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Environmental Quality Council
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FINAL REPORT TO THE 67TH MONTANA LEGISLATURE

**TRACKING THE SPREAD:
THE CONTINUED FIGHT
AGAINST CWD IN
MONTANA**

2019-2020

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EXECUTIVE SUMMARY

This report is a summary of the work of the Environmental Quality Council (EQC) study of chronic wasting disease (CWD) as outlined in the EQC 2019-2020 work plan. Members received additional information and public testimony on the subject, and this report is an effort to highlight key information and the processes followed by the EQC in reaching its conclusions. To review additional information, including audio minutes, and exhibits, visit the EQC website:

<http://leg.mt.gov/eqc>.

Chronic wasting disease (CWD) is a neurologic disease that is always fatal and affects cervids: deer, elk, moose, and caribou. During the 2017-2018 interim, the EQC studied this issue pursuant to Senate Joint Resolution 9 (2017).¹ At the time the resolution passed, Montana had no confirmed cases of CWD. The Department of Fish, Wildlife, and Parks (FWP) was in the process of updating its CWD response plan when officials confirmed the first positive case during focused surveillance south of Billings in October 2017.²

This interim, the EQC opted to continue tracking the spread of CWD in Montana and monitoring FWP's management efforts after the disease unexpectedly turned up in urban deer in Libby in the Spring of 2019. As part of its study, the EQC:

- Toured the Libby CWD management zone and watched demonstrations of test sample gathering/packaging;
- Received regular testing result updates, reviewed testing procedures and costs, and monitored implementation of CWD testing capabilities at the state Veterinary Diagnostic Lab in Bozeman;
- Reviewed the state CWD management plan, Libby incident response, education and outreach efforts, and impacts on the 2019 and 2020 hunting seasons;
- Reviewed the history of CWD management actions in other affected states, including Colorado, Wyoming, and Wisconsin;
- Held panel discussions on the potential for CWD to impact public health and the latest research on transmissibility of CWD between species;
- Held panel discussions on the evolution of CWD testing, including the possibility of implementing the RT-QuIC method;

¹ Kolman, Joe, [Tracking the Spread: SJ 9 Keeps Tabs on CWD Fight](#), September 2018

² <http://fwp.mt.gov/fishAndWildlife/diseasesAndResearch/diseases/chronicWastingDisease/default.html>, January 7, 2020.

- Monitored the work of the state lab advisory committee (HB 596, 2019) to develop plans to construct new facilities for the Veterinary Diagnostic Laboratory and other state laboratories in Bozeman. Three EQC members, Rep. White, Rep. Hamlett, and Sen. Flowers, served on the committee.

Finding and Recommendation

On September 9, 2020, the EQC found that chronic wasting disease is a widespread problem across Montana and recommended that future legislatures support the provision of adequate facilities for testing and research of CWD tissue and continue to look for ways to manage and control spread of the disease.

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TRACKING THE SPREAD, 2019-2020

CWD BACKGROUND

Chronic wasting disease (CWD) is a neurologic disease that is always fatal and affects cervids: deer, elk, moose, and caribou. During the 2017-2018 interim, the EQC studied this issue pursuant to Senate Joint Resolution 9 (2017).³ At the time the resolution passed, Montana had no confirmed cases of CWD. The Department of Fish, Wildlife, and Parks (FWP) was in the process of updating its CWD response plan when officials confirmed the first positive case during focused surveillance south of Billings in October 2017.⁴

CWD is commonly transmitted from animal to animal. The prions from affected animals are present in saliva, feces, and urine as well as other bodily fluids and tissues. The prions can remain infectious in grass or soil for at least ten years.⁵

FWP expanded its CWD surveillance in 2018 and found 21 cases in deer in counties along Montana's northern border (from Liberty County east to North Dakota, roughly three-quarters of the border's length) and another five cases south of Billings.⁶

CWD unexpectedly turned up in urban deer in Libby in the Spring of 2019; FWP ratcheted up surveillance there and in other areas where the disease was known to exist. The department also offered free testing to hunters statewide.

