Idaho Department of Fish and Game

2018

STRATEGY FOR

CHRONIC WASTING DISEASE

PREVENTION, DETECTION, AND MANAGEMENT FOR IDAHO'S WILD CERVIDS (DEER, ELK, AND MOOSE)

APPENDIX A

Case Studies in CWD Management by State

Eradication of CWD

New York – The first CWD positive deer were found in early April 2005 on two facilities in Oneida County (one white-tailed deer [WTD] captive facility and one WTD rehab and taxidermy operation). Both facilities were depopulated. Wild deer surveillance in a containment area (WM Unit 2P) was conducted by sharpshooters in a 10-mile radius from the infected facilities in April and 290 deer were sampled with two positive for CWD (a yearling female on 4/27/05 and a 3-year-old female on 5/15/05) in Oneida County. Mandatory carcass checks, testing, and movement restrictions were imposed in the containment area in addition to prohibitions on the possession and use of urine scent, importation of carcasses from outside the state, and deer rehabilitation were imposed within an 850 square mile containment area. No additional captive or wild cervids with CWD have been found through 2017.

Minnesota – The first positive cervids were three elk in two captive facilities in Aitkin, Stearns, and Benton counties discovered in 2002. In spring 2006, a captive WTD from a mixed deer/elk herd in Lac Qui Parle County was infected with CWD. In 2006, one WTD and one red deer in a captive facility in Ramsey County were CWD positive, and in 2009, an elk in a captive facility in Olmsted County was CWD positive. Intensive surveillance was initiated around these facilities from 2002-2004 and 28,000 wild WTD were tested with no CWD positive animals. Following the 2009 CWD positive captive elk, enhanced surveillance was again initiated around the captive facility and in the fall of 2010, one wild WTD was found near the positive captive elk facility. A CWD containment zone approximately 10 mi^2 was established in the immediate vicinity of the positive wild WTD and 4,000 WTD were removed by sharpshooters. Baiting and feeding deer was prohibited and carcass movement restrictions were implemented. Greatly increased hunter harvest and some selected sharpshooter culling were used to decrease deer density in the affected area. The aggressive culling apparently eliminated CWD from the area as no other wild WTD have been found to be positive for CWD.

Wisconsin – Despite several years of extensive surveillance of WTD for CWD, nearly 200 WTD were found to be positive for CWD over a 2-3 year period in Dane and Iowa counties. An eradication zone of 411 mi^2 was established with a CWD management zone surrounding the eradication zone. The goal of the eradication zone was total elimination of deer. Initial management efforts utilized hunters with extra seasons, longer seasons, no bag limits, and earn a buck rewards but ultimately sharpshooters were utilized due to public and hunter opposition when WTD densities were reduced from 40 to 20 deer per square mile. Ultimately, testing of deer showed two discrete core areas, one in central Wisconsin and one in south central Wisconsin adjacent to an area in north central Illinois that also had WTD positive for CWD. From 2002-2015, 193,000 WTD were tested for CWD and >3,000 deer tested positive with an increasing prevalence despite years of intensive management efforts. Holsman et al. (2010) showed that the massive reduction in deer density and numbers by Wisconsin Department of Natural Resources was met with sportsmen and landowner resistance and ultimately that resistance caused the management of CWD to be unsuccessful in reaching its objectives.

Management (Containment)

Alberta, Canada – Alberta (2002) – CWD was detected in captive elk in March 2002 and in captive WTD in October 2002. In February and March 2003, 250 deer were removed around each of the two positive captive facilities. Enhanced surveillance was initiated in east central

Alberta in response to the detection of CWD in wild mule deer (MD) in Saskatchewan and the positive captive WTD facility in Alberta. Wild, CWD positive MD were found in the area in September 2005. An immediate response was initiated to collect 50 deer in the immediate area of the positive wild MD. Subsequently MD and WTD were found to be CWD positive and local sharpshooters and enhanced hunting seasons were used to try to reduce deer density and control the transmission of CWD. Pybus (2012) summarized control efforts for CWD in Alberta and showed some limited success in some areas but differences between WTD and MD affected control efforts. Control efforts in Alberta stopped in 2008 due to hunter resistance and the apparent increased distribution and prevalence of CWD. Mule Deer appeared to be the driving force in CWD disease dynamics. Potapov et al. (2016) used Alberta data in a modeling effort and found hunter harvest in a non-selective deer harvest model was the most feasible approach for CWD management. However, the strategy is dependent on intensity of disease transmission to juveniles and behavioral differences between juvenile and older males. Overall, a harvest strategy focused on antlered males reduced CWD prevalence most consistently in these models.

Colorado – Geremia et al. (2015) showed the early large scale control efforts based on enhanced harvest to achieve population reductions of about 25% appeared to have contributed to reduced prevalence of CWD. However, Bergman et al. (2011) found dramatic increases in CWD prevalence in some areas despite targeted reductions in male cohorts possibly due to retention of older infected females in the population.

