

Washington Department of Fish and Wildlife's Chronic Wasting Disease Surveillance Program Annual Report

July 2023 – June 2024



Washington
Department of
**FISH &
WILDLIFE**

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Authors

Melia T. DeVivo, Ungulate Research Scientist
Hunter Westacott, Chronic Wasting Disease Surveillance Coordinator

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Executive Summary

Chronic wasting disease (CWD) is a fatal neurologic illness of cervids (members of the deer family Cervidae) caused by a prion protein. Free-ranging moose, elk, mule deer, white-tailed deer, and caribou are all known to be naturally infected and currently 34 states, four Canadian provinces, Norway, Finland, and Sweden have documented CWD in their wild cervid populations. In Washington, the Washington Department of Fish and Wildlife (hereafter “the Department”) used federal funds to test 6,133 cervids statewide from 2001-2011. After federal funding was no longer available, the Department tested only animals suspected of CWD based on non-specific clinical signs from 2012-2020. The first detection of CWD in the state of Washington was confirmed in July 2024. The sample was submitted to Washington Disease Diagnostic Laboratory (WADDL) with a batch of other samples collected between February and June of 2024.

In 2021, as CWD detections moved closer to Washington each year, the Washington State Legislature prioritized CWD surveillance by providing the Department budget proviso funds to expand efforts and begin systematic surveillance. At that time, the closest detection to Washington was in Libby, Montana, thus the Department prioritized the four most northeastern CWD Surveillance Units (CSUs) described in the CWD Management Plan. During the 2021-2022 hunting season, Idaho Department of Fish and Game detected CWD for the first time in two mule deer near the Slate Creek drainage near Lucile. This was the first time CWD was detected in a bordering jurisdiction to Washington, and in response, the Department expanded surveillance throughout the eastern region (hereafter “Region 1”). In January of 2024, the Province of British Columbia confirmed two positive cases of CWD in the Kootenay region in the eastern portion of the state. The first came from a hunter harvested mule deer buck and the second from a road-killed white-tailed doe sampled as part of their CWD surveillance program. This makes British Columbia the fourth province with CWD positive deer found in their wild populations, and the second time CWD has been detected in a bordering jurisdiction to Washington. This report describes the CWD surveillance program conducted in Region 1 during Surveillance Year (SY) 2023 (July 1, 2023- June 30, 2024).

During SY23, the Department focused efforts to collect samples from adult (≥ 1 year old) white-tailed deer, mule deer, and elk in 11 CSUs in Region 1. These 11 CSUs encompassed 27 Game Management Units (GMUs) that were combined to achieve sampling units of approximately 15,000 deer per CSU. This estimate of deer per CSU is based on harvest within administrative units and is not an estimate of biological population size. Our goal was to sample 300 deer in each CSU to achieve 95% confidence of detecting CWD at 1% prevalence (i.e., the percentage of the population that was affected by CWD during the time samples were collected).

The Department collected 796 samples during SY23 and 766 were suitable for testing. Thirty samples were either the incorrect tissue type, likely salivary gland, abscessed, too decomposed, or an inadequate amount of tissue was collected and could not be tested for CWD. Chronic wasting disease prions were detected in one of the testable samples. Of the testable samples, 413 were from white-tailed deer (348 male, 130 female), 280 mule deer (207 male, 73 female), 36 Rocky Mountain elk (9 male, 27 female) and one female moose that was part of a research study. Five samples collected were submitted for testing based on suspicious clinical signs and CWD was not detected (one sample was not testable; however, this animal was a fawn and likelihood of clinical CWD is low for this age-class).

The first detection of CWD in the state of Washington was confirmed in July 2024 in CSU W47. The pre-detection surveillance plan helped the Department detect this case of CWD, however, sample sizes continue to limit the Department's ability to conclude with 95% confidence that CWD was not present at 1% prevalence in any of the CSUs in Region 1. During the surveillance year, all samples were submitted voluntarily. The detection was known after the surveillance year ended; therefore, details of the response actions are unknown at the time of report writing. The Department will reference the actions outlined in the Washington State Chronic Wasting Disease (CWD) Management Plan to guide the initial emergency response and subsequent actions.

Introduction

Chronic wasting disease (CWD) is a fatal neurologic illness of cervids (members of the deer family Cervidae) caused by a prion protein. Free-ranging moose, elk, mule deer, white-tailed deer, and caribou are all known to be naturally infected and currently 34 states, 4 Canadian provinces, Norway, Finland, and Sweden have documented CWD in their wild cervid populations.

The first documentation of CWD was in captive deer at a Colorado research facility in the late 1960s. It was later found in wild deer in Colorado and Wyoming in the early 1980s. During the 1990s, CWD was detected at several captive facilities in Canada, South Dakota, Oklahoma, and Nebraska. Since the 2000s, CWD has spread throughout the continental United States, affecting free-ranging and captive cervids in the Midwest, Southwest, and some states along the East Coast. Parts of the Northeast, Southeast, Oregon, Arizona, Nevada, and Alaska have not detected CWD to date; however, a lack of detection does not equate to freedom from disease.