In 2019, out of 6,927 samples taken after April 1, results were positive for 136 animals (mostly deer; one elk and one moose) and identified new affected areas, including the Ruby Valley in southwest Montana; parts of Yellowstone and Treasure Counties east and northeast of Billings; Rosebud, Big Horn, and Powder River Counties south and east of the Northern Cheyenne Reservation; McCone County east of Fort Peck Reservoir; and Prairie County just to the south.⁷ A detailed map from FWP is provided on the next page.

In January 2020, an elk tested positive for CWD on a game farm in eastern Montana. In May 2020, a white tail buck tested positive in Gallatin County north of Bozeman.

³ Kolman, Joe, [Tracking the Spread: SJ 9 Keeps Tabs on CWD Fight](#), September 2018

⁴ <http://fwp.mt.gov/fishAndWildlife/diseasesAndResearch/diseases/chronicWastingDisease/default.html>, January 7, 2020.

⁵ Dr. Debbie McKenzie, testimony to EQC, May 27, 2020.

⁶ *Ibid.*

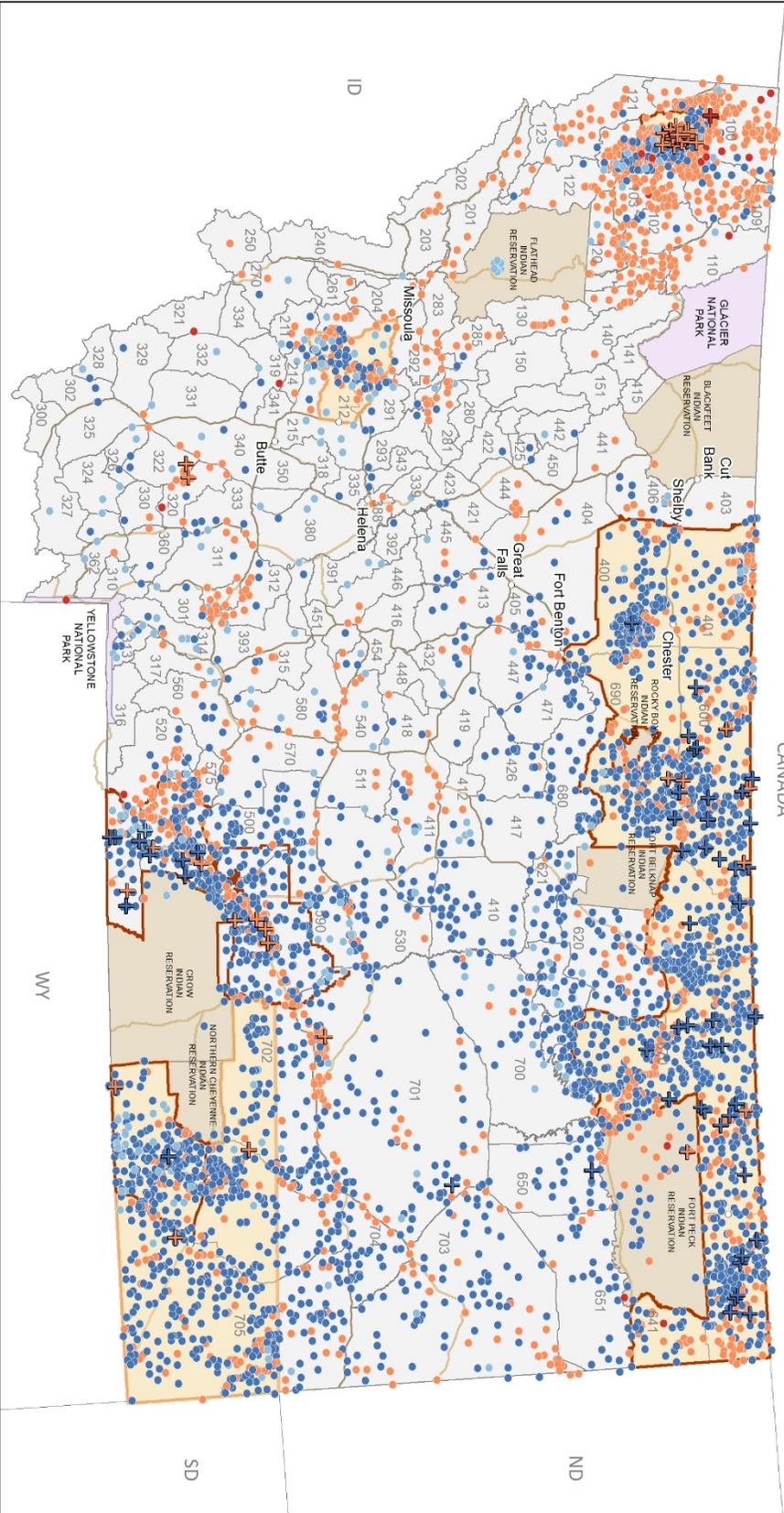
⁷ Email, Dr. Emily AlMBERG, FWP, January 8, 2020.

