

Idaho Department of Fish and Game



**2021**

**STRATEGY FOR**

**CHRONIC WASTING DISEASE**

**PREVENTION, DETECTION, AND MANAGEMENT**

**FOR IDAHO'S WILD CERVIDS (DEER, ELK, AND MOOSE)**

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## EXECUTIVE SUMMARY

The Idaho Fish and Game Commission (Commission) and Idaho Department of Fish and Game (IDFG) are responsible for preserving, protecting, perpetuating, and managing Idaho's wildlife, including the continued supply for hunting, fishing, and trapping. Chronic Wasting Disease (CWD) is an infectious and fatal disease with potential to negatively impact wild populations of cervids (elk, deer and moose) in Idaho. CWD currently occurs in the neighboring states of Wyoming, Montana, and Utah, but IDFG's sampling program has not detected it in Idaho. The Commission has directed IDFG to prioritize reducing CWD impacts in Idaho through prevention, surveillance, and management of CWD should it occur.

A key objective of IDFG's 2015 Strategic Plan provides Commission Direction to "Eliminate the impacts of fish and wildlife disease on populations, livestock, and humans." The 2020-2025 Mule Deer and White-tailed Deer Management Plans also include objectives to reduce potential disease impacts with continued implementation of robust monitoring for CWD, thereby maintaining healthy and productive populations. CWD is mentioned as a disease of concern in the current Elk and Moose Management Plans.

IDFG's prior CWD plans included monitoring for CWD. Annual CWD surveillance has occurred in Idaho at hunter check stations since 1997, with over 18,000 cervids (mule deer, white-tailed deer, elk, and moose) sampled from around the state, with no CWD detections to date.

This 2021 CWD Strategy:

- Incorporates the latest knowledge and practices for CWD detection and management.
- Recommends Commission administrative rule changes and IDFG actions to prevent introduction and spread of CWD in Idaho.
- Provides a framework for a statistically sound surveillance approach to detect CWD if it were present.
- Identifies potential Commission and IDFG actions to reduce the spread of CWD if it is detected in Idaho, based on reducing population density in free-ranging cervids and quarantine/removal at captive facilities.
- Provides a framework for internal and external communications regarding CWD.
- Identifies the roles of other local, state, tribal, and federal agencies in addressing the animal health impacts of CWD, as well as responding to CWD-related public health questions and concerns.
- Commits to integrating the latest knowledge, research, and population modeling tools available for effective CWD prevention, detection, and management.

The 2021 CWD Strategy will replace all preceding CWD plans. IDFG will review the Strategy every 5 years or sooner, depending on Idaho's disease status and need.

## BACKGROUND

Chronic Wasting Disease (CWD) is an infectious disease of cervids caused by misfolded proteins (prion) transmitted by ingestion of prions from contaminated environmental components or directly from contact with infected animals. The disease has a long incubation period and a long period of prion shedding. The disease is always fatal in cervids and is preceded by prolonged neurological degeneration and dysfunction. A prion is not a bacterium, a virus, or fungi. A prion cannot be treated, or controlled with conventional measures; there is no known cure for an animal suffering from CWD. There are ways to decrease the infectivity of prions, but the environmental treatments are not practical for large-scale use.

Since 1997, the World Health Organization has recommended that all known agents of prion disease be kept from entering the food chain and the U.S. Centers for Disease Control and Prevention (CDC) supports this recommendation (<https://www.cdc.gov/prions/cwd/index.html>). The CDC states that hunters should have their meat tested for CWD prior to consumption if hunting in a known CWD-positive area, and to avoid consumption of any tissue from CWD-positive animals. Chronic Wasting Disease prions are distributed throughout the organs and tissues of affected animals, with lymphoid tissue, tonsil, and nervous tissues being the most heavily infected. Prions have also been detected in saliva, urine, feces, fat, muscle, kidney, and antler velvet. Advances in testing have allowed for the detection of prions in much smaller amounts, resulting in the ability to detect CWD in samples from seemingly healthy cervids, improving the understanding of how prions spread. The same advancements have also allowed for experimentation in tracing infectivity of saliva, urine, and blood (Haley et al. 2016 and Henderson et al. 2015). Better understanding of which tissue types contain prions, and how an infected animal sheds prions, may assist wildlife managers in proactive prevention and moderating the transmission of the disease. Deer have significantly higher CWD prion levels than elk, suggesting that deer may be more important for transmission of CWD than elk (Race et al. 2007). Understanding the obstacles posed during long incubation periods prior to CWD diagnosis, the geographical locations where an animal may be shedding prions into the environment and which species have a higher likelihood of shedding may change wildlife and habitat management practices.