Surveillance for CWD is conducted at the state or provincial level usually by the local wildlife management agency. Therefore, resources to conduct CWD surveillance are dependent on the local jurisdiction and their priorities for wildlife management, which can vary dramatically. In the 2000s, federal funds were available to states to conduct CWD surveillance, but funding ceased by 2011. Many states reverted to testing only those animals that showed non-specific clinical signs associated with CWD, such as weight loss, ataxia, abnormal behavior, excessive salivation, and excessive drinking and urination. Unfortunately, given the long incubation time before deer develop outward signs of CWD, waiting to observe and detect clinical signs in wild animals allows CWD transmission to occur undetected for potentially months to years. Implementing a surveillance program to test apparently healthy wild cervids increases the chances of early detection and will help wildlife managers respond quickly to an outbreak of CWD.

In Washington, the Washington Department of Fish and Wildlife (hereafter “the Department”) used federal funds to test 6,133 cervids statewide from 2001-2011. After federal funding was no longer available, from 2012-2020 the Department tested only animals suspected of CWD based on those non-specific clinical signs previously described. Chronic wasting disease was not detected in any animals during this time.

With CWD detections closer to Washington each year, the Washington State Legislature prioritized CWD surveillance by providing the Department budget proviso funds in 2021 to expand efforts and begin systematic surveillance. At that time, the closest detection to Washington was in Libby, Montana, thus the Department prioritized the four most northeastern CWD Surveillance Units (CSUs) described in the CWD Management Plan. During the 2021-2022 hunting season, Idaho Department of Fish and Game detected CWD for the first time in two mule deer near the Slate Creek drainage near Lucile. This was the first time CWD was detected in a bordering jurisdiction to Washington, and in response, the Department expanded surveillance throughout the eastern region (hereafter “Region 1”). In January of 2024, the Province of British Columbia confirmed two positive cases of CWD in the Kootenay region in the eastern portion of the state. The first came from a hunter harvested mule deer buck and the second from a road-killed white-tailed doe sampled as part of their CWD surveillance program. This makes British Columbia the fourth province with CWD positive deer found in their wild populations, and the second time CWD has been detected in a bordering jurisdiction to Washington. This report describes the CWD surveillance program conducted in Region 1 during Surveillance Year (SY) 2023 (July 1, 2023 – June 30, 2024).

Surveillance Area and Sample Size

During SY23, the Department focused efforts to collect samples from adult (≥ 1 year old) white-tailed deer, mule deer, and elk in 11 CSUs in Region 1 (Fig. 1). These 11 CSUs encompassed 27 Game Management Units (GMUs) that were combined to achieve sampling units of approximately 15,000 deer (white-tailed deer and mule deer) per CSU. This estimate of deer per CSU is based on harvest within administrative units and is not based on rigorous population estimation techniques. Deer harvest was used to delineate CSUs rather than elk because CWD prevalence is greater in deer populations relative to sympatric elk, thus have a higher probability of detection if present in deer populations. Harvest in this area is primarily antlered deer with very few antlerless opportunities. Research has shown that adult male deer tend to have higher occurrence of CWD compared to females and fawns in the same population. While the sampling strategy was not weighted using population demographics, hunting regulations opportunistically provided samples that increased the probability of detecting CWD. Our goal was to sample 300 deer in each CSU to achieve 95% confidence of detecting CWD at 1% prevalence (i.e., the percentage of the population that was affected by CWD during the time samples were collected). Until better estimates of deer populations are available, these methods for allocating sampling efforts and determining disease status within Washington will be used with these limitations in mind when interpreting results. Samples were collected from all cervid species within Region 1; however, the target species (i.e., greater resource allocation to collect samples from these species) were deer (e.g., white-tailed deer and mule deer) and elk. While moose are susceptible to CWD and are known to become infected in the wild, the number of moose infected with CWD in North America is considerably lower likely due to their lower densities and limited herding behavior compared to deer and elk.

