

# IDAHO DEPARTMENT OF FISH AND GAME CHRONIC WASTING DISEASE (CWD) ACTION PLAN

## Risk Reduction, Surveillance and Response in Idaho

### **Background**

Chronic Wasting Disease (CWD) is a neurological disease caused by a prion that affects mule deer, white-tailed deer, elk and moose. The disease is endemic in deer and elk in areas of Colorado, Wyoming and Nebraska, but also occurs in wild white-tailed or mule deer in Utah, South Dakota, Nebraska, Illinois, Wisconsin, New York, and Virginia and in Alberta and Saskatchewan. CWD has been found in captive elk in six states and two Canadian provinces. The disease has not been found in Idaho.

Chronic Wasting Disease is included in a group of diseases known as Transmissible Spongiform Encephalopathies (TSE). Other similar diseases include Scrapie in sheep and goats, Bovine Spongiform Encephalopathy (BSE) in cattle, Transmissible Mink Encephalopathy in mink, and Creutzfeldt-Jakob Disease (CJD), Fatal Familial Insomnia, Gerstmann-Straussler-Scheinker Syndrome and Kuru in humans. Scrapie was first recognized in sheep in the 1700's. CJD was first diagnosed in the 1920's and affects about 1 in 1 million people worldwide. BSE was first identified in cattle in Britain in 1986.

CWD was first recognized among captive mule deer in a wildlife research facility in Colorado in 1967. The disease was recognized in elk at this facility and in mule deer and elk at a wildlife research facility in Wyoming over the next 10 years. In 1978, CWD was definitively diagnosed as a TSE using histopathology. In 1986, CWD was diagnosed in free-ranging elk, mule deer, and white-tailed deer in north-central Colorado and southeastern Wyoming.

### **Transmission and Diagnosis**

Definitive information about the clinical progression and transmission of CWD is limited. Based on studies of captive deer and elk that were naturally infected or artificially inoculated with CWD, the minimum incubation period is 16-17 months with onset of clinical signs occurring between 3-5 years of age. The mode of transmission in deer and elk is unknown, but lateral transmission of the prion through saliva, urine, feces or carcass parts and/or environmental contamination from these same sources is considered the most likely route. Extensive close contact is likely required for transmission to occur, although CWD in mule deer appears to be transmitted more efficiently than in elk. Prion shedding can occur relatively early in the infection and persist for long periods making environmental contamination important for disease occurrence. In addition, there is some laboratory evidence that prions can adsorb to soil particles resulting in enhanced infectivity and transmission.

The incubation period of CWD can be very long. The minimum incubation period in animals varies from about 15 months in mule deer, and 12 to 34 months in elk. Clinical symptoms can appear at any age over about 17 months, up to 15 years.

Clinical signs of CWD in affected animals include loss of body condition and aberrant behavior. The clinical course varies from a few weeks to over a year. Once clinical signs appear, animals die within a few weeks to months. There is no known treatment or vaccine for CWD.

Diagnosis of CWD is based on presence of clinical signs and examination of the brain and lymphoid tissues for pathological changes and the presence of prions. Tissues most affected by prions include the brain, spinal cord, eyes, lymph nodes and spleen.

Immunohistochemistry is the preferred diagnostic test, but requires testing of brain tissue (elk, moose or deer) or lymph nodes (white-tailed and mule deer) from dead animals. There is no diagnostic test currently available for live animals, although a tonsillar biopsy technique to collect tissue for immunohistochemistry has been developed for mule deer and a rectal biopsy technique in elk has been used.

Although not conclusive, other wild ungulate species including bighorn sheep, mountain goats, or pronghorn antelope do not appear to be affected by CWD. CWD does not appear to be capable of being transmitted from wild ruminants to domestic cattle. No cases of CWD transmission from wild ruminants to humans are known.

### **Control Strategies**

Most states have been conducting surveillance of wild deer and elk for CWD for several years. Surveillance is generally done on hunter killed animals at hunter check stations. Some states have banned the importation of carcasses or certain portions of the carcasses, including the brain and spinal column, of hunter-harvested animals from either the CWD endemic area or from all states.

In wild animals, control of CWD poses significant management problems. Initial management strategies generally focus on containment, and eradication of CWD in localized areas through increased harvest and selective culling. Translocation of deer and elk from potentially affected areas has been banned in most states. Artificial feeding in affected areas has been prohibited to reduce the potential for further transmission among deer and elk herds.

Epidemiological models of CWD dynamics strongly suggest the most efficient and effective response is early detection and aggressive culling in the affected area, along with general herd reduction. But the primary issue is early detection and the ability to find the first or first few cases of CWD in an area. Once CWD becomes established, the models predict persistence of the disease for long periods of time, even with aggressive management actions.

In states where CWD was been known to occur for long periods of time (CO, NE, SD) localized population reduction has been used to reduce transmission of the disease. The efforts have resulted in lowered prevalence, but not the elimination of CWD. However, specific targeting of known infected individuals or culling of animals in 'hotspots' have been

more successful in decreasing CWD prevalence in some local areas. In states where CWD was found after some years of negative results (WI, IL, VA), aggressive population reduction was attempted using both sport hunters and sharpshooters. The efforts were successful in containing the disease to an area, but were largely ineffective in eliminating CWD, primarily because sport hunters refused to continue to kill deer below a certain threshold population. In NY, aggressive CWD control actions apparently eliminated CWD from the area. In one state (WY) with a high CWD prevalence, CWD is not being actively managed.