Chronic Wasting Disease is density and frequency-of-contact dependent (Storm et al. 2013) with both horizontal (animal-to-animal) transmission and environmental contamination serving as prion pathways. The horizontal spread of CWD has been attributed to both natural and anthropogenic (human-caused) factors. The natural factors include the properties of the prion (prolonged incubation, multiple routes of shedding, prolonged periods of shedding, environmental stability) as well as the natural migration patterns of free-ranging deer and elk. High-density winter and summer ranges, with multiple species overlap on these ranges, may increase transmission opportunities for CWD. Dispersal may enhance the spread of CWD to far greater distances than typical migration (Conner and Miller 2004). Anthropogenic factors are the artificial translocation and the congregation of cervids. Examples include long-distance movement and placement in high-fence operations or artificial movement of animals due to management decisions such as winter feeding, rehabilitation permits, and relocations (Miller and Fischer 2016).

## 2021 Strategy for Chronic Wasting Disease

Chronic Wasting Disease prions can remain viable on feeding surfaces and on items like the instruments and tools used for sampling or handling of infected animals. Standard cleaning and disinfecting techniques do not kill the CWD prions. Tools suspected of CWD contamination can be cleaned using an enzymatic or alkaline digestion technique followed by high temperature autoclaving. There are no practical methods or solutions to clean and disinfect animal pens, corrals, soils, or plants. Carcasses require incineration at very high temperatures ( $\geq 1,800^{\circ}$  Fahrenheit) to destroy the prions.

Once CWD prions are on the landscape, it is considered improbable they will be removed. Prions have been found to have a greater affinity for certain soil types and remain stable for many years under laboratory conditions. Experiments have shown plants can take up prions from the soil and animal waste, leading to infection of grazing animals (Pritzkow et al. 2015). In addition, CWD prions appear to remain infectious in carcasses for  $\geq$  two years (Miller et al. 2004). There is no cure once a cervid is infected and no treatment available; prevention is the best option for protecting the long-term health of Idaho's cervids.

Multiple studies have shown that heavily infected cervid populations do not thrive in the long term (Almberg et al. 2011, Monello et al. 2014, Williams et al. 2014). A study in Wyoming focusing on a local population of mule deer estimated a 21% annual decline and extinction within 40 years due to high CWD prevalence (24%), (DeVivo et al. 2017). A similar Wyoming study of white-tailed deer with high CWD prevalence (33%), estimated extinction in 48 years at the current level of mortality and fecundity (Edmunds et al. 2016).

While strides have been made in understanding CWD, there is still incomplete knowledge on how best to manage the disease. The persistence of prions in the environment and the inability to restrict animal movements limit feasible management options. Management approaches in other states have not resulted in the eradication of CWD. In the one exception, New York, a quick response to low prevalence and small geographic distribution of CWD-positive animals resulted in containment and eradication to date. Other states typically found an expanding geographic distribution and increasing prevalence despite management actions (Miller and Fischer 2016, Uehlinger et al. 2016). A recent review of CWD management practices concluded most actions were too little, too late, too restricted, too passive, or of insufficient duration to be successful. Based on lessons learned from past CWD management actions, the critical need is for states to set realistic CWD control objectives incorporating existing and prospective field data: and to apply any management action with sufficient spatial and temporal coverage to be effective (Miller and Fischer 2016).

Early public engagement, before CWD is documented in Idaho, will be essential to build necessary public support for the management actions required to effectively contain and control CWD expansion in Idaho. Any attempt at controlling CWD will require decades of effort, time, and money to achieve results that can be sustained. Many management actions center on suppressing the CWD-affected population in an effort to contain further spread. Such actions are achieved by combinations of agency culling, hunter harvest, predator management, cessation of agency management practices (e.g., winter feeding and translocations), and in extreme cases, experimentation with controlled burning of contaminated environments. A recent study in Colorado indicated that harvesting mule deer with sufficient hunting pressure could control

CWD when prevalence is low (Miller et al. *in-press*). The development of models incorporating CWD prevalence analysis have allowed some agencies to estimate the amount of hunting pressure, predation, and CWD risk a population can withstand without threat of extinction (Dulberger et al. 2010, Galloway et al. 2017, Miller et al. 2008).