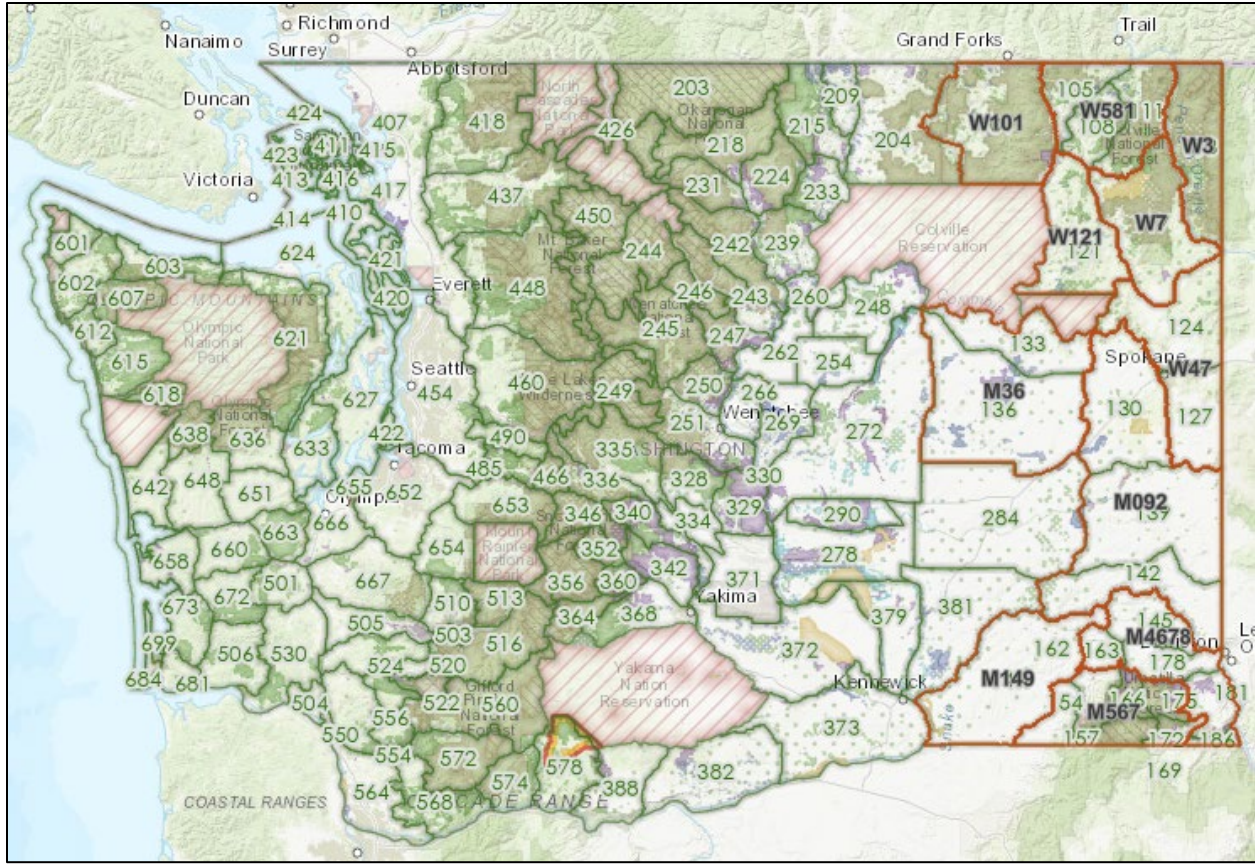


Fig 1. Chronic wasting disease surveillance units (CSUs W101, W581, W3, W7, W121, W47, M36, M092, M149, M4678, M567) that were made up of a combination of 27 Game Management Units (GMUs 101-186) located in eastern Washington were the focus of sampling efforts for the CWD surveillance program during Surveillance Year 2023 (July 1, 2023 – June 30, 2024)

Methods

Medial retropharyngeal lymph nodes (RPLNs) were collected from dead cervids and submitted to the Washington Animal Disease Diagnostic Laboratory at Washington State University in Pullman, WA where they were tested using an enzyme-linked immunosorbent assay (ELISA) for detecting CWD prions. If insufficient tissue was collected for the ELISA, the remaining RPLN was examined using immunohistochemistry (IHC) to detect CWD prions, which is a highly specific test for CWD. Incisor teeth were collected to be aged using cementum annuli analysis by Matson's Laboratory in Manhattan, Montana. Other data collected included date of sample collection, sex of the animal, cause of death, mortality location at either a specific location using latitude and longitude or a grid cell that covered an area of 4.3 square miles (11.1 square kilometers), and hunter or roadkill salvager's contact information when applicable.

Department staff sampled deer and elk opportunistically, and from harvested animals primarily during the general modern firearm hunting season. Collection from harvested deer and elk was conducted at eight hunter check stations placed strategically within CSUs operated by Department staff and volunteers during the early general deer season in October and three check stations during

the late general deer season in November. Hunters were also given the options of making an appointment for sample collection either by Department staff or with the Inland Northwest Wildlife Council (INWC), collect the RPLNs themselves and mail samples to the Department following instructions on the WDFW CWD website, have department staff meet them at their house or another meeting point for sample collection, or drop off heads at one of four CWD kiosks located in Colville, near the Wooten Wildlife Area at the Last Resort campground and RV park, or one of two kiosks run by the Kalispel Natural Resource Department (KNRD) around Cusick. Road-killed deer were picked up either by Department staff or by the Washington Department of Transportation (WSDOT). When WSDOT picked up road-killed deer, staff sampled those animals at one of WSDOT's carcass collection sites. House calls were made to pick up deer that had deceased on the properties of the reporting parties and staff could be deployed. All harvested and salvaged deer were voluntarily submitted for sampling by the hunter or salvage permittee.

Outreach was conducted to increase awareness of the CWD surveillance program and to inform the public how to submit samples for testing. An email about the surveillance program and operation times and locations of check stations was sent to hunters that had reported hunting deer or elk in the last five years in Region 1. A letter was sent to licensed taxidermists and game meat processors statewide outlining the current transportation restrictions on cervid carcasses and information about the surveillance program, and in person contact to these businesses in Region 1 was made when possible. The Department also requested samples from taxidermists and game meat processors, with hunter consent, and offered \$7 per sample collected. Those that salvaged road-killed deer within a CSU, were notified via an online notification when submitting their salvage application that the Department was interested in testing their salvaged deer for CWD testing. Outreach about the CWD surveillance program was also conducted on Department social media accounts, local newspaper and radio outlets, at county fairs in Region 1, and presentations given to local sportsperson and conservation groups.

