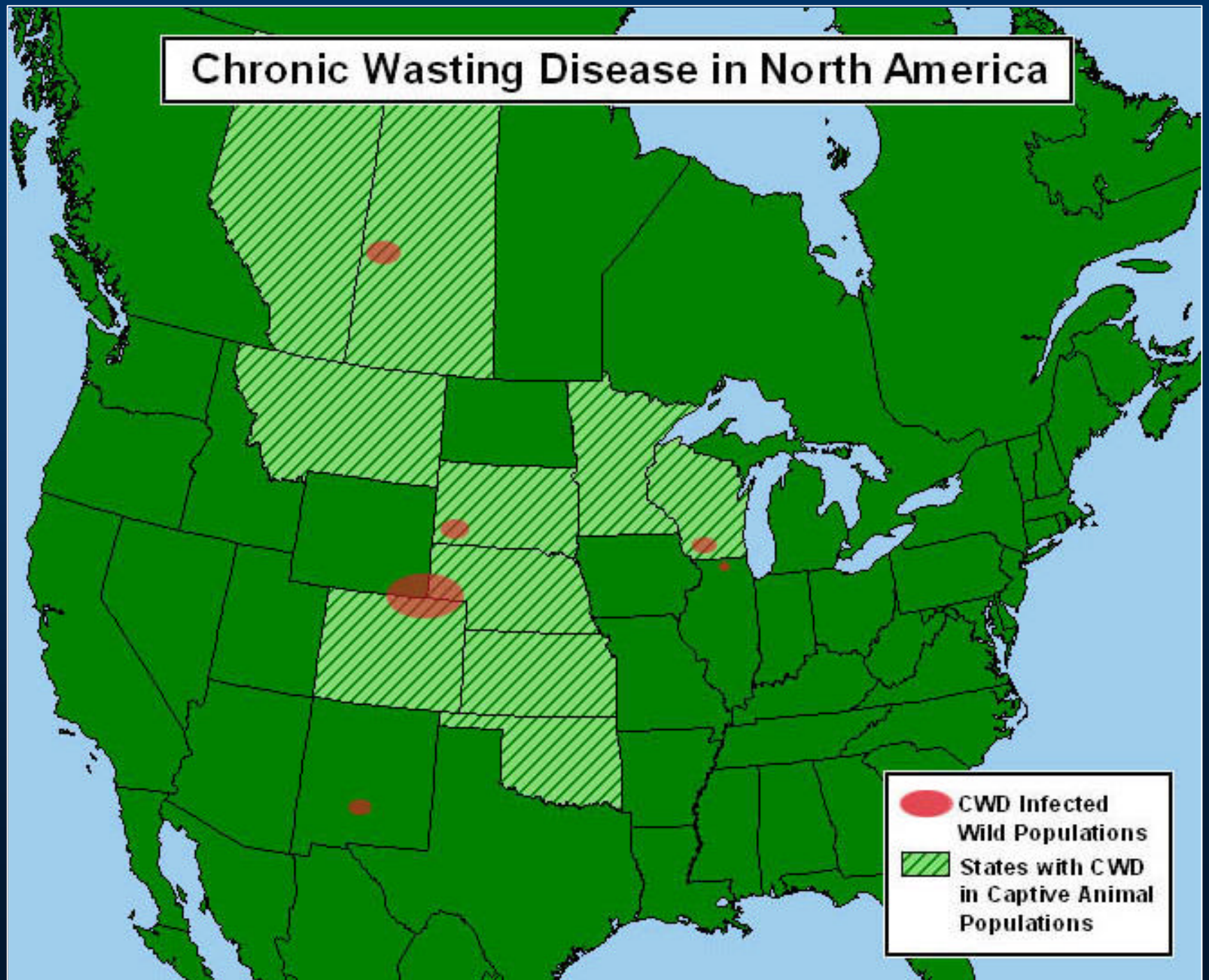
Colorado State College of Veterinary Medicine & Biomedical Sciences

What Are The Signs of CWD?

- CWD attacks the brain causing emaciation, displays of abnormal behavior, and loss of bodily functions
- Other signs that have been seen in captive deer are loss of appetite, progressive weight loss, excessive thirst and urination, head fixed in a lowered position, and drooping ears



