U.S. Department of Agriculture
Animal and Plant Health Inspection Service (APHIS)
Veterinary Services
Annual Update from the Cervid Health Team
Fiscal Year (FY) 2019

Voluntary Chronic Wasting Disease (CWD) Herd Certification Program

The APHIS National CWD Herd Certification Program (HCP) was implemented in 2014. It is a voluntary Federal-State-industry cooperative program administered by APHIS and implemented by participating States. The program provides uniform national herd certification standards that minimize the risk of spreading CWD in farmed cervid populations. Participating States and herd owners must comply with requirements for animal identification, fencing, recordkeeping, inspections/inventories, as well as animal mortality testing and response to any CWD-exposed, suspect, and positive herds. APHIS monitors the Approved State HCPs to ensure consistency with Federal standards through annual reporting by the States.

With each year of successful surveillance, herds participating in the HCP will advance in status until reaching five years with no evidence of CWD, at which time herds are certified as being low risk for CWD. Only farmed cervids from enrolled herds certified as low risk for CWD may move interstate. Currently, 28 States participate in the voluntary CWD Herd Certification Program and have Approved HCPs. FY 2019 marks the seventh year that Approved States have submitted their CWD HCP annual reports to APHIS. In FY 2019 there were 2,192 enrolled cervidae herds: 1,696 deer, 361 elk and 135 mixed species herds. Of those, there were 1,748 certified cervidae herds: 1,337 deer, 314 elk and 97 mixed species herds.

CWD in Farmed Cervids

Summary of CWD detections. As of September 30, 2019, CWD has been confirmed in wild deer and elk in 23 U.S. States, and in farmed cervids in 17 States. In total, 26 States have identified CWD in wild and/or farmed cervids. CWD has been reported in 117 farmed cervid herds in the United States.

FY 2019 CWD Detections in Farmed Cervids: Seventeen newly-identified CWD positive farmed cervid herds were identified in FY 2019 (9 white-tailed deer, 6 elk, and 2 mixed herds). Twelve herds were within 20 miles of confirmed CWD positives in the wild.

Pennsylvania:

November, 2018: NVSL confirmed CWD in a three and a half year old white-tailed doe in Fulton County. The doe was a natural addition to the 23 head breeding deer herd that sits within a half mile of where CWD has been identified in the wild. This herd was not enrolled in the HCP and was depopulated with Federal funds in April of 2019. All 23 depopulated animals were found to be CWD positive.

January, 2019: NVSL confirmed CWD in a three and a half year old white-tailed buck in Clearfield County. The buck was a purchased addition to a hunt preserve of 12 white-tailed deer that was not a participant in the Federal HCP. This animal resided on the preserve four days before being hunted. The animal was traced back to an HCP-certified breeding herd in Fulton County within a CWD-endemic area. This breeding herd consisted of 137 white-tailed deer and was depopulated in May, 2019 with Federal indemnity. There were 27 additional positives identified at depopulation.

April, 2019: NVSL confirmed CWD in one three and one four year old white-tailed doe in a breeding herd in Fulton County in a CWD-endemic area. The herd consists of 12 white-tailed deer and is not enrolled in the Federal HCP. The herd is under quarantine and the owner will depopulate.

May, 2019: NVSL confirmed CWD in a two and a half year old white-tailed buck in Fulton County. The buck was a natural addition to the 320 head breeding deer herd that lies within a CWD-endemic area. This herd was not enrolled in the Federal HCP and is under quarantine. To date, eight additional CWD-positive animals have been identified from this herd.

June, 2019: NVSL confirmed CWD in a six year old white-tailed doe in Perry County. The doe was a natural addition to the 222 head breeding deer herd that lies within a CWD-endemic area. This herd was double fenced and certified in the Federal HCP. It is currently under quarantine.

Wisconsin:

January, 2019: NVSL confirmed CWD in a six year old white-tailed buck in a Forrest County hunt preserve. This herd was already under a trace quarantine from a breeding facility in Marinette County in FY18 and is not enrolled in the Federal HCP. This hunt preserve consists of approximately 399 animals, is not in a CWD endemic area, and remains under quarantine.