Illinois – The first wild WTD that tested positive for CWD was found in fall of 2002 near Rosco, in north central IL. A seven county containment zone was established in February 2003 with enhanced surveillance. A total of 185 deer were sampled with seven CWD positive animals. Unlimited permits and longer seasons were used to encourage hunter participation and hunter harvested animals were used for CWD surveillance in the affected area. Sharpshooters over bait reduced the WTD population with the goal to eliminate CWD and contain its spread. Intensive culling was done by sharpshooters on private property in January –March. Mateus-Pinilla et al. (2013) and Manjerovic et al. (2014) summarized six years of data on the effectiveness of using sharpshooters, hunters, and other options to decrease deer density targeting deer social groups at winter aggregation sites in Illinois. Moderate levels of density reduction (decreases of 25 deer/mi^2) over long-term time periods was successful in reducing or maintaining CWD prevalence, particularly in adult and yearling females. Public opinion was not supportive, but the efforts were successful in maintaining a low CWD prevalence.

Michigan (2015) – The first wild WTD positive for CWD was found in April 2015 in a six-year-old female from Inghram County. A core CWD zone of 3,153 mi^2 was established surrounded by a 1,441 mi^2 CWD management zone. An enhanced surveillance program was initiated in May 2016 in a three county area around the initial positive location. Five CWD positive WTD were found in the core zone and two CWD positive WTD were found in the management zone. A combination of options including utilizing an early antlerless season, increased antlered quota, removal of antler restrictions, and decreasing antlerless fees by 40% were used to encourage hunter participation. Testing and mandatory hunter check of all carcasses was required. In addition, disease control permits in the control zone were issued to landowners with more than five acres to be used between May 2015 and April 2016. Sharpshooters were used in a 2 mi radius of each CWD positive on private lands with owner permission. A genetic study of the

CWD positive animals showed significant familial relatedness between the animals and showed that deer movements in the social group were confined to one township in the three county area.

Pennsylvania (2012) – CWD was found in captive WTD in 2012 in Adams County. A CWD management area was established in the immediate vicinity and enhanced CWD surveillance was initiated statewide. In 2013, three wild WTD were found to be positive for CWD in Blau and Bedford counties within the CWD management area. An additional captive WTD was found in Jefferson County in 2014. By May 2015, an additional six wild WTD positive for CWD were found in the CWD management area using road-killed and harvested animals. This finding initiated mandatory testing of hunter harvested WTD, increased antlerless permits, and the prohibition of the removal of any deer parts from the high risk area including heads, spinal cord, spleen, canine teeth, brain material, unfinished taxidermy mounts, or brain-tanned hides. In addition, the rehabilitation of WTD, feeding and baiting, new captive WTD permits, and the removal of road-killed deer parts were banned. The disease management areas were delineated at the county level with two disease zones established.

Targeted Culling (Hot Spot Management)

Colorado –Nusser et al. (2008) developed the hot spot and spark model of CWD transmission, which initiated the Colorado Parks and Wildlife approach to selectively culling social groups of mule deer affected by CWD based on hunter collected samples or capture and testing of live animals. Wolfe et al. (2004) showed that tonsil biopsy of live captured mule deer was feasible to test about 50% of urban deer. Average costs were $325 per deer without testing or personnel costs. Gross and Miller (2001) used simulations of selective culling strategies for CWD management and showed that early intervention when CWD prevalence was <1% could eliminate CWD by removing <20% of the infected populations.

Monitoring Prevalence

Minnesota – In 2016, CWD was found in five WTD from three captive facilities in Crow Wing and Meeker counties in central Minnesota. An enhanced surveillance program was initiated around the captive facilities and four wild WTD were found to be CWD positive in December 2016 and January 2017 within a one mile area. Due to the possible connections to CWD in Iowa and Wisconsin, targeted surveillance was initiated in southeastern Minnesota. Initially, two male deer in Fillmore County tested positive for CWD, but as of May 2017, 11 of 1,179 deer tested were CWD positive in Filmore County, the same area as the CWD positive wild deer in 2016 and 2017.

Arkansas (2015) – After nearly 10 years of CWD surveillance, the first positive wild elk, a 2.5-year-old female, was found on October 6, 2015. A CWD core zone within a five-mile radius around the positive elk was established and enhanced surveillance began. A total of 300 deer and elk were removed and a 2.5–year-old female WTD was found to be CWD positive on March 6, 2016. A CWD management zone was established that encompassed 10 counties. Enhanced hunting seasons were utilized through 2017 and a total of 79 positive CWD animals have been found in seven counties with a prevalence of 23%. In addition, live deer importation was banned in 2002, carcasses from CWD positive states were banned in 2005, and a moratorium on captive breeder/dealer permits was put in place in 2006. In 2012, the importation of all cervid carcasses

into Arkansas was prohibited and the capture of wild WTD for captive operations was prohibited.

Wyoming – Wyoming identified CWD in captive cervids at the Sybille Wildlife Research Facility in the 1980s and in free-ranging mule deer and elk in the surrounding area a few years later. No active management actions have been taken, rather a systematic surveillance effort was done to monitor CWD prevalence in known areas and detect new areas of infection. Over time, CWD prevalence has increased, especially in white-tailed deer, and CWD distribution has expanded to include essentially all of the state except the far northwestern counties. There is great concern, both from Wyoming Game and Fish Department (WGFD) and the public about the encroachment of CWD into areas with winter feeding and Yellowstone and Grand Teton National Parks. The WGFD is currently trying to develop a CWD management and response plan.