## PREVENTION

Routes for spreading CWD-causing prions, or cervid exposure to CWD, include natural animal migration, transport of live animals and infected carcasses (particularly brains and spinal tissue), and activities that concentrate animals, such as winter feeding. Prevention of disease transmission is the most cost effective CWD management tool available. This 2021 Strategy focuses prevention efforts on practical measures that address significant transmission risks and have a reasonable likelihood of compliance. While much is unknown about CWD, the contributions of natural and human activities in the spread of CWD are well documented (Miller and Fischer 2016).

Idaho has statutes and rules whose intent it is to prevent the spread of CWD via transport of live animals, actions to reduce risks from both captive and wild animals, as well as carcass transport.

### Current statutes and rules:

- A person must obtain a permit from IDFG to import, export, or transport captive mule and white-tailed deer and moose. This includes authority to restrict import and possession from CWD-positive animals. IDAPA 13.01.10; Idaho Code 36-103, 36-104(b), 36-501, and 36-504.
- People hunting in or transporting carcasses from other states are required to follow any carcass export/transport rules of the state(s) from which they harvest the cervid or are traveling through to their final destination.
- The Idaho State Department of Agriculture (ISDA) regulates the importation, possession, and health of domesticated elk, fallow deer, and reindeer under Idaho Code Title 25, Chapter 37. ISDA rules require that any of these animals imported into Idaho originate from a herd in good standing that complies with the National CWD Herd Certification Program. IDAPA 02.04.19. ISDA regulates red deer and sika deer as deleterious exotic animals, and a person must obtain a permit from ISDA to import, possess, or transport these species.
- Under Idaho Code 36-106(e)(9), ISDA and IDFG are jointly responsible for a comprehensive health program for all deer, elk, and moose imported into, transported through, or resident within Idaho. ISDA and IDFG administrative rules provide authority for testing, quarantine, and slaughter of animals to address infectious diseases.
- Idaho Fish and Game limits the import into Idaho the carcass or any part of a wild deer, elk or moose from another state, province of Canada, or Country with any documented

case of CWD; limit the transport of the carcass or any part of a wild deer, elk or moose out of any CWD Management Zone designated by IDFG Commission to any part of the state that is not a designated CWD Management Zone. IDAPA 13.1.10

- The following exemptions will be allowed:
  - Meat that is cut and wrapped
  - Quarters or deboned meat that do not include brain or spinal tissue
  - Edible organs that do not include brains
  - Hides without heads
  - Upper canines (buglers, whistlers, or ivories)
  - Finished taxidermy and dried antlers
  - Cleaned and dried skulls or skull caps
- Due to the threat of CWD, IDFG will not issue any permit for the import into Idaho of any live cervid not regulated as a domestic cervid by the Idaho State Department of Agriculture. This includes mule deer, white-tailed deer, moose, and wild-origin elk. IDAPA 13.1.10
- IDFG prohibits the purposeful supplemental feeding of deer and elk within any CWD Management Zone designated by the Commission, except supplemental or emergency feeding conducted by or authorized by the Department. IDAPA 13.01.18
- IDFG will integrate CWD risks into consideration by IDFG and its winter feeding advisory committees prior to making the decision to provide supplemental feed under IDAPA 13.01.18 and Idaho Code 36-123.
- IDFG bans the use of natural cervid urine for hunting big game, allowing for the use of synthetic liquid scent. IDAPA 13.01.17

**Recommended actions:**

- IDFG will provide additional education/guidance to hunters and the general public on their critical role in preventing the spread of CWD, including the need for proper disposal of cervid carcasses (whole or in part), especially when animals test positive for CWD or are harvested from CWD positive areas.

**SURVEILLANCE**

Since 1997, IDFG has sampled over 18,000 mule deer, white-tailed deer, elk, and moose for CWD. IDFG typically acquired these samples at hunter check stations, with a goal of annually sampling 1,000 animals evenly distributed among the seven IDFG administrative regions. Past strategies did not take into account potential variability in CWD prevalence among species, demographics, populations, or geographic regions.