June, 2019: NVSL confirmed CWD in a two and a half year old white-tailed buck in Portage County. The buck was a purchased addition to a hunt preserve of 151 white-tailed deer not enrolled in the Federal HCP. CWD has been detected 11 miles from this site. The index animal resided there for five days prior to being harvested. This herd was depopulated with State indemnity and no additional positive cases were found. The source herd for the index animal was a double-fenced, federally certified HCP breeding herd within a CWD-endemic area consisting of 42 white-tailed deer. The herd was depopulated with Federal funds. An additional six CWD-positive animals were identified at depopulation.

August, 2019: NVSL confirmed CWD in a six year old elk bull in in Burnette County. The bull was a purchased addition to a small breeding herd of five elk five years prior to CWD detection. The herd is certified in the Federal HCP, within an area endemic for CWD, and is currently under quarantine.

South Dakota:

January, 2019: NVSL confirmed CWD in a two year old elk cow in Clark County. The cow was a purchased addition to the herd, which was certified in the Federal HCP. The herd consisted of 18 animals and was depopulated with Federal funds in October, 2019. CWD test results are pending. CWD has not been identified in the wild in this area. The source herd for this animal was in Meade County certified in the Federal HCP. CWD was identified in a seven year old bull and an eight year old cow elk in September, 2019. This herd consisted of five animals, was not in a CWD-endemic area, and was depopulated with Federal funds in October, 2019. CWD test results are pending.

Colorado:

October, 2018: NVSL confirmed CWD in a seven year old cow elk from a hunt preserve in Mesa County. The bull was a purchased addition and was moved into a pasture that had previously contained CWD-positive animals. This herd is certified in the Federal HCP certified, consists of 191 animals, and remains under quarantine.

November, 2018: NVSL confirmed CWD in a one and a half year old elk bull in Jackson County. The bull was a natural addition to the herd which is certified in the Federal HCP and consists of 42 animals within a CWD-endemic area. This herd is under quarantine.

Michigan:

September, 2019: NVSL confirmed CWD in a two year old female white-tailed deer in Montcalm County. The doe was a natural addition to the breeding herd which consists of 50 white-tailed deer. This herd is not enrolled in the Federal HCP, is within a CWD-endemic area, and is under quarantine.

Nebraska:

September, 2019: NVSL confirmed CWD in a five year old elk cow in Buffalo County. The cow was a purchase addition to the herd in 2018. This is a breeding herd of 48 elk and it is not enrolled in the Federal HCP. The herd is currently under quarantine and is not in an area where CWD has been identified. The source herd of this animal was an HCP-certified herd in Lincoln County, Oklahoma.

Oklahoma:

April, 2019: NVSL confirmed CWD in a two year old elk bull in and in a two year old elk cow in May, 2019 in Lincoln County. Both were natural additions to the herd. This herd was certified in the Federal HCP and consisted of 246 elk in the breeding area, and more than 50 in the hunt preserve. Animals in the breeding facility and hunt preserve were depopulated with Federal funds in August and September, 2019. No additional CWD positive animals were identified.

Cervid Health Program Staffing

The USDA APHIS Cervid Health Program (CHP) has undergone some organizational and staffing changes in FY19. Small ruminant health programs including CHP are now a part of the Ruminant Health Center under the direction of Dr. Alecia Naugle. Dr. Diane Sutton is the Ruminant Health Center Assistant Director for small ruminant health programs. Dr. Nancy Hannaway is no longer with the CHP and Drs. Byron Schick and Tracy Nichols are the current CHP points of contact. Dr. Nichols is primary for CWD policy, research coordination and tissue archive. Dr. Schick is primary for cervid indemnity, cervid TB and brucellosis policy, and CWD annual reporting.