TRACKING THE SPREAD, 2019-2020

2019 Montana Chronic Wasting Disease Surveillance

State-wide CWD Sampling

MONTANA FWP



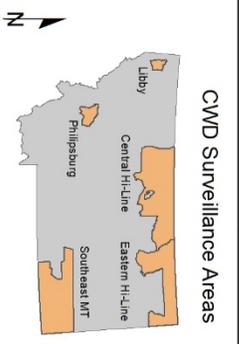
CWD samples within Montana	
Total *	Positive or suspect
Mule deer 3786	+ 53
White-tailed deer 2709	+ 81
EIK 296	+ 1
Moose 24	+ 1

CWD Management Zone
 2019 Priority CWD Surveillance Area
 Deer and Elk Hunting District
 Interstate and Highway

Updated: 20200107

Map produced by: MTFWP Geographic Data Services

* Samples with an unknown location or of an unknown species are not represented in the map or table. Hunting districts valid for the 2019 hunting season. CWD sample data from MTFWP Health Lab. Reference data from MTFWP and Montana State Library.



TRACKING THE SPREAD, 2019-2020

In June 2020, the Fish and Wildlife Commission adopted a revised CWD management plan and a requirement that hunters leave the head and spinal column of all harvested deer, elk, and moose at the site of the kill or to dispose of them in a class II landfill.⁸

The EQC visited the Libby CWD Management Zone in September 2019 where FWP demonstrated for council members and area legislators its deer trapping equipment specially developed by staff as well as methods for collecting tissue samples for CWD testing.



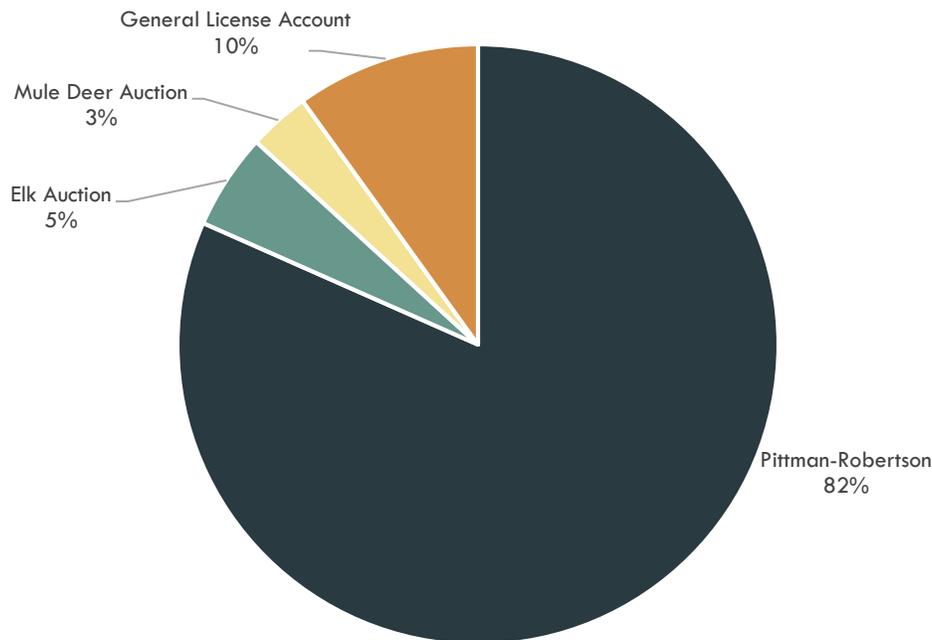
⁸ [Montana Chronic Wasting Disease Management Plan](#), April 19, 2020.

