

**A review of Chronic Wasting Disease management strategies**



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# Very few Chronic Wasting Disease management methods have been evaluated which hinders evidence-informed decision making

**BACKGROUND:**

- Chronic Wasting Disease (CWD) is a highly contagious disease affecting cervids (deer, moose, elk) caused by a misfolded protein (prion)<sup>1</sup>
- As some prion diseases have crossed the species barrier, the zoonotic potential of CWD is a concern for human health<sup>1</sup>
- First discovered in the 60's in Colorado, CWD has rapidly spread across 31 US states and 5 provinces<sup>1,2</sup>
- There is no treatment or vaccine to cure or prevent CWD<sup>3</sup>
- There is no way to test live animals; tonsil and lymph node biopsies are conducted<sup>1,4</sup> (Image 1)
- As a result, CWD threatens ecosystems, livestock, and public health<sup>1</sup>
- We aim to identify effective management strategies for CWD to inform local responses



Image 1: CWD testing at BC Ministry

**METHODS:**

- Key terms of literature search: "CWD" or "chronic wasting disease"; and "risk", "risk perception", "perceive\* risk", "perception", "management" or "human dimensions" on Scopus, Web of Science, and PubMed
- Inclusion criteria: must discuss CWD management and/or wild cervid management strategies (Figure 1)

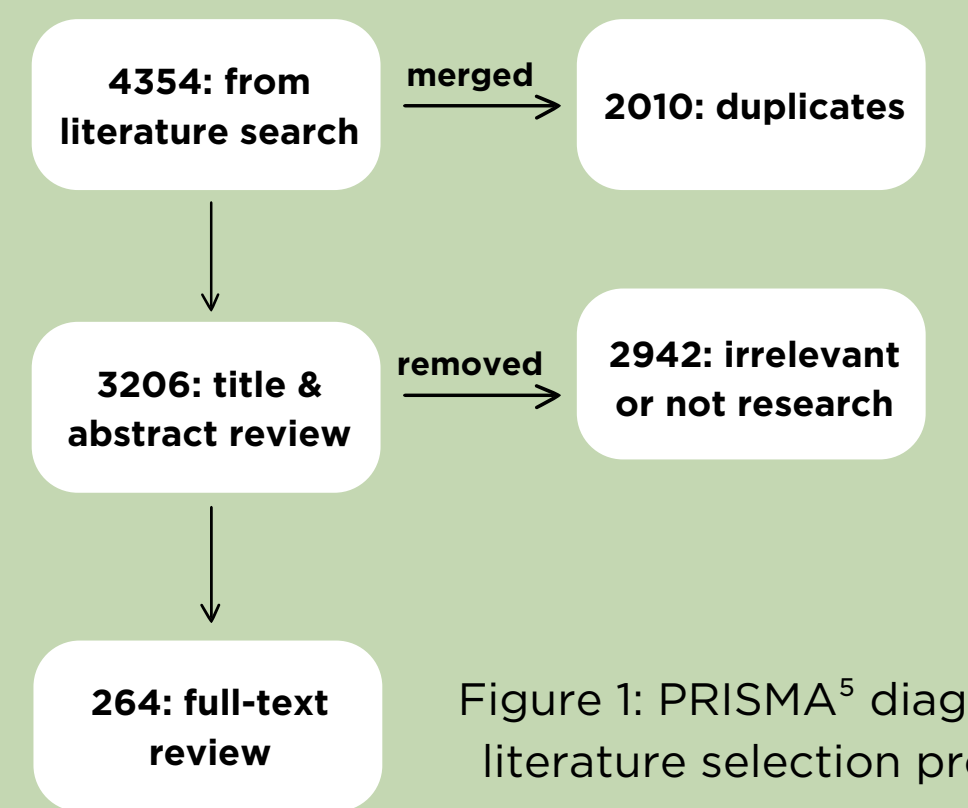


Figure 1: PRISMA<sup>5</sup> diagram of literature selection process



**RESULTS & DISCUSSION:**

- In most studies, management considerations have been theoretical, rather than applied in practice
- Theoretical approaches, such as mathematical models, can inform management by projecting possible outcomes of management strategies
- Many managers consider integrating multiple strategies to manage CWD<sup>6</sup>
- Proposed management strategies include: animal removal (sharpshooting, hunter-harvest), environmental management (fencing), legal restrictions (carcass transport and baiting), vaccination, and predation
- Early action and community engagement/support is important to all strategies<sup>7</sup>
- Management strategies must consider location-specific factors such as stakeholder and community opinions, landscape, biology, and resources<sup>7,8</sup>
- Further evaluation of management methods is needed to inform management decisions

**REFERENCES:**

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<sup>3</sup> Rivera et al. 2019. *Veterinary medicine*, 10, 123-139  
<sup>4</sup> Schneider et al. 2023. *PloS one*, 18(3), e0282356.  
<sup>5</sup> Tricco et al. 2018. *Ann Intern Med*. 2;169(7):467-473.  
<sup>6</sup> Jennelle et al. 2014. *PloS one*, 9(3): e91043  
<sup>7</sup> Holsman et al. 2010. *Human Dimensions of Wildlife*, 15:3, 180-193.  
<sup>8</sup> Robinson et al. 2013. *Landscape Ecol* 28, 1923-1925.

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