CWD Program Standards

The CWD Program Standards were published and took effect in May, 2019. A webinar highlighting the most significant changes was presented to State Animal Health officials to clarify important aspects of the standards such as consequences of poor quality and missing samples, ante mortem diagnostics, sample collection and submission, epidemiological investigations, indemnity, and biosecurity. This webinar, and others related to the revised Program Standards, can be found on the Cervid Health Webpage (www.aphis.usda.gov/animalhealth/cervid) on the CWD Herd Certification Program page linked from the CWD Section. Additionally, the Cervid Health Program continues to address topics related to the changes in the Program Standards on monthly calls with State Animal Health officials to allow for questions and clarifications.

CWD Research and the Cervid Health Program

Determination of the predictive value of whole genome markers: USDA APHIS initiated, and then collaborated with Texas Parks and Wildlife, on a study with Texas A&M University geneticist Dr. Christopher Seabury to evaluate the white-tailed deer genome for genetic markers that might influence susceptibility to CWD. Dr. Seabury identified a suite of genes (inside and outside of the prion gene) that appear to predict the susceptibility of WTD to CWD with greater than 80% accuracy. The study will be submitted for scientific peer review shortly. Based on the preliminary findings from this initial study, APHIS and Texas Parks and Wildlife have provided funding to validate the predictive model and will provide additional samples to better inform the model for potential use in the future.

Evaluation of RT-QuIC assay on targeted ante and post mortem tissue samples: The RT-QuIC amplification assay has been demonstrated by numerous scientific studies to be a highly sensitive tool for the detection of CWD. There is increased interest by both the cervid industry and wildlife managers to develop more sensitive ante and post mortem CWD diagnostic tools. This topic was also identified as one of the top five most important CWD research targets at the 2019 CWD Research Consortium hosted by Michigan State University. Dr. Nichols from the APHIS Cervid Health Program is a member of this consortium and is collaborating with the USDA Agricultural Research Service (ARS) in Pullman, WA, and USGS National Wildlife Health Center in Madison, WI to evaluate RT-QuIC CWD detection sensitivity and specificity on retropharyngeal lymph node, as tonsil and rectal biopsy.

TB in Farmed Cervids

Annual TB Surveillance Summary

In FY 2019, 10,285 cervids were tested for bovine TB using the DPP serologic test and 2,658 cervids were tested using the single cervical test (SCT).

The primary DPP serological testing identified 27 TB suspects (0.26%); 12 of these animals tested negative, 9 tested positive on the re-test at least 30 days later and were classified reactor, and 3 were euthanized without a 2nd DPP. Three animals are pending retest. From the 9 reactors, 8 cultured negative for *M. bovis* and one animal is pending necropsy.

The SCT test identified 41 responders (1.54%). All responders were retested with the Comparative Cervical Test and were found negative.

Cervid TB: DPP evaluation in Mule and Sika Deer

On October 1, 2018, Veterinary Services initiated a pilot project to evaluate the Dual Path Platform (DPP) test in Mule and Sika deer.

The Center for Veterinary Biologics (CVB) licensed the DPP in 2012 as a primary test for elk, red deer, white-tailed deer, and fallow deer. Veterinary Services approved the DPP for official TB program tests in cervid species for elk, red deer, white-tailed deer, fallow deer and reindeer.

The DPP has been widely accepted in the cervid industry. The test has demonstrated sufficient sensitivity and specificity in the species for which it is approved. The advantage of the serologic test is that it requires only one capture event; thereby, reducing the potential for injury and improving animal welfare. Cervid industry representatives have identified the evaluation of the DPP for use in mule deer and sika deer as a priority.

The DPP will be evaluated as a primary and secondary test for TB in Mule and Sika deer. The project will utilize serum samples submitted by designated accredited veterinarians for herd TB certification purposes. Samples will be collected and submitted in a manner consistent with the requirements of Veterinary Services Guidance 6701.3 and will be considered Official cervid TB tests.

The project will end for each species when a sample size target of 306 individual animals has been reached. The project for Mule and Sika DPP validation will occur concurrently. As of September 30, 2019 VS NVSL has processed 10 samples for Mule deer and 0 samples for Sika deer.

Industry representatives have indicated the use of the DPP will likely increase in Mule and Sika over the next two years as herds rotate through the 36 month herd accreditation interval.