Chronic Wasting Disease in North America

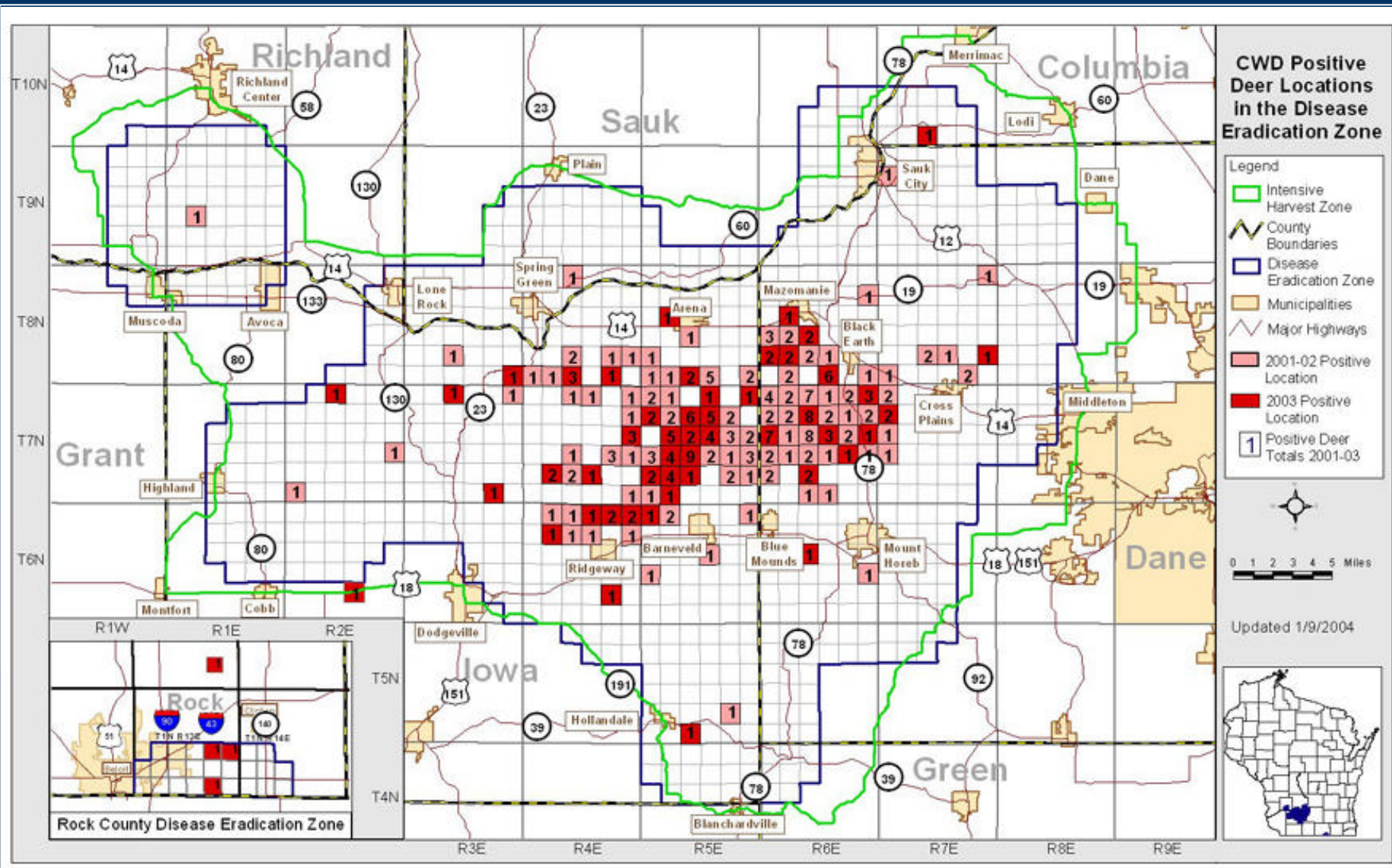


CWD in Wisconsin

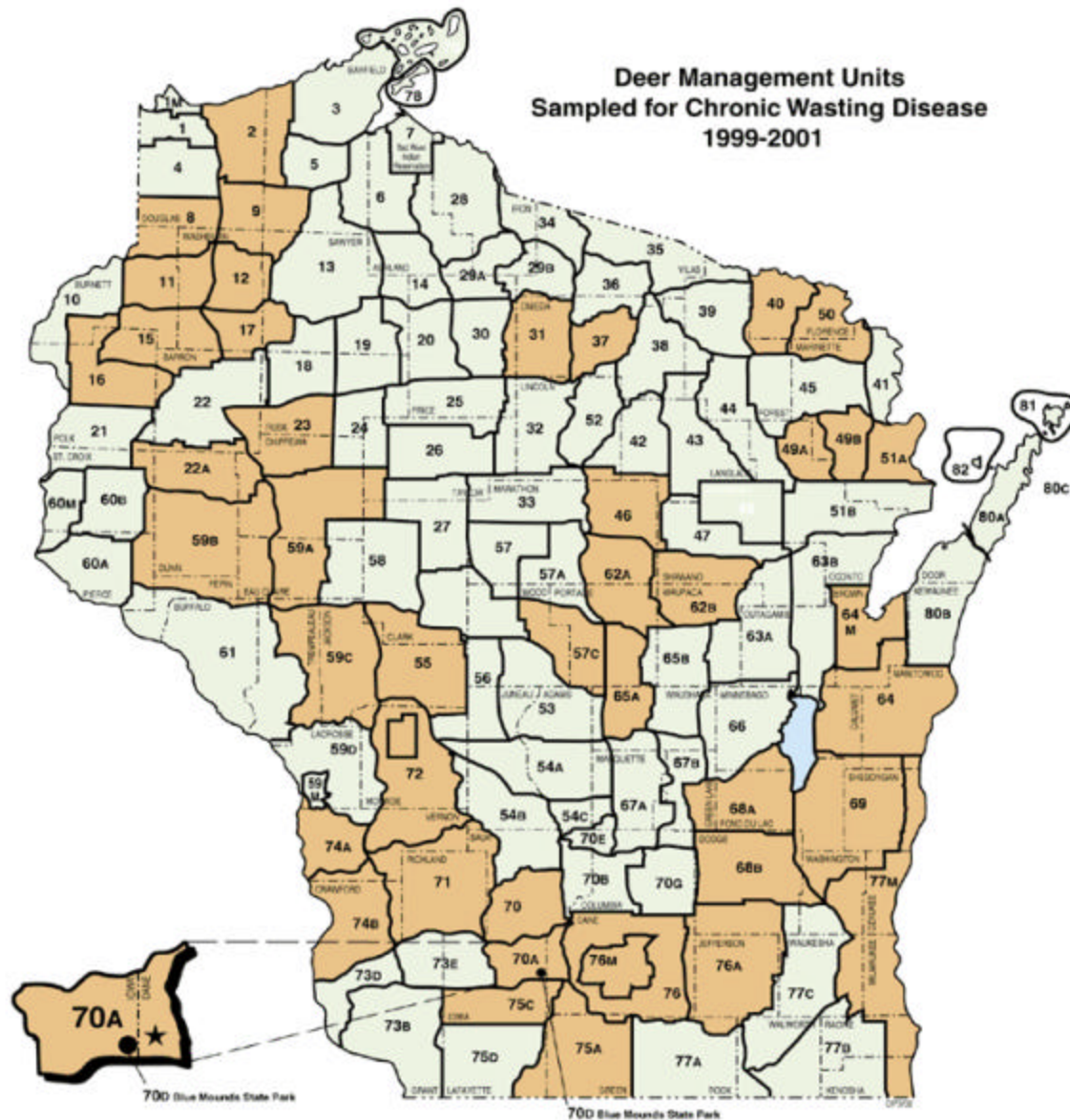
- February 28, 2002 will Forever be a Key Date in Wisconsin Deer Management History
- Three Deer Test Positive for CWD



Where is CWD in Wisconsin?



