



COLORADO

Parks and Wildlife

Department of Natural Resources

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MEMORANDUM

To: Members of the Colorado Parks and Wildlife Commission

From: Heather Disney Dugan, Acting Director

Date: April 20, 2023

Subject: Chronic Wasting Disease Update for Parks and Wildlife Commission

Dear Commissioners,

This briefing summarizes CPW's mandatory chronic wasting disease (CWD) findings from the 2022-2023 hunting seasons. Results provide the first indication of whether CWD management actions taken for deer over the past 5 years have had an effect on CWD prevalence (estimated percent infected) in each herd. In summary, CWD prevalence increased in 4 herds, decreased in 3 herds, and remained about the same in 4 herds.

Background

Chronic wasting disease, a fatal neurological disease found in deer, elk, and moose, is well established in herds throughout much of Colorado. We have detected CWD in 40 of our 54 deer herds, 17 of 42 elk herds, and 2 of 9 moose herds. CWD prevalence is highest in deer and lowest in moose. This disease is always fatal and animals die from the disease within about 2-2.5 years of infection. CWD infection shortens the lifespan of infected animals. If infection rates become too high, CWD can affect a herd's ability to sustain itself.

In response to increasing CWD prevalence, the Parks and Wildlife Commission approved a statewide [CWD Response Plan](#) in 2019. One element was a 15-year mandatory testing plan, which will include three 5-year rotations for deer. Pilot work in 2017 and 2018 had shown that the number of deer submitted for testing is much higher through mandatory testing than for voluntary submissions, which allows CPW to generate reliable estimates of CWD prevalence at the herd level.

In addition, the CWD Response Plan establishes a compulsory management threshold, which means when prevalence exceeds 5% in adult (>2 years) male deer then some form of management action will be taken to reduce prevalence until it falls below the 5% threshold. CPW identifies various management actions in the plan that are available to local managers to



prescribe in herd management efforts, all of which have the potential to help reduce prevalence in deer herds.

CWD prevalence was assessed via mandatory testing in all 54 deer herds from 2017-2020; mandatory testing focused on elk in 2021. In 2022, CPW restarted the 5-year testing rotation and 11 deer herds were the first to be included in a second round of mandatory testing.

2022 Mandatory CWD Testing Results

CWD prevalence estimates decreased in 3 herds and remained about the same in 4 herds (Table 1). Additional data and robust analyses are needed over the next 9 years of mandatory testing to guide our interpretation of these results before we are in a position to show an association between prescribed management actions and CWD prevalence. However, these preliminary data are encouraging and suggest harvest-based management actions could be a promising CWD control strategy.

In addition, 4 herds have shown an increase in CWD prevalence, 3 significantly so (Table 1). Considering that various management actions were prescribed to each of the 11 herds, CPW will need to evaluate why prevalence increased in some herds and decreased in others.

Table 1. Change in prevalence between 1st and 2nd rounds of mandatory CWD testing for 11 Colorado mule deer herds. Summary of management actions prescribed by local managers to reduce or maintain low CWD prevalence. The point estimate for CWD prevalence decreased (blue), increased (red), or remained about the same (yellow) between testing rounds. Prevalence estimates with 95% confidence intervals are available for every deer herd in the 2023 Big Game License Recommendation Summary report.

DAU	Herd Name	1 st Round Mandatory Testing: Adult Male Prevalence	2 st Round Mandatory Testing: Adult Male Prevalence	Management Actions Taken to Reduce CWD Prevalence
D-04	Red Feather	5.6%	4.7%	Created month-long late season buck hunt to increase removal of infected males
D-07	White River	15.3%	23.6%	Increased buck harvest objective and licenses in 3rd and 4th seasons, increased PLO seasons and either-sex PLO licenses, redistributed hunter pressure in later seasons, increased doe harvest in hot spot areas
D-08	State Bridge	3.8%	3.4%	Sustained long-term harvest pressure on bucks, male and either-sex licenses increased since 2013 to decrease the sex ratio.
D-09	Middle Park	3.5%	8.0%	Sustained long-term harvest pressure on bucks and does to manage to HMP objectives, long history of managing for hunting opportunity.

D-10	Big Thompson	12.0%	8.0%	Increased male, female, and private-land-only (PLO) licenses
D-17	Bailey	5.4%	2.5%	Increased male licenses to decrease the sex ratio, primary focus on increasing PLO harvest
D-19	Uncompahgre	3.9%	14.0%	Created August either-sex PLO rifle hunt that increased harvest within a CWD hotspot, increased muzzleloader, 2nd, 3rd, and PLO licenses on low elevation private lands, managed to lower end of sex ratio objective
D-27	Boulder	19.3%	18.5%	Increased PLO licenses
D-40	Cimarron	1.5%	3.9%	Created August either-sex PLO rifle hunt that increased harvest within a CWD hotspot, managed to lower end of sex ratio objective
D-42	Rifle Creek	10.0%	9.0%	Increased male licenses in 3rd and 4th seasons, managing to lower end of the sex ratio objective
D-43	Sweetwater Creek	13.6%	6.7%	Increased male licenses to reduce sex ratio, managing to lower end of sex ratio objective

Further Analyses

CPW will continue analyses of these CWD prevalence changes by comparing various factors between herds and the respective management actions prescribed. Comparing changes to license quotas by season, dates of harvest and prevalence estimates by season, post-hunt buck/doe ratios, abundance of bucks and does, and the percent change in buck licenses and buck harvest, etc., all in relation to changes in CWD prevalence, should improve our ability to evaluate relationships between various management actions and disease prevalence.

In our more than 40-year history working with CWD, one of the most important lessons we have learned is that we rarely see immediate changes in CWD dynamics. This is a slow-moving disease and changes in prevalence (both increases and decreases) may not be readily apparent. Multiple repeated prevalence estimates over the long-term along with consistent management application will be necessary to truly evaluate patterns of change in relationship to management actions.

Lastly, the severe winter conditions seen in Northwestern Colorado during 2022-2023 generated many questions on potential implications for CWD dynamics in the region. Harsh winter conditions may cause more rapid mortality of infected deer in the clinical phase of disease and could reduce the number of infected animals on the landscape. Overall population reductions associated with harsh winter conditions may also affect deer/elk density on the landscape and reduce direct animal-to-animal transmission. On the other hand,

prolonged concentrations of deer and elk on very limited winter ranges could facilitate increased contact as well as environmental accumulation of CWD prions (infectious agent) that could increase both direct and indirect transmission pathways. Ultimately, the interplay of weather conditions, changing population dynamics, and changes in habitat use associated with a severe winter limit our capacity to predict how CWD prevalence might change. As we proceed with analyses to evaluate factors influencing CWD prevalence in Colorado wildlife populations, incorporating changes associated with periodic severe winters will be an important consideration.

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