



CWD RESPONSE PLAN

NRC Meeting
May 9, 2018

2012 CWD RESPONSE PLAN UPDATE: ORIGIN OF THE GUIDING PRINCIPLES

- Review of the last ten years of scientific literature (~240 references) as Appendix A
 - Current (to 2012) state of the science
 - Summarized into 11 principles to guide CWD management
 - Listed here verbatim from the Plan
- Where scientific findings 2012-2018 suggest notable additions to the Guiding Principles, they are mentioned here

GUIDING PRINCIPLES FOR CWD MANAGEMENT

1. “CWD is an infectious prion disease, and claims to the contrary are not scientifically credible”
2. “CWD is transmitted between animals by direct contact with infectious saliva, respiratory aerosols, urine, and feces. Infected animals are infectious for other animals before they appear sick. Infected animals inevitably succumb, although the amount of time that takes to happen can vary from months to years.”

GUIDING PRINCIPLES FOR CWD MANAGEMENT

3. “CWD is also transmitted indirectly from contaminated items in the environment such as soils where it persists for decades. Where the disease becomes established, environmental contamination likely drives CWD outbreaks perpetually, and may be the most critical factor limiting their control. Substantial environmental contamination with CWD may effectively define the threshold for when the disease is ‘established’.”

GUIDING PRINCIPLES FOR CWD MANAGEMENT

3. Additions:

- CWD prions are taken up by plants, bound by plant tissues

• Pritzkow, S. et al. 2015. Grass plants bind, retain, uptake, and transport infectious prions. *Cell Reports* 11:1168-1175.

• Rasmussen, J. et al. 2014. Can plants serve as a vector for prions causing chronic wasting disease? *Prion* 8:135-141.

GUIDING PRINCIPLES FOR CWD MANAGEMENT

4. “There is essentially no evidence that CWD can infect humans. While recognizing that some members of the public may perceive it as a risk, management of CWD need not assume it is a substantial threat to human health.”

GUIDING PRINCIPLES FOR CWD MANAGEMENT

4. Additions:

- Unpublished study (Czub) found transmission to macaques, yet other, published macaque studies (e.g. Race et al. 2018) have not.

“Five epidemiological studies, two studies on macaques and seven studies on humanized transgenic mice provided no evidence to support the possibility of transmission of CWD prions to humans.”

- Waddell, L., et al. 2016. Current evidence on the transmissibility of chronic wasting disease prions to humans-A systematic review. *Transboundary and Emerging Diseases* 65:37-49.

GUIDING PRINCIPLES FOR CWD MANAGEMENT

4. Additions:

- “Data on CWD prions and experience with other animal prion diseases suggest minimizing human exposure to these agents is prudent.”

- Miller, M. W., and J. R. Fischer. 2016. The first five (or more) decades of chronic wasting disease: lessons for the five decades to come. *Transactions of the North American Wildlife and Natural Resources Conference* 81:(in press).

GUIDING PRINCIPLES FOR CWD MANAGEMENT

5. “As CWD prevalence and perceived threats to human health increase, abandonment of hunting in infected areas may seriously limit the most practical approaches by which agencies may control the disease and deer populations, and have a potentially catastrophic impact on hunter recruitment.”

GUIDING PRINCIPLES FOR CWD MANAGEMENT

5. Additions:

“...we recommend implementing necessary protocols for disease management with the understanding that hunter perceptions may have negligible impact on harvest management.”

- Haus, J. M. et al. 2017. Hunter Perceptions Toward Chronic Wasting Disease: Implications for Harvest and Management. *Wildlife Society Bulletin* 41:294-300.

GUIDING PRINCIPLES FOR CWD MANAGEMENT

6. “The public supports lethal management to control wildlife disease when that control achieves desired ends. Non-hunters are largely unconcerned with CWD and its management. Hunters are mainly concerned with the effect of CWD on deer hunting and the safety of venison for human consumption.”

GUIDING PRINCIPLES FOR CWD MANAGEMENT

7. “CWD surveillance based solely on testing of hunter-harvested cervids has a low probability of detecting the disease, and may not be representative of the broader population. By the time cervids with clinical disease are detected, the prevalence of CWD in the population is likely to be over 1%, and the disease already effectively established.”

GUIDING PRINCIPLES FOR CWD MANAGEMENT

7. Additions:

- Hasn't held true thus far in MI; only symptomatic CWD-positive deer was the very first in Meridian Township; prevalence there is thus far low. In contrast, no symptomatic animals found yet in Kent/Montcalm Cos., despite prevalence of 1-2%.

GUIDING PRINCIPLES FOR CWD MANAGEMENT

8. "Effective CWD management relies on preventing establishment of the disease in the first place. Once CWD is established in an area, all methods tried to date have failed to eradicate the disease. Current evidence suggests that in those situations, cervid density reduction is no longer likely to be helpful. Nonetheless, density reductions in surrounding areas may help limit geographic spread."

GUIDING PRINCIPLES FOR CWD MANAGEMENT

9. “Density reductions should target entire family groups (does and their fawns) to minimize the probability of disease persistence, and yearling bucks to minimize the probability of disease spread via dispersal. Hunter harvest decisions depend most heavily on personal attitudes and are relatively unaffected by agency educational efforts. For these reasons, agency culling is likely to be more effective for controlling CWD than hunter harvest.”

GUIDING PRINCIPLES FOR CWD MANAGEMENT

10. “Management practices that increase biological carrying capacity (such as supplemental feeding by humans) may cause CWD to persist and spread, just as they do with other diseases such as bovine tuberculosis. Alternative strategies for allowing supplemental feeding to continue in a restricted manner do not mitigate the potential for CWD transmission.”
11. “Once established, CWD outbreaks (and the substantial costs of their management) can be expected to last for decades.”

THANK YOU



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