Concern about CWD has continued in various state and federal governmental agencies. The US Department of Agriculture has been developing Uniform Methods and Rules for CWD in captive Cervidae for several years. Most states have CWD surveillance plans and some level of response to early detection of the disease.

### **Proposed Action Plan**

The Idaho Department of Fish and Game proposes this CWD Action Plan to minimize the risk of CWD being introduced into and establishing in Idaho. The Action Plan is focused on three objectives in the unlikely event of the detection of CWD in Idaho: 1) Risk reduction, 2) Surveillance, and 3) Containment.

### **Risk Reduction**

Risk reduction is needed to minimize the potential for the introduction of CWD into Idaho. The major risk to wild deer and elk is the importation of wild deer or elk or the importation of captive deer or elk from herds or areas affected by CWD.

The Idaho Department of Fish and Game (IDFG) regulates the importation and possession of all species of deer except reindeer, fallow deer and elk, and licenses individuals to possess such deer. Currently, the Department does not allow importation of captive mule deer or white-tailed deer into Idaho. In addition, the Department will not translocate deer or elk from areas known to be affected by CWD.

The Idaho State Department of Agriculture (ISDA) regulates importation and possession of reindeer, fallow deer, and elk. The Department of Agriculture Domestic Cervidae rules include rules about importation of domestic cervids that include provision for CWD. The Department of Agriculture has about 70 Domestic Cervidae facilities in the state.

There are 3 facilities that are currently licensed by IDFG to possess captive mule deer or white-tailed deer. There are another 3 individuals that may have captive mule deer or white-tailed deer, but may not be licensed by IDFG. The Department requires notification of the Wildlife Health Laboratory by the owner of any deer over 18 months of age that dies and that these animals are tested for CWD at owner expense. IDFG does not, and will not, allow establishment of "hunting" operations for these species within fenced enclosures on private or public lands.

Jurisdiction over fallow deer, elk, and reindeer that escape from a Domestic Cervidae Facility, and wild deer or elk within such a facility, is unclear under Idaho law. Personnel of the IDFG

will work with the ISDA to seek clarification of the law to protect Idaho wildlife and resolve individual situations in timely manners.

Although it appears that the transmission rate of CWD among free-ranging deer and elk is low, transmission may be increased when the animals are artificially concentrated, as at winter feed sites. The Department will strive to reduce or eliminate winter feed sites as per Commission policy and the Governor's Task Force on Wildlife Brucellosis.

## **Surveillance**

The IDFG Wildlife Health Laboratory has been conducting surveillance for CWD since 1997. Targeted surveillance, focusing on deer and elk exhibiting clinical symptoms associated with CWD, was used initially. Animals identified with signs associated with CWD were killed and sampled. For about 10 years, general surveillance focusing on apparently healthy animals has been used with additional samples from road-kills and a small number of samples from hunter check stations. Department personnel have been trained to identify animals exhibiting clinical signs of CWD and in sample collection techniques.

### Objective of Surveillance

The general surveillance program currently targets about 1200 samples annually. Successful hunters visiting game check stations are asked to allow biologists to obtain tissue samples from harvested deer, elk and moose. Samples are sent to the Wildlife Health Laboratory for submission to appropriate laboratories.

The targeted surveillance program currently targets about 50 animals that exhibit signs of CWD per year. Biologists are encouraged to report and collect animals that exhibit neurological or behavioral signs that could be associated with CWD.

### Population Description

Idaho's wild cervid population is made up of moose, mule deer, white-tailed deer and elk distributed throughout the state with species composition and numbers varying greatly across the state.

It is important that these efforts do not lead to undue concerns among Idaho hunters. CWD has not been detected in Idaho, and no transmission to humans has been detected despite knowledge of this disease for nearly 30 years. All testing and surveillance efforts will be accompanied by efforts to educate the public about this disease including brochures (Idaho Hunters Guide to Chronic Wasting Disease), press releases and radio spots.

## **Containment**

If testing of captive animals under control of IDFG indicates an animal positive for CWD, or if epidemiological tracing of animals from an infected captive herd in another state leads to such a facility in Idaho, the facility will be immediately quarantined. Within 7 days of the initial

diagnosis, the owner will be required to submit a full inventory of all captive deer present. An epidemiological investigation will be conducted by ISDA. If CWD is verified, management of the disease will be directed by appropriate state and federal epidemiological requirements and regulations. Control measures and herd management plans will be developed between IDFG and the owner, with input from ISDA.

If testing of captive animals under the control of ISDA indicates an animal positive for CWD, or if epidemiological tracing of animals from an infected captive herd in another state leads to such a facility in Idaho, the ISDA will quarantine the facility and begin an epidemiological investigation. The IDFG will work cooperatively with ISDA to minimize the potential for disease exposure to wild deer and elk.