Deer Management Units Sampled for Chronic Wasting Disease 1999-2001

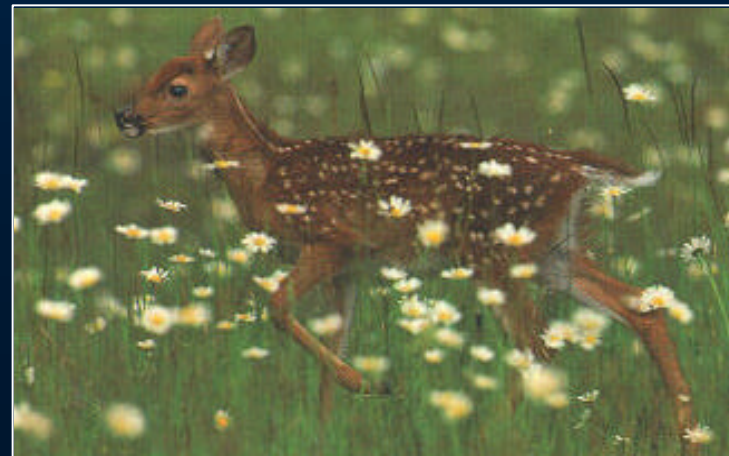


Department of Natural Resources Wildlife Health biologists collected tissue samples for Chronic Wasting Disease from deer in these deer management units over the past three deer hunting seasons. No positive tests were recorded in 1999 and 2000.