Results

The Department collected 796 samples during SY23 and 766 were suitable for testing. Thirty samples were either the incorrect tissue type, likely salivary gland, abscessed, too decomposed, or an inadequate amount of tissue was collected and could not be tested for CWD. Of the testable samples, 413 were from white-tailed deer (348 male, 130 female), 280 mule deer (207 male, 73 female), 36 Rocky Mountain elk (9 male, 27 female) and one female moose that was part of a research study. Five samples collected were submitted for testing based on suspicious clinical signs and CWD was not detected in any of these five samples (one sample was not testable; however, this animal was a fawn and likelihood of clinical CWD is low for this age-class). Chronic wasting disease was detected in one sample collected from an adult female white-tailed deer in Spokane County, near the Fairwood area in GMU 124 (Fig. 2). This animal was found dead in late February by the landowner and Department staff removed the carcass and collected a sample for testing. The sample collected from this deer tested positive for CWD in July using both the ELISA test and confirmed with IHC.

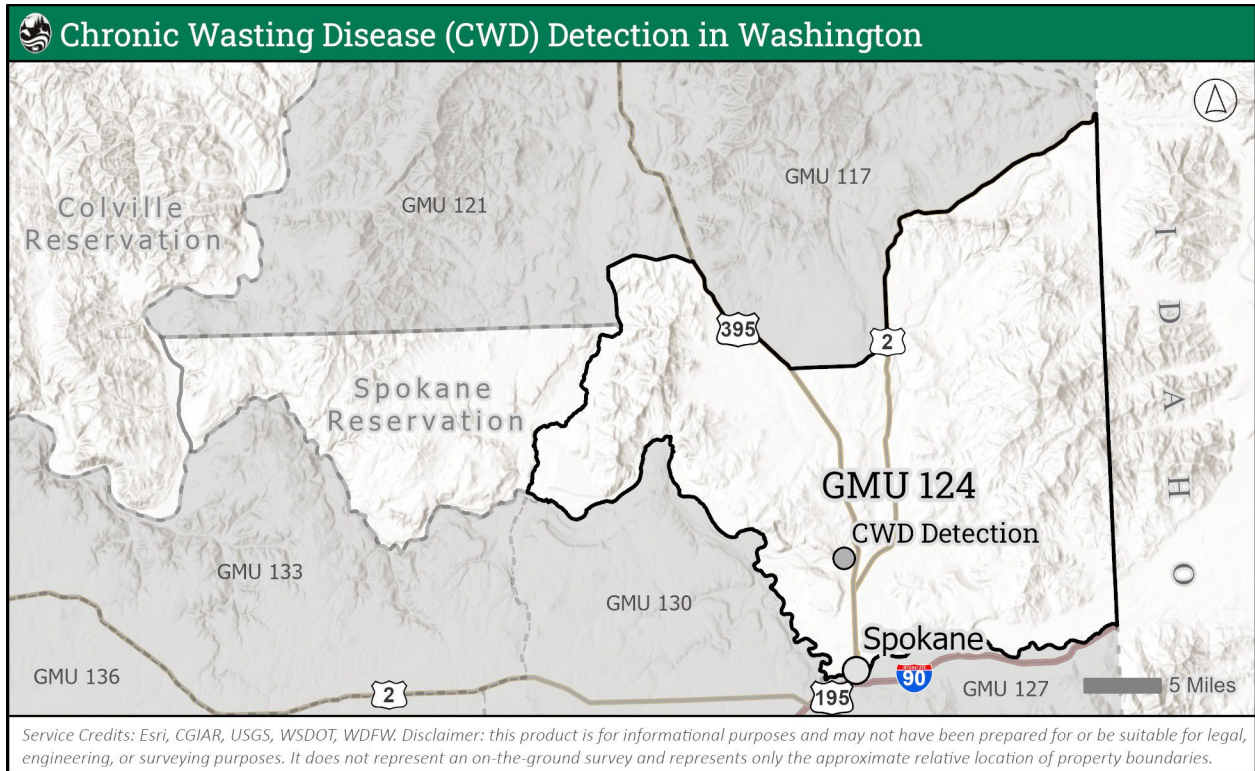


Fig 2. Chronic wasting disease was detected in one sample collected from an adult female white-tailed deer in Spokane County, near the Fairwood area in game management area (GMU) 124, Washington, USA.

The first sample of SY23 was collected on July 5, 2023, and the last sample was collected on June 26, 2024 (Fig. 3). The majority of samples collected coincided with the general modern firearm seasons during October and November, and most samples were collected from harvested animals (n=489) at check stations (n=270; Fig. 4a). Other sources of sample collection of harvested animals were from a hunting resort that doesn't process meat but allows hunters to hang their game (labeled as game meat processor in Fig. 4a) (n=58), mailed into the Department (n=8), the Department's conflict management and prevention section (n=19), self-service kiosks operated by the Department (n=3) and by the KNRD (n=2), participating taxidermists (n=44), by appointment (n=25), and reports from the public for Department staff to collect a sample from their property (n=16). Most road-killed deer and elk were sampled by Department staff at WSDOT carcass collection sites (n=120), and opportunistically from roadways (n=79) (Fig. 4b.). We tested salvaged roadkill upon request from salvagers (n=25), either at a CWD check station (n=2), at a WDFW office (n=8), at a self-service kiosk (n=2), by house call (n=8), by mail in submission (n=5), opportunistically as the animal was being salvaged (n=2), or other (n=3). Other miscellaneous samples came from deer and elk that died of various causes including suspected cases of CWD (n=5), fences (n=5), illegal kill (n=4), other injury or disease (n=14). Cause of death was not recorded for 31 samples.