TRACKING THE SPREAD, 2019-2020

TESTING & FUNDING

Through House Bill 2, the 2019 Legislature appropriated nearly \$400,000 each year of the 2020-2021 biennium to FWP for disease surveillance. Seventy-five percent of the funding comes from federal Pittman-Robertson money. The required 25 percent state match comes from general license and elk and mule deer license auction revenue.

Expenditures by Funding Source, FY 2020



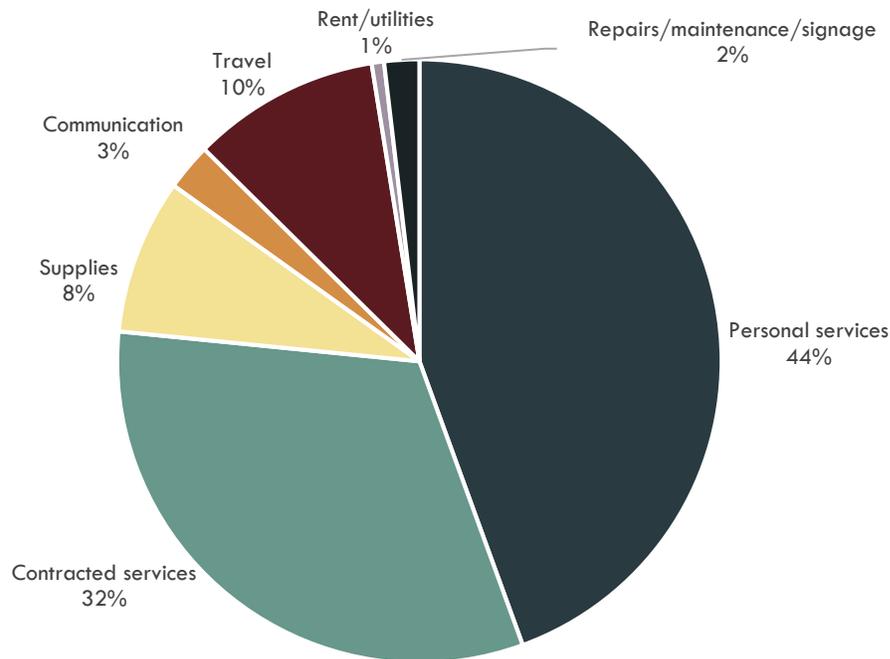
DATA PROVIDED BY FWP

In FY 2020, FWP spent \$440,778.92, largely for personal services, including some temporary staff and 27 seasonal short-term employees who helped gather and organize samples to be sent to the Colorado State University (CSU) lab for testing.⁹

⁹ The above expenditures are from SABHRS as of 7/9/2020 and do not represent the FY total anticipated expenditures.

TRACKING THE SPREAD, 2019-2020

Expenditures by Type, FY 2020



DATA PROVIDED BY FWP

CSU's testing fees account for most of the contracted services noted in the above chart (\$125,971 of \$141,646). The preliminary CWD test costs \$17 under [FWP's contract](#) with CSU. If the test comes back positive, CSU performs a \$35 confirmatory test.