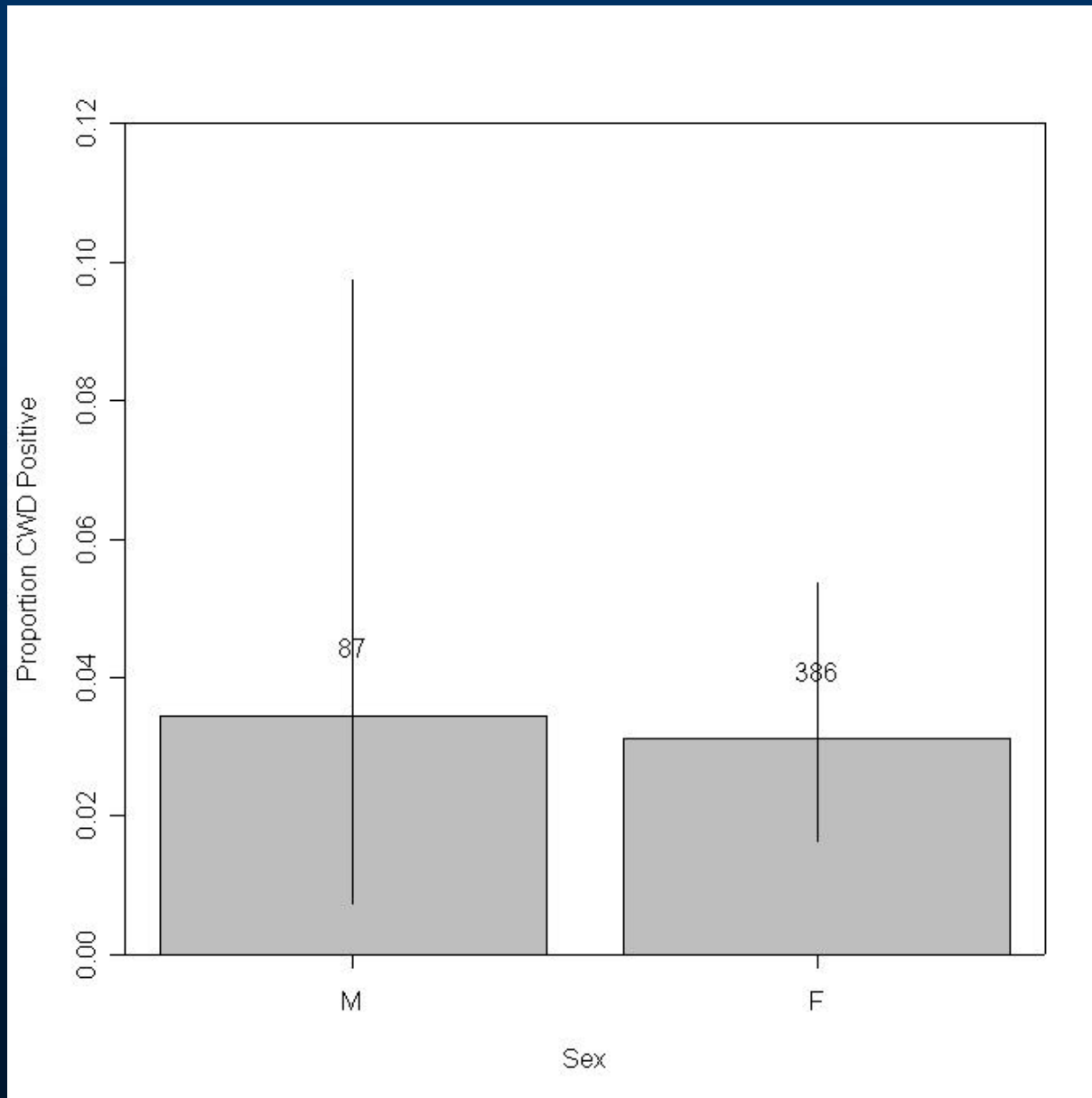
★ Three positive tests were recorded in samples collected from deer registered in Unit 70A in 2001.

How is CWD Transmitted?

