

Environmental Assessment of CWD Prions at the Beltrami County Deer Carcass Dump Site

Peter Larsen, Tiffany Wolf, Marc Schwabenlander
Minnesota Center for Prion Research and Outreach

Timeline of events



April 7,
2021

Beltrami County Farm CWD positive deer

Public notification of a CWD positive deer diagnosed on a Beltrami County cervid farm

April 28,
2021

MNPRO asked to investigate “carcass dump site”

MNPRO was asked by the MNDNR to travel to a site on public land that was disclosed by the cervid farmer as a location where carcasses were dumped.

May 2,
2021

MNPRO Team conducts site survey

Samples of bone, tissue, soil and plants were retrieved from the carcass dump site.

May 7,
2021

MNPRO informs DNR of preliminary positive CWD detection

A single sample from a long bone tested positive by RT-QuIC; DNR notified of preliminary result.

May 12,
2021

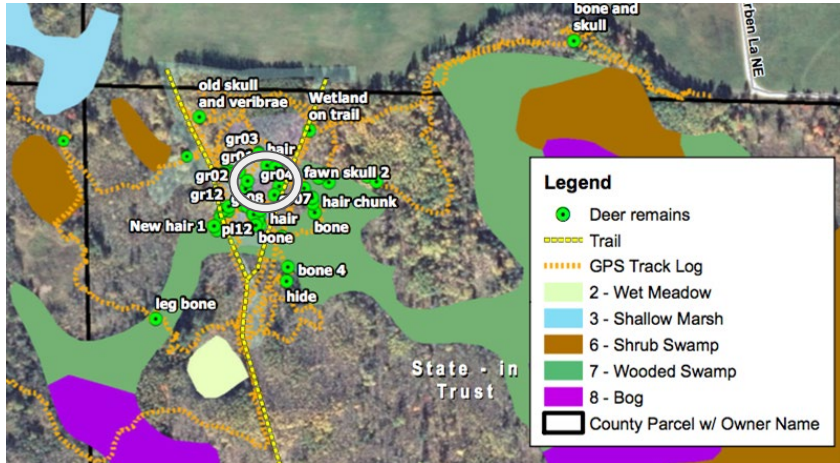
MNPRO confirms positive CWD results

Initial positive sample confirmed and a second presumptive positive identified.

Preliminary testing results

RT-QuIC testing in MNPRO

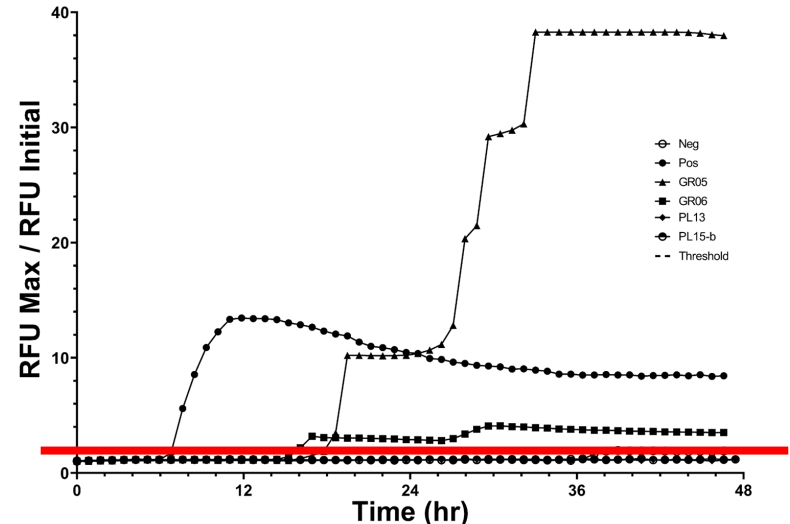
- 13 total samples tested



2 bone marrow samples CWD positive

- Same animal or two animals?

Beltrami Dump Site Bone Marrow RT-QuIC



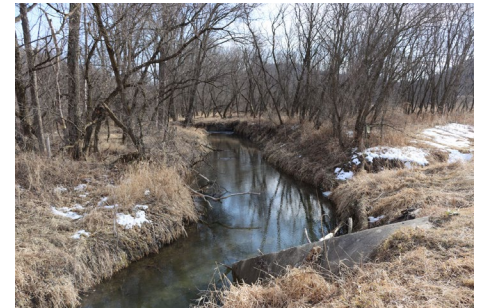
In-hand and potential samples

- MNPRO and DNR secured samples from at least 12 carcasses
- Must investigate prion content of additional deer remains in and around the site
- Need to secure soil and water samples for future testing



Environmental implications

- What is the extent to which CWD prions have contaminated the carcass dump site and surrounding area?
 - CWD prions can remain infectious in the environment for years
 - Prions can be transported by water
- Risk to the wild white-tailed deer population
 - Deer utilizing/ accessing the dump site over the past ~2 years should be considered as “exposed”



Budget and deliverables

Item	Unit cost	Qty	Estimated cost
<i>UMN Personnel</i>			
Faculty and Project staff	\$15,580	5	\$85,924
<i>RT-QuIC Testing</i>			
Dump site carcass remains	\$12.00	100	\$1,200
<i>Supplies and expenses</i>			
Laboratory and field consumables (PPE, tubes, etc.)	\$5,000	1	\$5,000
Soil and water sampling equipment	\$6,000	1	\$6,000
Open Access Publication fees	\$2,500	1	\$2,500
MN Travel*	\$1,521	5	\$7,608
Total			\$108,232

1. Estimate the total number of CWD positive carcasses
2. Collect environmental samples for future RT-QuIC testing
3. Preliminary risk assessment regarding CWD prion site contamination
4. Provide recommendations for environmental remediation strategies