## 2021 Strategy for Chronic Wasting Disease

In the fall of 2017 IDFG began a new surveillance program to provide a statistically sound, effective platform for detecting CWD. Mule deer typically exhibit greater CWD prevalence than other species in western states (Miller et al. 2000); therefore, they were the initial focal species for Idaho’s CWD surveillance approach. The 2017 program was based on Population Management Units (PMUs) from the Idaho Mule Deer Management Plan (Idaho 2008). Due to the robust white-tailed deer harvest and substantial populations in the North Idaho and Lower Salmon PMUs, IDFG also implemented surveillance for both deer species in these two PMUs.

In 2020, staff conducted a full review of IDFG’s 2018 Strategy for Chronic Wasting Disease, including surveillance and sampling protocol, management objectives, and the communication plan. The surveillance and sampling review resulted in the use of mule deer and white-tailed deer data analysis units (DAUs; as defined in the 2020-2025 deer management plans) in place of PMUs, the addition of elk sample weights in Mule deer surveillance areas, designated annual surveillance areas, enhanced sampling methods for targeted areas, and expanded sampling opportunities for hunters.

### Weighted Surveillance System

Well-designed sampling can achieve a high degree of confidence that CWD is not present above a selected prevalence. It is unlikely that sufficient samples will be available at the DAU scale to reliably detect a minimum threshold of 1% CWD prevalence; therefore IDFG identified seven sampling areas (Figure 1) by combining some DAUs based on geographic proximity.

CWD prevalence varies among gender and age classes. IDFG will sample both genders, and adult and yearling deer and elk. The risk for CWD infection in a particular sample also varies based on the animal from which it was collected (*e.g.*, hunter harvest, road-killed, other animals found dead, individual exhibiting symptoms consistent with CWD infection). IDFG will assign sampled individuals a weight (“point value”), based on their relative risk of CWD prevalence and demographic category (Table 1). IDFG selected these values using data from mule deer and elk in CWD positive areas in Colorado (Walsh and Otis 2012) and white-tailed deer in Wisconsin’s CWD management zone (Jennelle et al. 2018) (Table 1).

**Table 1.** Relative weights (“points”) for demographic groups of mule deer and white-tailed deer counted toward sample size goals in Idaho’s weighted surveillance program.

Demographic Group	Mule Deer	White-tailed Deer	Elk
Symptomatic female	13.5	33.33	3.71
Symptomatic male	11.42	33.33	1.99
Road-killed male/female	1.84	0.22	0.1
Found dead male/female	1.84	7.32	0.1
Harvest adult female	0.55	1.3	0.15
Harvest adult male	1	3.23	0.19
Harvest yearling female	0.37	0.85	0.05
Harvest yearling male	0.21	1	0.1

IDFG's goal is to acquire enough samples in designated sampling areas to attain 95% confidence in our ability to detect CWD at a 1% prevalence rate in the sampled population. Based on the literature, this requires a point value of at least 300 in each sampling unit. In rare instances where samples are insufficient to meet this goal, IDFG will report a confidence estimate in the statistical ability to detect a given prevalence threshold, based on the actual achieved sample size. Additionally, IDFG will try to collect samples from each DAU within a sampling area in proportion to the DAU's respective population. The actual number of samples required will vary, depending on the risk and demographic composition of sampled individuals.