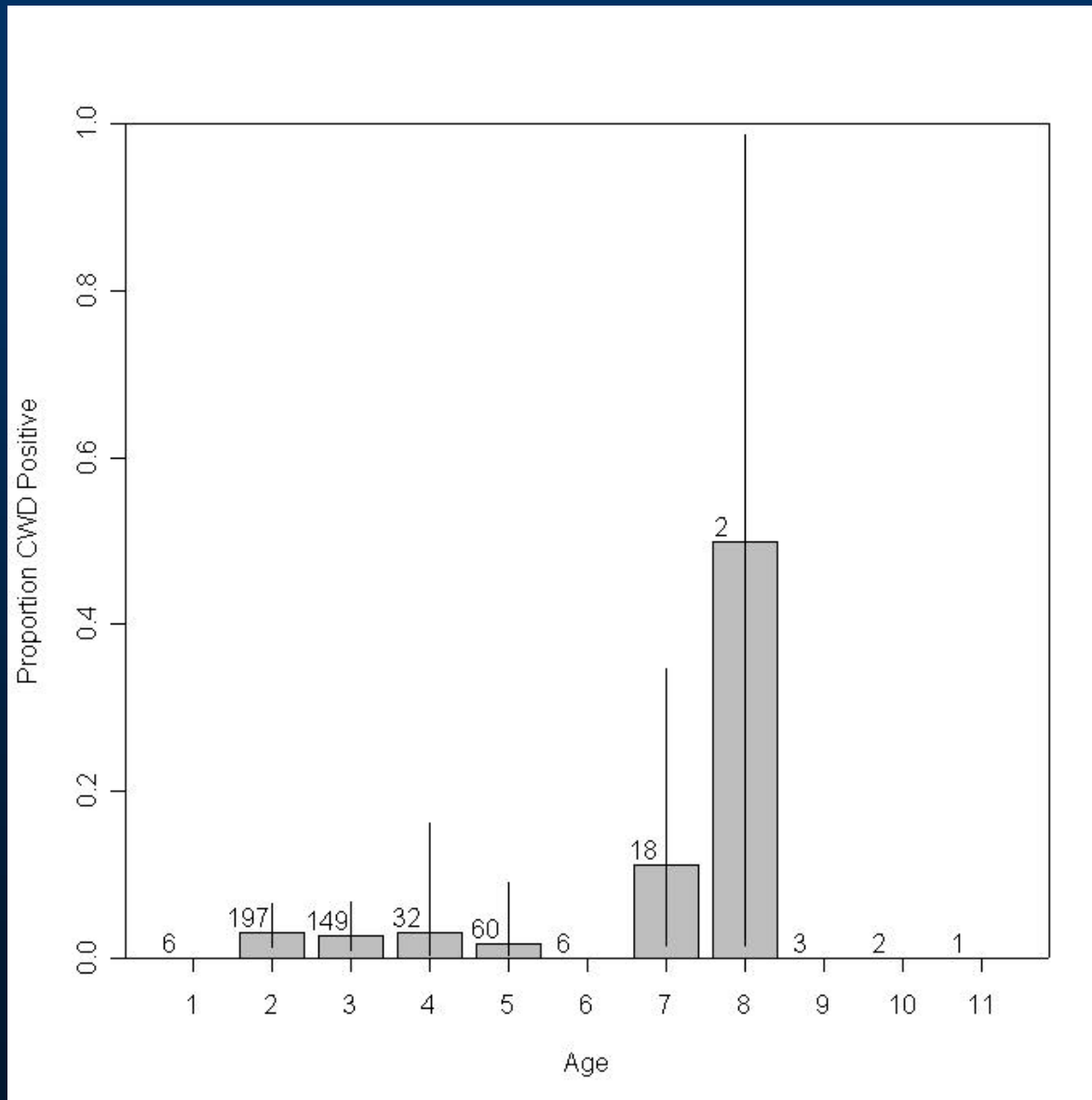
- The mode of transmission between deer is not understood.
- It is thought that the disease can be passed between animals in a herd.
- Research continues on other modes of transmission: mothers to offspring, or from a contaminated environment