LEPO staff analysis of testing data for the 2018 general season found the total average time it took for FWP to process a testing sample and get results back from CSU was 13.2 calendar days. In 2019, according to FWP, the average time elapsed between sample collection from a hunter-harvested deer and the posting of test results on the agency's website was 18.6 calendar days.¹⁰

This interim, the Montana Veterinary Diagnostic Laboratory (VDL) in Bozeman used federal funds to purchase the necessary equipment and materials to conduct the preliminary and confirmatory CWD tests. COVID-19 delayed some deliveries, training, and certifications, but the lab expects to perform 11,000 CWD tests for FWP during the 2020 hunting season. VDL Director, Dr. Greg Juda, says his lab's fees are less than CSU's and the turnaround time should be shorter.¹¹

¹⁰ Email, Dr. Emily Almberg, FWP, January 8, 2020.

¹¹ The VDL's fee for the preliminary CWD test is \$14 and the fee for the confirmatory test is \$34.

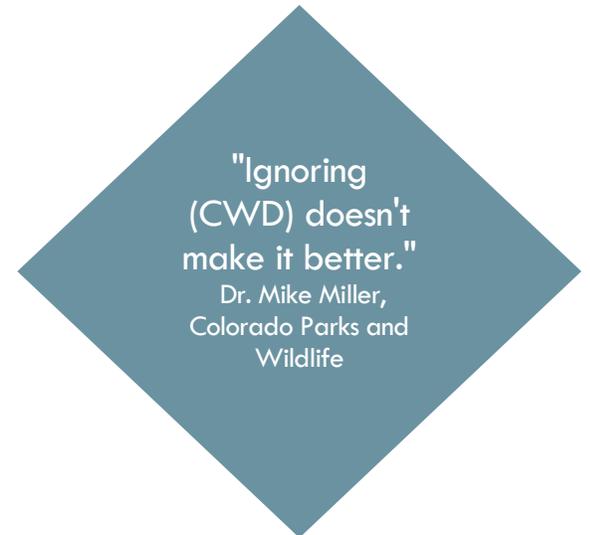
TRACKING THE SPREAD, 2019-2020

OTHER STATES' EXPERIENCE

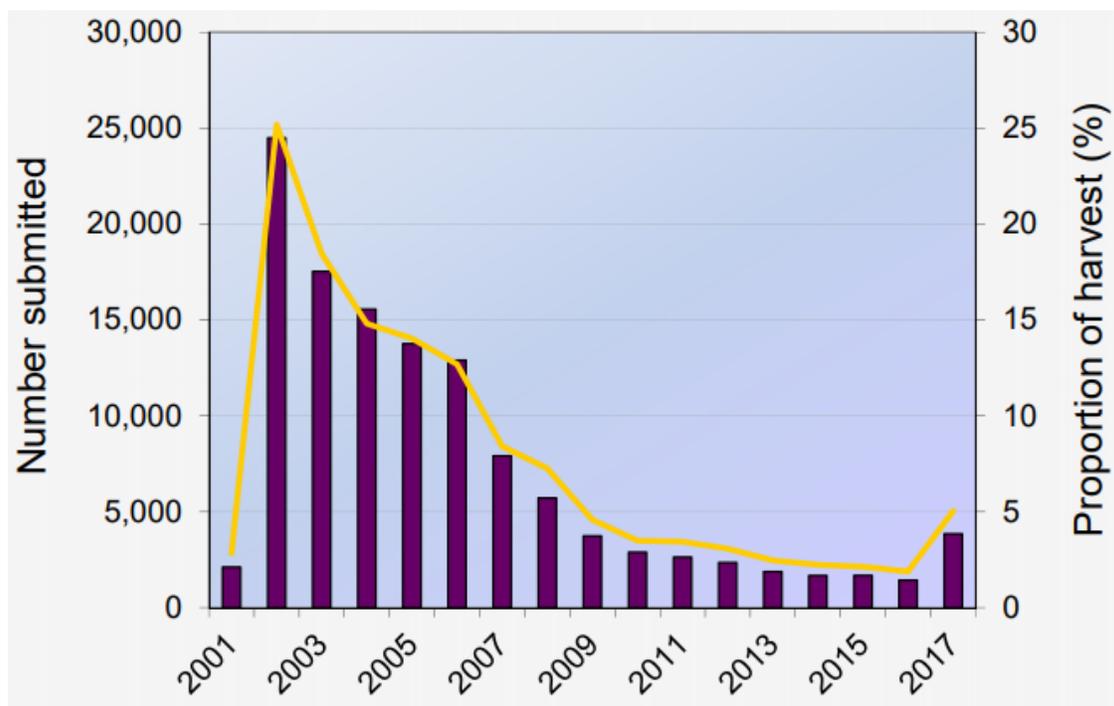
The overarching message the EQC heard from other states with CWD is "don't do nothing". In Colorado, where CWD's presence likely goes back to at least the 1950s, Dr. Mike Miller, Colorado Parks and Wildlife Veterinarian, says the state was slow in responding. In the 1990s, he says Colorado realized it needed better tools to detect CWD and in the early 2000s spent time trying to control the disease. Then it stopped, which Dr. Miller told the EQC in January 2020 is one of the agency's more serious mistakes.