We recorded check station location to see how each check station performed compared to the previous surveillance year and how we can improve our check station program going forward (Table 1). For SY23 we collected 273 samples (270 harvested animals, 2 salvaged roadkill deer, and

1 illegal harvest) at check stations. This is an improvement from the 202 samples collected the previous year. Locations near Dear Park and Colbert continued to collect the most samples. The Colbert location doubled its sample collection from the previous year. We chose to not continue operating the Hood Park Burbank check station due to its underperformance the previous year, and instead chose to divert the staff to operate a check station at the Last Resort near the Wooten Wildlife Area. As previously stated, the samples collected from this location (n=58) are labeled as being from a game meat processor. Despite closing the Hood Park Burbank check station, sampling of harvested deer in CSU M149 improved from the previous year from 18 samples collected to 34, primarily from the Last Resort and a taxidermist in the region. Additionally, we collected samples at an enforcement-operated check station in Miles-Creston, yielding 28 samples. The Hesse Park Republic check station continues to be amongst the lowest performing check station with only 14 samples collected this surveillance year. This check station continues to be the source of over 50% of our samples collected from harvested deer in CSU W101.

Animals sampled were primarily located within the Region 1 surveillance area in a specific location with an accuracy within 1 mile (Fig. 5). Less than 20% of animal locations were recorded using the grid area with an accuracy of 4.3 sq. miles. We did not collect enough deer samples in any CSU to conclude with 95% confidence that we would detect CWD at 1% prevalence. We did collect enough samples in 9 CSUs to conclude with greater than 96% confidence that we would detect CWD at 10% prevalence (Fig. 6). CSU M4678 that encompasses GMUs 145, 163, 178, 181, and 186 provided the highest number of samples (n=147), up from last year's sample size (n=100). W47 that encompasses GMUs 124 and 127, achieved the second highest sample size (n=110), which is down from last year's sample size (n=136). Unit M36 produced only 6 samples total for this surveillance year, once again making it by far our lowest sampled CSU. For a third surveillance year, harvest estimates of deer in CSU W3 were lower than the goal sample size of 300 (Table 2).

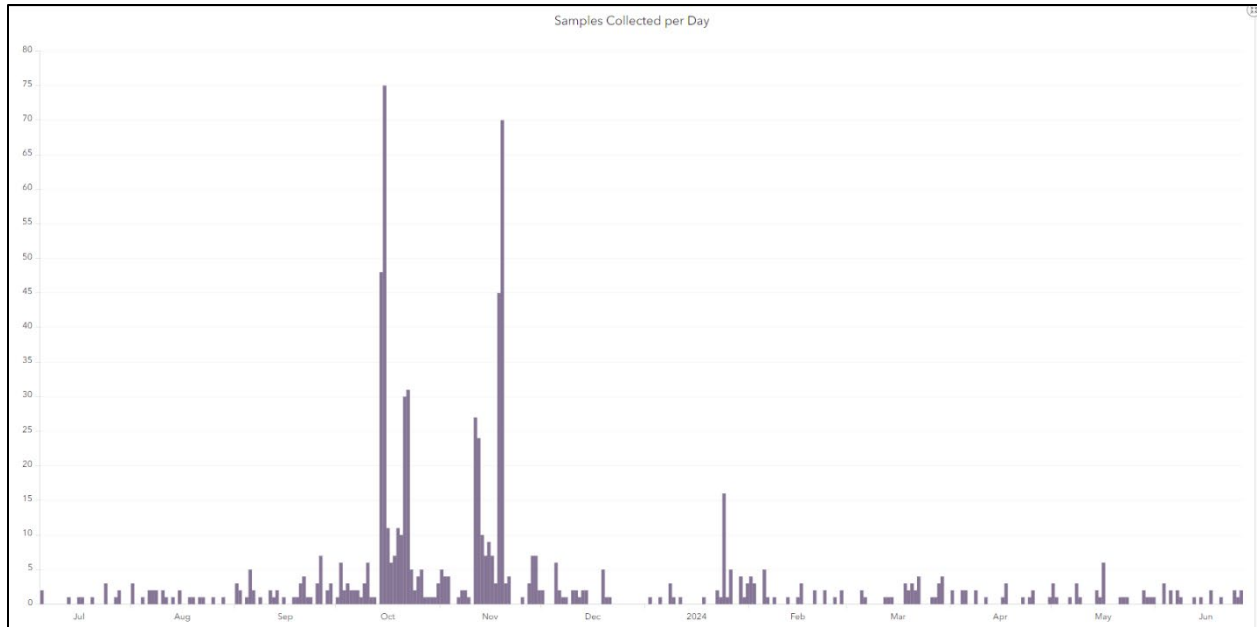


Fig. 3. The distribution of the number of chronic wasting disease samples collected per day during Surveillance Year 2023 in eastern Washington with the first sample collected on July 5, 2023, and the last sample collected on June 26, 2024, and most samples collected during the general deer modern firearm seasons during October and November.