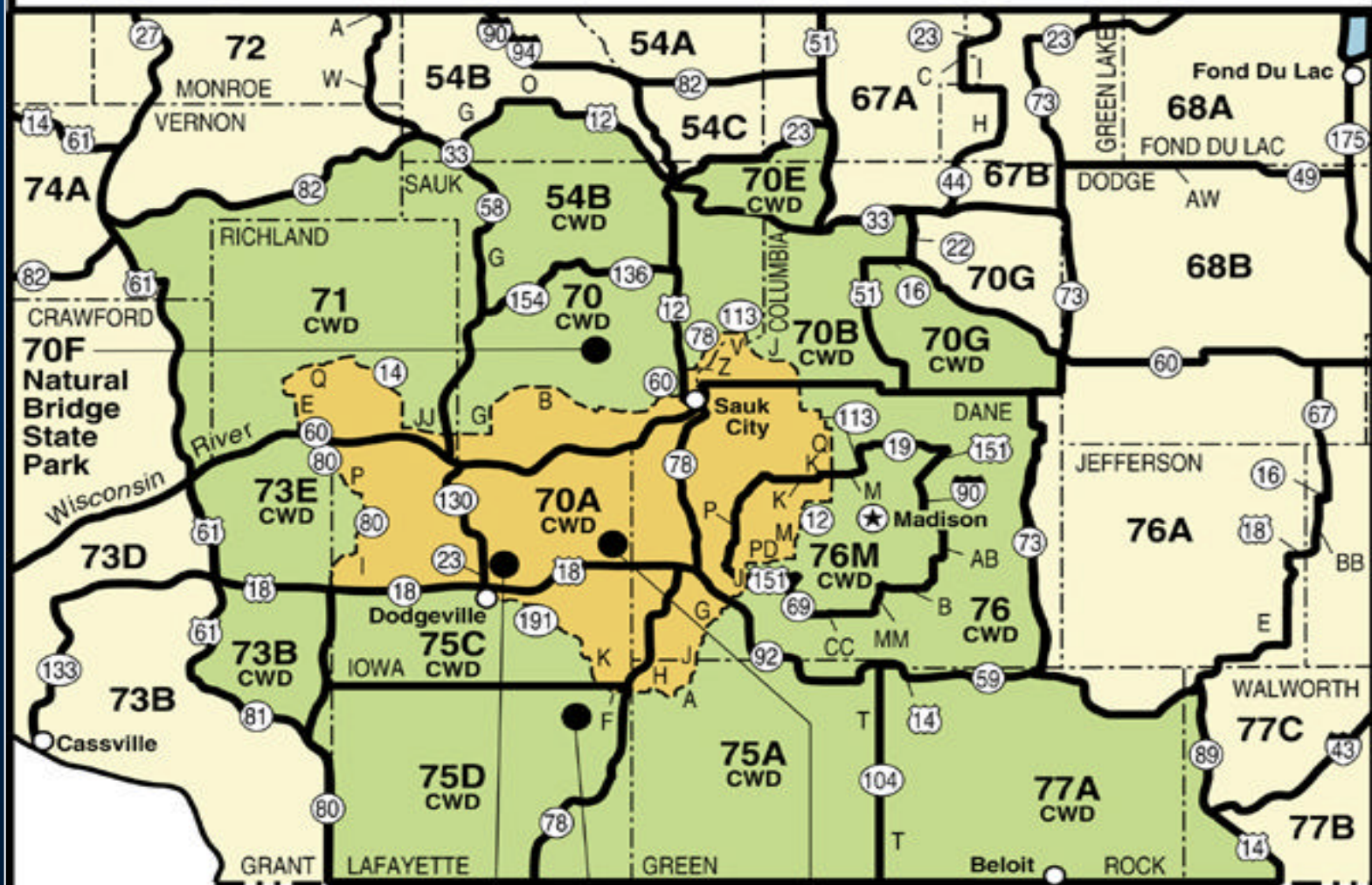
CWD Prevalence by Sex



CWD Prevalence by Age



2003 CWD Management Zones



70C Governor Dodge State Park

70D Blue Mounds State Park

75B Yellowstone State Park



Intensive Harvest Zone

Herd Reduction Zone

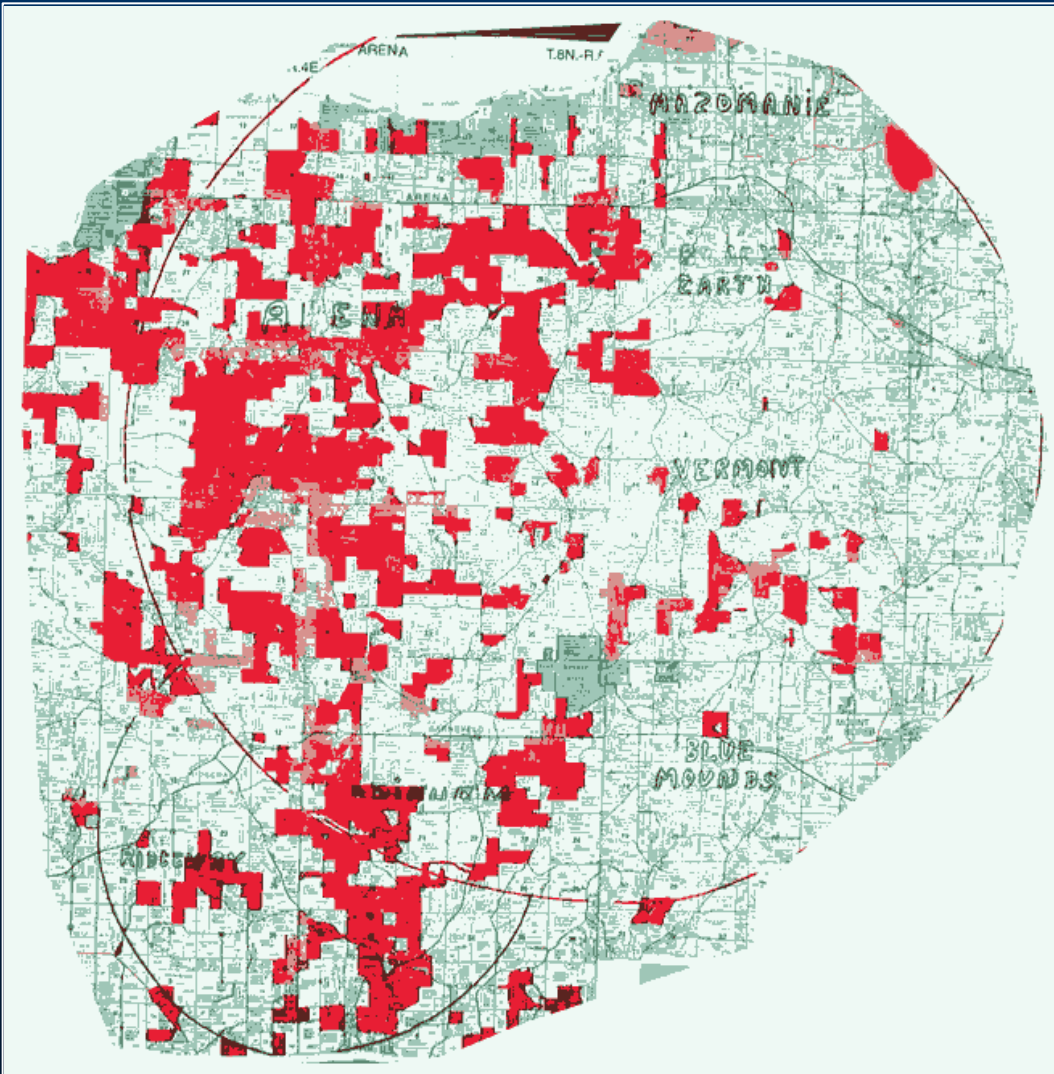
County Line

DMU boundary

Implications of CWD

- Public Relations
- Economics
- The deer herd
- Risk to humans and other species
- Ecology and problem management

Refugia in the Eradication Zone



Land Owners for a Rational Response