Colorado has 54 deer populations, two-thirds of which are infected with CWD. Prevalence ranges from fewer than 1 in 100 bucks to 25 percent depending on the area. The prevalence in Colorado's elk is much lower, with about a third of those herds infected.

In the last five years, Dr. Miller says the state entered a period of revived interest and focus on trying to bring CWD under control. He says hunters haven't done much voluntary testing over the years, so his agency instituted mandatory sampling in the last three years to monitor the disease more effectively.



Colorado CWD Testing: Submission Trends for Harvested Deer/Elk

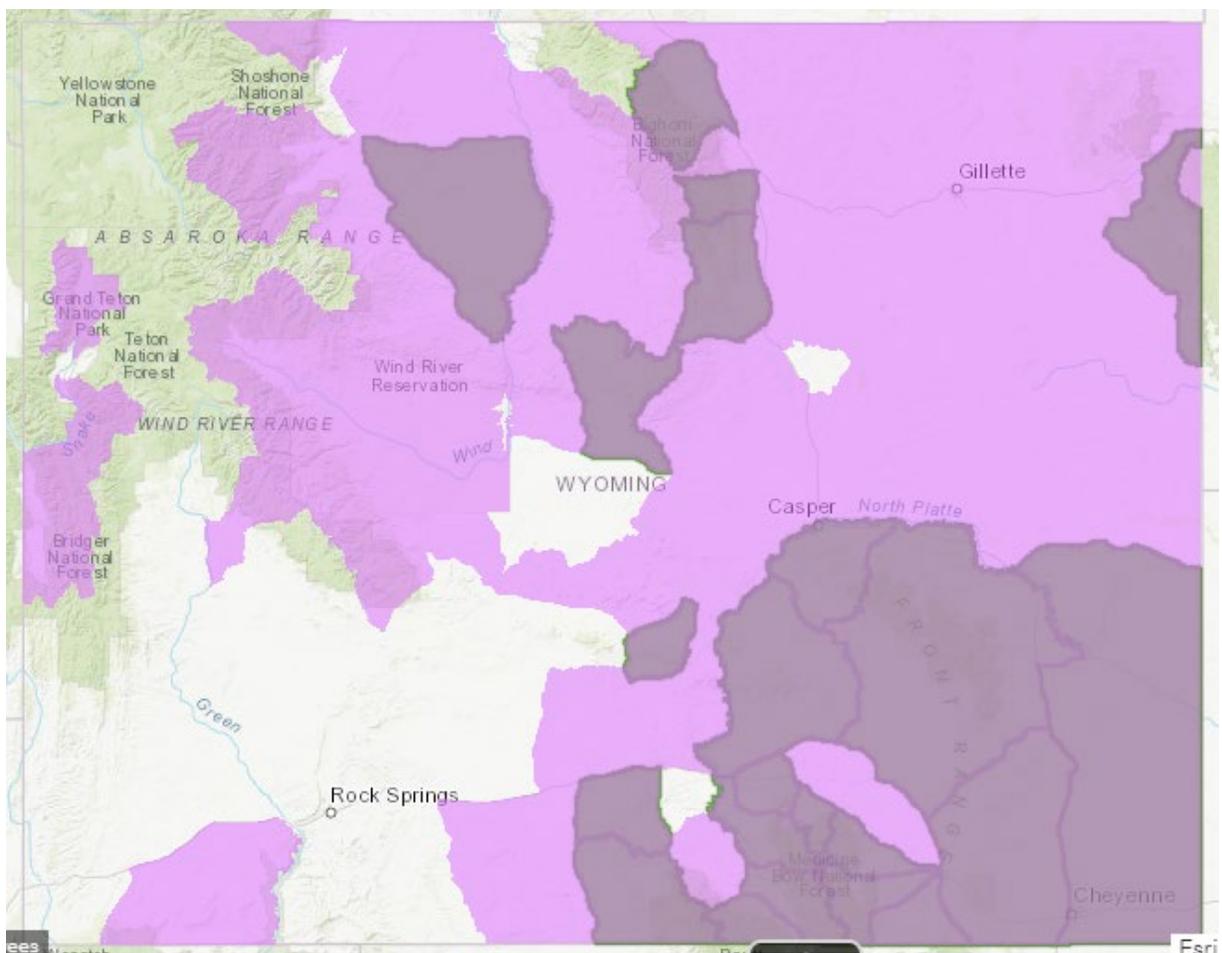


TRACKING THE SPREAD, 2019-2020

Dr. Miller says a recent survey of Colorado hunters found they prefer to balance hunting opportunity with disease control, but if the department errs on one side, it should be the control side. Dr. Miller says nearly 80% of respondents thought actions should be taken to reduce CWD prevalence, and his agency is focused primarily on harvest management.