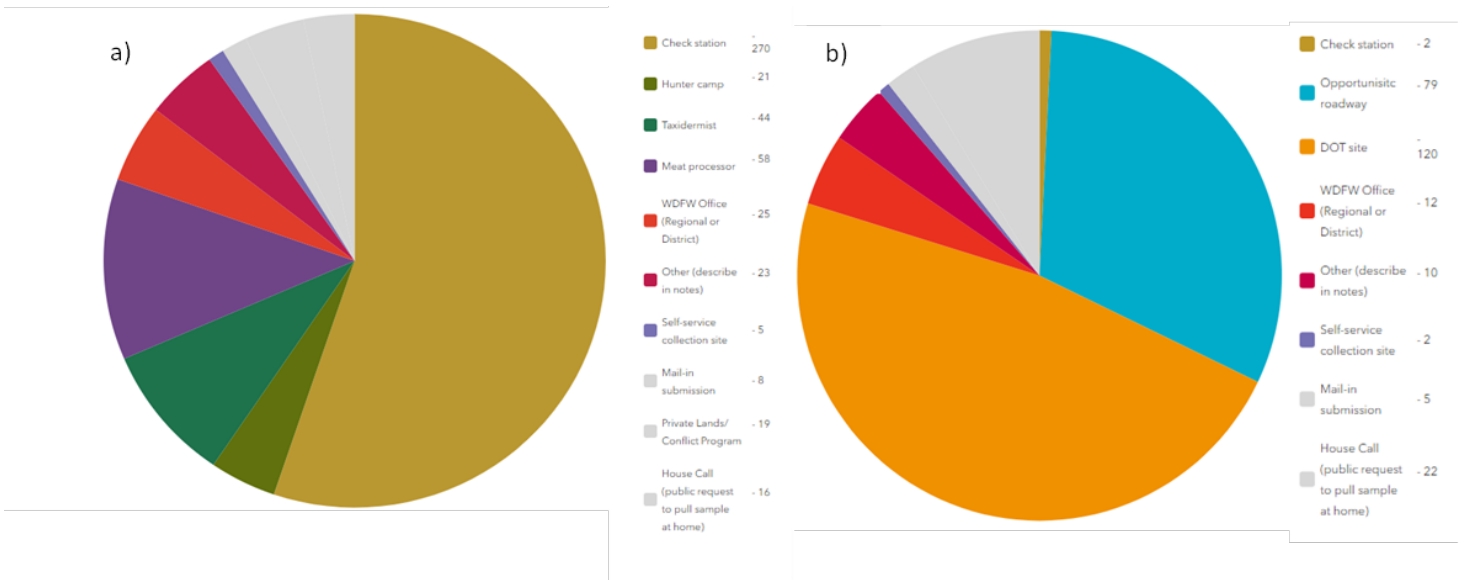


Fig. 4. The proportion of chronic wasting disease samples collected by collection location type for (a) hunter harvested and (b) road-killed animals during Surveillance Year 2023. Note that the “Other” categories primarily reflect hunters going to Inland Northwest Wildlife Council for sample collection, or the Colville Confederated Tribes and Kalispel Tribe collecting the sample.

Table 1. Department staff operated 8 check stations throughout eastern Washington during the early general modern firearm deer season and 3 check stations during the late general modern firearm deer season in the northern portion of the eastern region. Staff and volunteers collected chronic wasting disease samples from any harvested or road-killed deer or elk that was presented by the hunter or salvager for testing.

Check Station Location	CWD Samples Collected	Species	CSU's Represented in Samples
Colville District Office	37	WTD, MD	W101, W121, W581, W7
HWY 395 Weigh Station Deer Park	68	WTD, MD	W121, W47, W581, W7
HWY 2 Weigh Station Colbert	62	WTD, MD, ELK	M36, M4678, M567, W3, W47, W581, W7
Hesse Park Republic	14	WTD, MD	W101
Pacific Pride Washtucna	22	WTD, MD	M092, M149
HWY 12 Weigh Station Walla Walla	19	WTD, MD	M092, M149, M567, M4678
HWY 129 DOT Clarkston	23	WTD, MD	M092, M149, M567, M4678, W47
Miles-Creston	28	WTD, MD	M4678, W101, W121, W581
The Last Resort	58	WTD, MD	M092, M149, M567, M4678