If CWD is identified in either a captive deer or elk facility or in free-ranging deer or elk, the IDFG will immediately sample wild deer and/or elk in the vicinity of the infected facility or site. Sampling should include collection of a minimum of 50 deer and/or elk within a 5-mile radius of the infected site. If no CWD is detected among these samples, general surveillance will be done in the associated Game Management Units during the subsequent hunting season(s). A formal sampling protocol will be developed to ensure detection of CWD with a 95% confidence interval in the affected area.

If CWD is detected in additional animals, aggressive efforts to reduce the affected population of deer and elk will be immediately initiated. The deer and/or elk population within a 5-mile radius of the affected site will be reduced by a minimum of 25-50%, using IDFG personnel and hunters. If required, eradication of all potentially-affected free-ranging deer and elk within 1 mile of known affected animals will be considered within reasonable constraints of cost, man-power, and personnel safety.

If CWD is found in free-ranging deer or elk during subsequent general surveillance, the deer and/or elk population within a 5-mile radius of the affected site will be reduced by a minimum of 25-50%, using IDFG personnel and hunters. If required, eradication of all potentially-affected free-ranging deer and elk within 1 mile of known affected animals will be considered within reasonable constraints of cost, man-power, and personnel safety.

### **Communication**

If CWD is found in free-ranging deer or elk in Idaho, the situation is likely to be very discomfoting for the agency as well as the general public. Some planning for dissemination of information is needed to allow agency functions to proceed.

The first step if a positive CWD test is found will be to retest the sample or other samples from the same animal if available. If the retest is positive, there are two things that have to happen in concert. If the animal was killed by a hunter, the hunter must be contacted with the information as well as being advised to dispose of the carcass remains in an appropriate manner. The location that the animal was killed must be identified as accurately as possible to initiate the response plan.

The dissemination of the CWD positive finding will be done in coordination with the IDFG Communication Bureau and communicated to the Idaho Department of Agriculture, the Idaho Department of Health and Welfare and the US Department of Agriculture.

Information about CWD will be made available through printed brochures (Idaho Hunters Guide to Chronic Wasting Disease 2008) and the IDFG web site.

### **Summary- Action Items**

Chronic Wasting Disease has not been found in Idaho. Therefore, this Action Plan proposes strategies to minimize the risk of introduction of CWD into Idaho; surveillance to quickly identify any occurrence of CWD; and immediate action to contain any outbreak.

#### *Risk reduction*

1. The IDFG will continue to prohibit the importation of mule deer and white-tailed deer into Idaho.
2. The IDFG will require reporting of the death of any captive mule deer or white-tailed deer within 24 hours, and testing of all dead captive mule deer or white-tailed deer for CWD.
3. The IDFG will not authorize the "hunting" of deer within fenced enclosures on private or public lands.
4. Personnel of the IDFG will continue to work with personnel of the ISDA to clarify jurisdiction over domestic fallow deer, elk, and reindeer that have escaped captivity, and wild deer and elk within the confines of a Domestic Cervidae Facility.
5. The IDFG will strive to reduce or eliminate winter feeding sites that concentrate deer and elk.

#### *Surveillance:*

1. Wildlife Health Laboratory will provide training to IDFG personnel, and others as appropriate, on the clinical signs of CWD, collection and handling of tissue samples for CWD surveillance, and will coordinate testing of samples.
2. Wildlife Health Laboratory will coordinate collection of samples from suspect animals for targeted surveillance.
3. IDFG personnel will conduct general surveillance by collecting samples from willing hunters at check stations throughout Idaho.
4. Educational brochures will be developed by IDFG personnel and distributed to the public. Other media will also be employed to educate the public about this disease as opportunities allow.

#### *Containment:*

1. IDFG personnel will continue to work with ISDA personnel on issues involving Domestic Cervidae Facilities in the state.

2. IDFG personnel continue to work with ISDA personnel to ensure adequate measures are in place and to cooperate as needed to contain CWD on an infected Captive Cervidae facility or site.
3. If CWD is diagnosed in a captive facility under IDFG control, quarantine and inventory of animals will be required. Management of the facility and resident animals shall be directed by state and federal epidemiological requirements and regulations.
4. If CWD is diagnosed in a captive facility under ISDA control, the IDFG will cooperate with the ISDA to contain the disease and prevent exposure to wild deer or elk.

*Containment:*

1. If CWD is diagnosed in the wild or a captive facility, the IDFG will immediately collect samples from 50 deer within a 5-mile radius of the affected site. If CWD is not detected in these samples, general surveillance at hunter check stations will be conducted in the affected Game Management Units using statistically generated sampling sizes to detect the disease at a 95% confidence interval.
2. If CWD is detected in the 50 deer sampled, the deer and/or elk population will be reduced 25-50% within 5 miles of the affected site using IDFG personnel and hunters. In addition, eradication effects may be initiated for deer and elk within a 1-mile radius of known infected animals.
3. If CWD is detected in subsequent general surveillance, the deer and/or elk population will be reduced 25-50% within 5 miles of the affected site using IDFG personnel and hunters. In addition, eradication effects may be initiated for deer and elk within a 1-mile radius of known infected animals.