Wyoming first detected CWD in 1985 and now has it across much of the state. The map below shows CWD positive mule deer hunt areas in lighter purple and CWD positive elk hunt areas in darker purple.

CWD in Wyoming, 2018



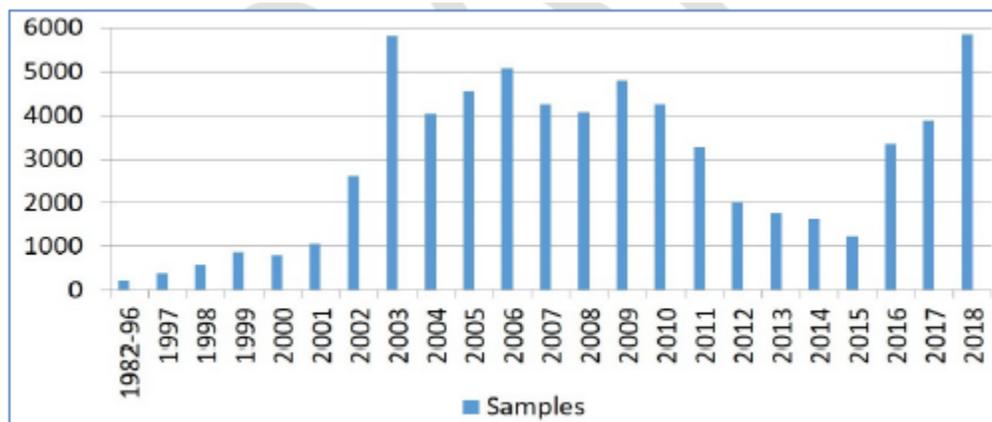
<https://wgfd.wyo.gov/Wildlife-in-Wyoming/More-Wildlife/Wildlife-Disease/CWD-in-Wyoming-Wildlife/CWD-Map>

TRACKING THE SPREAD, 2019-2020

As of September 2019, CWD has been found in 84% of Wyoming's mule deer herd.¹² The Wyoming Game and Fish Department released an updated draft CWD management plan late last year, developed by a 30-person working group. The plan, up for consideration by the Game and Fish Commission in mid July, 2020, says management strategies will emphasize hunter harvest and reducing artificial animal concentrations, including on urban green spaces, agricultural lands, and the state's elk feedgrounds.