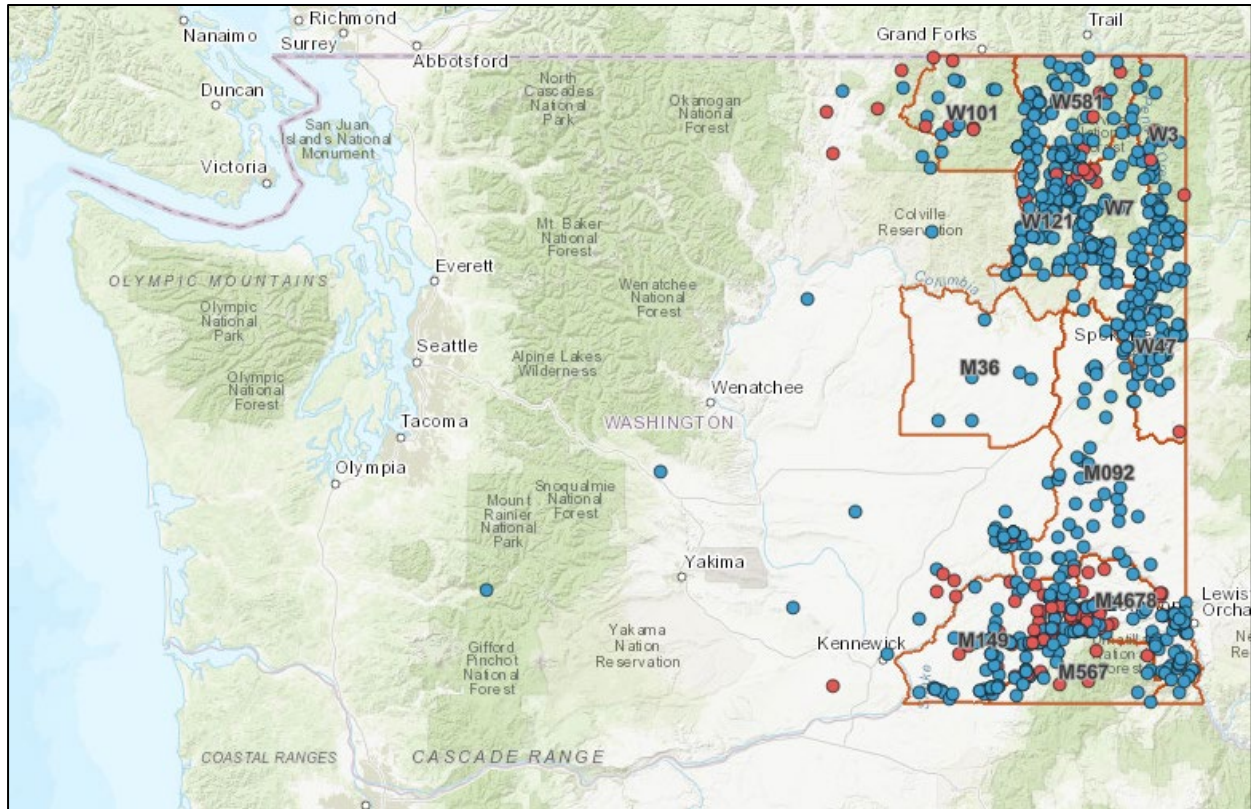


Fig. 5. Most samples were collected from 11 CWD surveillance units (CSUs W101, W581, W3, W7, W47, M36, M092, M149, M4678, M567) representing 27 Game Management Units (GMUs 101-186) during Surveillance Year 2023. Blue dots indicate the specific mortality location with a reported error of <1 mile; red dots indicate an estimated mortality location within a 4.3 sq. mile area.

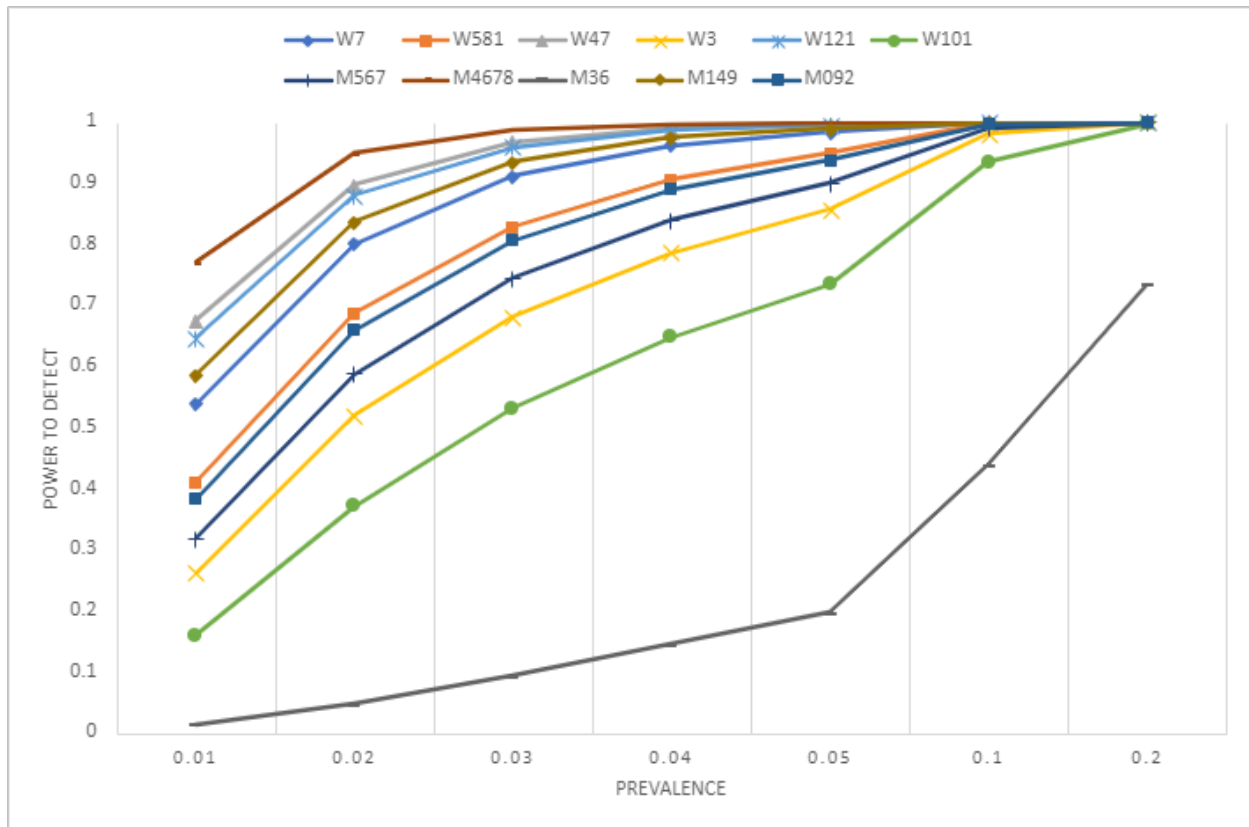


Fig. 6. The power to detect chronic wasting disease (CWD) at a prevalence ranging from 1% - 20% within each CWD surveillance unit based on the number of deer (i.e., white-tailed deer and mule deer) samples collected during Surveillance Year 2023