Roughly 100 mi² of habitat may be off-limits to the full eradication effort.

Can Chronic Wasting Disease Affect Humans?

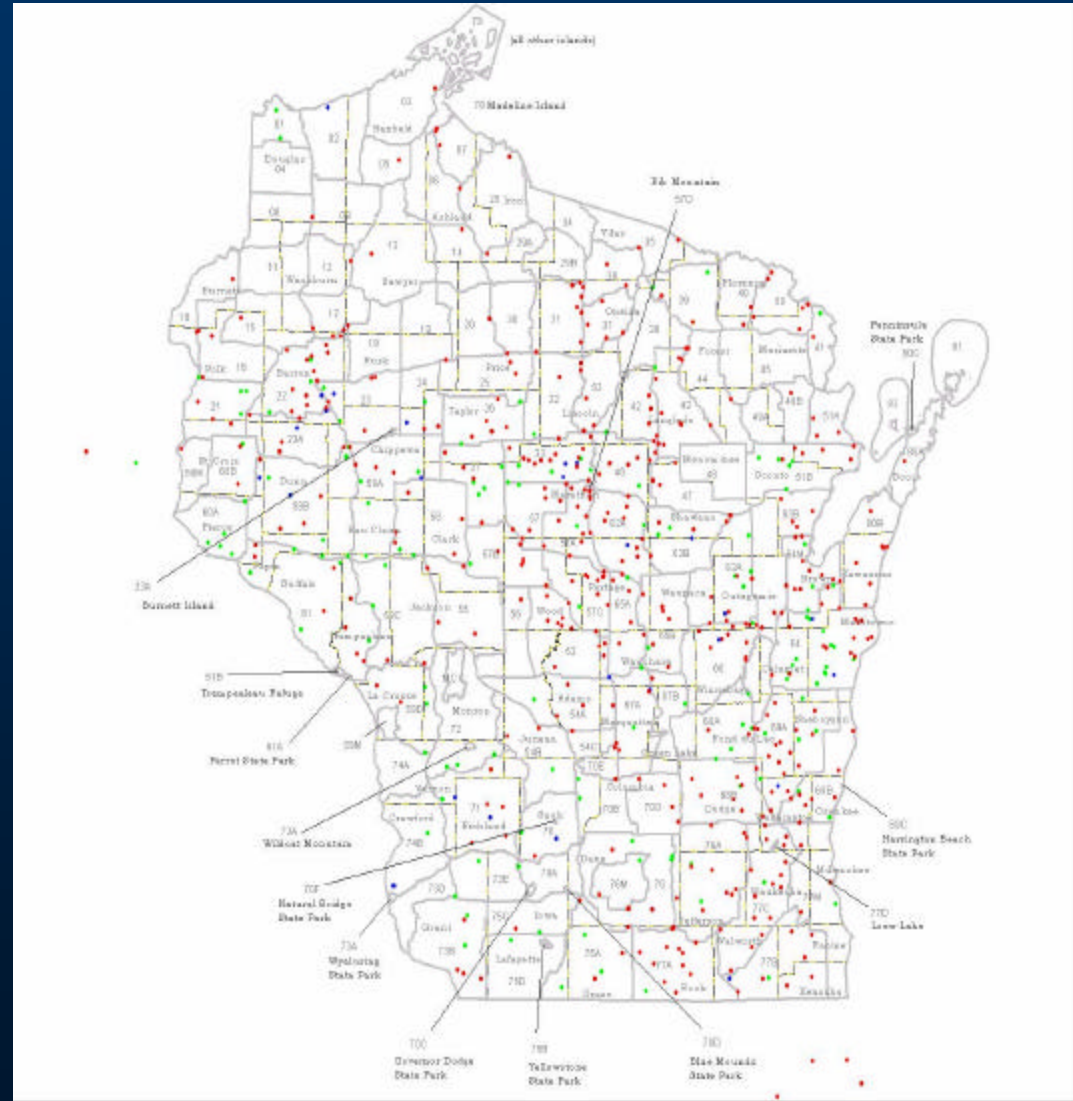
- So far, new variant CJD not detected in USA
(CDC investigates possible cases in persons < 56)
- Classic CJD is not more frequent in states where chronic wasting disease occurs
- WHO & CDC: No scientific evidence that chronic wasting disease causes human illness
- Muscle tissue from BSE-infected cattle and CWD-infected deer has not been found to be infectious