Like Colorado, Wyoming is inconsistent with sampling harvested animals. The draft CWD management plan says while voluntary sample submission is preferred, the department may require mandatory submission.

Total CWD Samples Tested by Year in Wyoming



Source: [Draft WY CWD management plan](#), 11/27/19

In January 2020, the EQC asked how other states regulate the transport of harvested animals in light of CWD. The Michigan Department of Natural Resources published a [compilation](#) of regulations from other states and Canadian provinces in October 2019.

The compilation says 19 states and five provinces ban the import of hunter-harvested cervid carcasses and certain parts from any state or province. Twenty-one states and one province, including Montana, ban such imports only from states or provinces where CWD has been detected. Nine states and five provinces have no particular ban in place.

Many states also restrict the baiting and feeding of wild cervids to help limit artificial concentrations of animals. Some states and provinces regulate the use of cervid lures to prevent the inadvertent spread of

¹² <https://www.gohunt.com/read/news/wyoming-releases-new-cwd-management-plan#gs.adwf55>, July 9, 2020.

TRACKING THE SPREAD, 2019-2020

CWD-contaminated materials.¹³ Montana prohibits the use or sale of deer or elk urine to mask human odor if the urine originated in a state or province with documented occurrences of CWD ([Senate Bill 173, 2017](#)).

PUBLIC HEALTH & THE LATEST RESEARCH

Dr. Ryan Maddox, epidemiologist with the Centers for Disease Control (CDC), told the EQC in January 2020 there's no evidence to date of CWD transmissibility to humans, but there is concern because the disease is a form of transmissible spongiform encephalopathy like mad cow disease, known as Creutzfeldt-Jakob in humans. The question remains whether the increased number of infected animals will lead to increased human exposure and, one day, a human case. The CDC continues to recommend that animals harvested in areas where CWD is known to be present be tested, and the meat not consumed if the animal is positive.

In May 2020, Dr. Debbie McKenzie from the University of Alberta spoke with the EQC about her latest research on the mutation of CWD as it passes between species and how that mutation can lead to transmissibility to previously unaffected animals.



**Normal protein movements
e.g. in an enzyme**



**Conversion into a
dangerous conformation**

FROM H. WILLE, PROVIDED BY DR. DEBBIE MCKENZIE, MAY 2020

¹³ [Montana Chronic Wasting Disease Management Plan](#), April 19, 2020, page 4.

TRACKING THE SPREAD, 2019-2020

Dr. Brent Race from Rocky Mountain Laboratories in Hamilton, Montana, told the EQC the immune system doesn't read TSEs as abnormal and therefore doesn't have a defense response like it does to bacteria. Dr. McKenzie said some vaccine candidates look promising for cervids, but there's no effort to develop a human vaccine.

TSEs have a long incubation period, making them hard to detect until an animal is visibly sick. Dr. Race says there's research to see if a new testing method, known as RT-QuIC, can yield earlier results from live animals.

Dr. Ed Hoover from Colorado State University's College of Veterinary Medicine and Biomedical Sciences told the EQC in July 2020 the RT-QuIC can return CWD results in a 24-hour period using samples from rectal and tonsil tissue. However, the RT-QuIC is not a USDA-approved diagnostic tool for CWD.

At its September 2020 meeting, the EQC learned about the approval process from Dr. Tracy Nichols with the USDA APHIS Cervid Health Program. The program is finalizing a standard testing procedure to evaluate the reliability and accuracy of the RT-QuIC method for CWD.

Dr. Nichols cautioned that RT-QuIC is not a carcass-side test and may have limited application for wildlife disease surveillance. She said it can take several days to get results and there are concerns about cross contamination of tools and samples between animals.

There's also a lack of commercially available substrate to conduct the test. The U.S. Geologic Survey is providing substrate for the USDA's evaluation process, but for the RT-QuIC to be approved, Dr. Nichols said another cost-effective source of substrate must be secured.