Table 2. Number of hunters, white-tailed deer (WTD) and mule deer (MD) harvest, success rate (total deer harvest/hunters), and sample size in each of the 11 CWD Surveillance Units (CSU) estimated from harvest reporting. Note, some hunters may hunt multiple CSUs. Standard error around harvest estimates is approximately 8%.

CSU	Hunters	Harvest WTD	Harvest MD	Success	Samples Collected
M092	2,973	183	599	26%	54
M149	1,709	76	476	32%	87
M36	2,258	39	498	24%	6
M4678	2,395	213	534	31%	147
M567	3,312	348	177	16%	42
w101	3,249	387	201	18%	26
w121	4,351	1052	68	26%	105
w3	1,651	251	4	15%	28
w47	4,507	1196	40	27%	110
w581	2,878	653	38	24%	58
w7	3,093	563	5	18%	79

Discussion

Chronic wasting disease was detected for the first time in Washington during this surveillance year. The white-tailed deer was found dead and reported by the landowner. No antemortem signs of disease and illness were observed, but this animal was tested for CWD because of its location within the surveillance area. The detection was known after the surveillance year ended; therefore, details of the response actions are unknown at the time of report writing. The Department will reference the actions outlined in the Washington State Chronic Wasting Disease (CWD) Management Plan to guide the initial emergency response and subsequent actions.

For the third consecutive year of systematic surveillance sample sizes limited the Department's ability to conclude with 95% confidence that CWD was not present at 1% prevalence in any of the CSUs in Region 1. During the surveillance year, all samples were submitted voluntarily. While the Department will continue to explore additional options to incentivize sample submission, mandatory sample submission may become necessary to achieve sample size goals in the future.

Check stations remained the best source of samples and should continue to be utilized during the general deer seasons to sample hunter-harvested animals and perhaps expanded into additional hunting seasons. Sample collection at check stations varied considerably depending on location (range 14-68 samples; Republic vs Deer Park, respectively). Due to the detection of CWD in GMU 124, the Department will be revisiting the locations of check stations to ensure access to these sampling opportunities is adequate to target animals coming from the positive surveillance area and surrounding areas. Hunter harvested animals will continue to be the best source for samples to monitor CWD.

For SY 2023, the Department was able to hire a full-time biologist to take on the role of the Chronic Wasting Disease Surveillance Coordinator. This additional resource allowed for more samples to be collected throughout Region 1 by making house calls to collect samples from deer that were found dead on private property, routine checks to DOT operated carcass pits, and made contacts with local

businesses. Additionally, this position increased our outreach potential and training of new staff and volunteers on CWD sample collection. The goal of maintaining a person in this role is to improve our sampling efforts and to improve the turnaround time for getting results back to hunters.

Outreach continues to be the highest priority to increase sample submission from the public. Outreach included radio advertisements, billboards along Highway 2 outside of Chewelah WA, interstate 90 near Coeur d'Alene Idaho, Fleshman Way in Clarkston WA, and Highway 11 near Milton-Freewater OR, and hosting outreach booths at county fairs in eastern Washington. Department staff were interviewed by local television and newspaper organizations prior to and during the hunting season to expand our outreach to a wider audience.

To incentivize voluntary sample submissions, the Department teamed up with the Washington Chapter of Backcountry Hunters and Anglers (BHA) to create an incentive that would increase hunter participation in the program. The incentive was for anyone that submitted a CWD sample from a harvested deer or elk in any of the targeted CSU's were automatically enrolled in a random drawing to win one of 100 multi-season deer tags. BHA helped to purchase these tags, and they were separate from the general multi-season deer tag drawing and did not affect the odds of drawing one of the general multi-season tags. The continuation of this incentive program will be dependent on funding and whether sampling will continue to be voluntary. An additional incentivization for sample collection provided by the KNRD, was a raffle for a \$50 gas gift card for every 10 samples collected at their two head drop off kiosks operated in the Cusick area.

Increased effort was directed at talking to local meat processors and taxidermists throughout eastern Washington, resulting in a minor increase in samples from these sources. The previously identified resort (The Last Resort) continues to be a productive source of collecting samples with 58 collected over the course of two weekends. Despite this, we continue to face challenges enrolling taxidermists and meat processors in a meaningful way. We will continue to offer the \$7 per sample incentive and develop these relationships with more business owners as resources allow, with a particular focus on the taxidermists in Region 1 that likely see mature bucks and bulls that are high value samples for surveillance. Face-to-face interactions remain the most productive method of gaining participation from these groups. Contacting hunt clubs throughout the region will be explored as a way of spreading information about CWD and the CWD surveillance program.