Yes, But....

- An animal prion has crossed the species barrier to humans at least once.
- Mice that were injected with a type of lab animal-adapted prion had detectable prions in certain muscle tissue.
- Impossible to prove that chronic wasting disease will absolutely never cause human disease.

Wisconsin Cervid Farms

- 20 Elk Traced to Wisconsin from CWD Positive Colorado Farms
- Less Than 10% of Deer and Elk Farms Have Done Any CWD Testing



What About Wisconsin's Livestock?

No evidence that CWD can be transmitted under natural conditions to cattle; UW currently studying deer behavior.

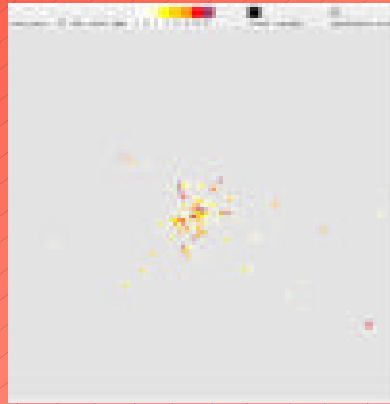


Do Nothing Scenario

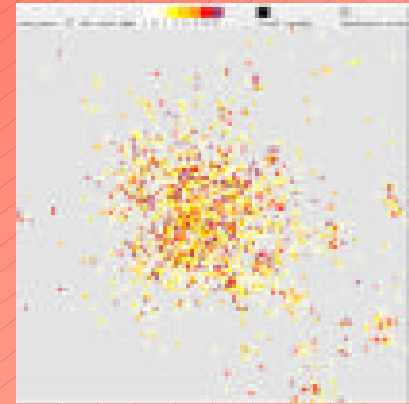
CWD maps at 5 year intervals following introduction demonstrate the rapid and relentless spread of CWD



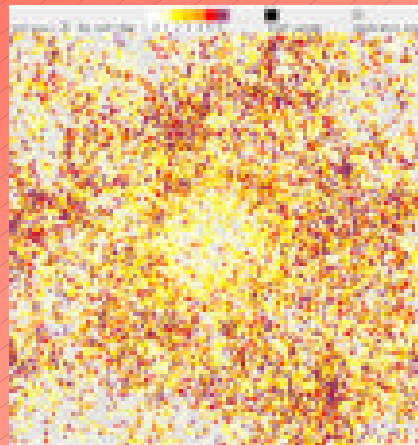
0 yr



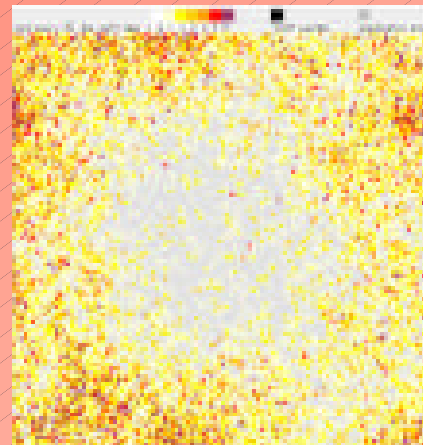
5 yr



10 yr



15 yr



20 yr

Is Eradication of CWD in Our Future?