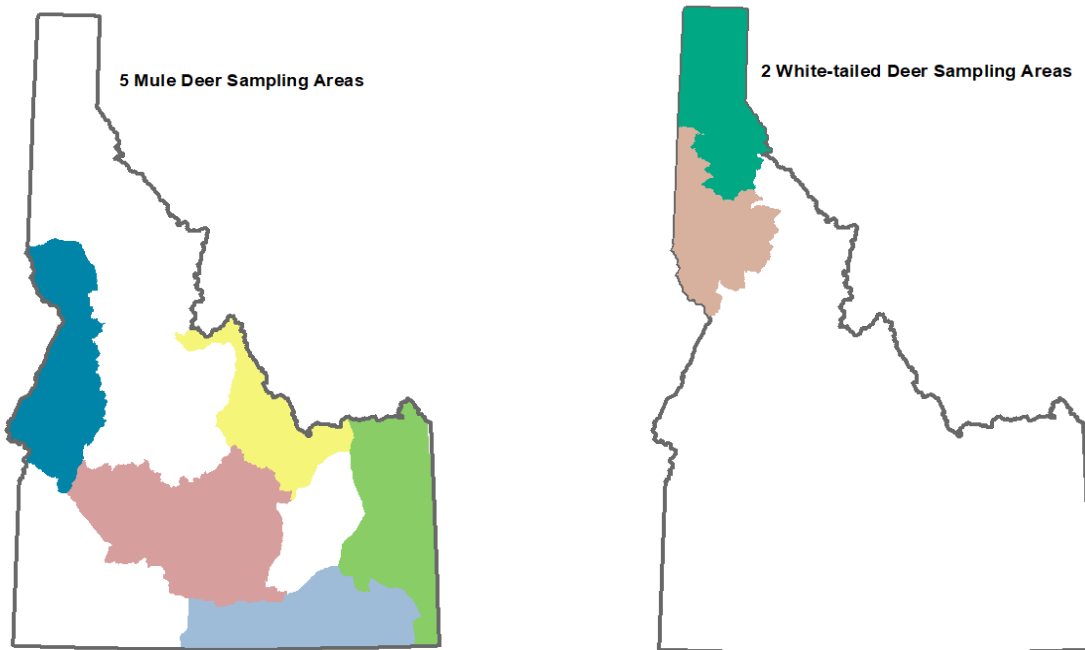


Figure 1. Chronic wasting disease (CWD) surveillance sampling areas

### Annual Sampling

Four areas are included in annual sampling, the Island Park-Palisades-Caribou and Beaverhead-Mountain Valley mule deer sampling areas and two north Idaho white-tailed deer DAUs (Northern Forest and Northern Agriculture). CWD has been confirmed in wild deer and moose in western Wyoming geographically adjacent to the Island Park-Palisades-Caribou sampling area and in white-tailed deer in western Montana near the Beaverhead-Mountain Valley area. Migration routes also put these areas at a higher risk for CWD than other sampling areas. Northern Forest and Northern Agriculture DAUs are considered higher risk due to CWD detections in western Montana.

IDFG will conduct surveillance in the other three sampling areas on a three-year rotation. This sampling schedule (Table 2) uses fiscal and staff resources efficiently, to provide intensive

localized surveillance with increased confidence in detection probability. Included in annual sampling will be any deer, elk, or moose exhibiting clinical signs of CWD anywhere in Idaho. IDFG will also continue to sample all mortalities detected in adult and yearling deer, elk, and moose radio-collared in IDFG research and monitoring projects. Samples will also be collected at regional check stations, offices and other hunter submissions. In areas of the state where deer populations are low or harvest rates are low, sampling will be opportunistic and not under the requirement of 300 points needed for statistical reporting. These areas are not represented in annual sampling or the rotational surveillance schedule. The timeframe for annual sampling will be from July 1 to June 30.

Table 2. Sampling schedule for weighted CWD surveillance in Idaho, 2021-2025.

2021-2022	2022-2023	2023-2024	2024-2025
Car-Pal-IP <sup>a</sup>	Car-Pal-IP <sup>a</sup>	Car-Pal-IP <sup>a</sup>	Car-Pal-IP <sup>a</sup>
NF <sup>f</sup>	NF <sup>f</sup>	NF <sup>f</sup>	NF <sup>f</sup>
NA <sup>g</sup>	NA <sup>g</sup>	NA <sup>g</sup>	NA <sup>g</sup>
BH-MV <sup>d</sup>	BH-MV <sup>d</sup>	BH-MV <sup>d</sup>	BH-MV <sup>d</sup>
WMc-LS <sup>b</sup>	Ban-Port-SH <sup>e</sup>	SmB <sup>c</sup>	WMc-LS <sup>b</sup>

<sup>a</sup> Car-Pal-IP = Caribou, Palisades, Island Park MD DAUs

<sup>b</sup> WMc-LS = Weiser-McCall, Lower Salmon MD DAUs

<sup>c</sup> SmB = Smokey Boise MD DAU

<sup>d</sup> BH- MV = Beaverhead, Mountain Valley MD DAUs

<sup>e</sup> Ban-Port-SH = Bannock, Portneuf, South Hills MD DAUs

<sup>f</sup> NF = Northern Forest WTD DAU

<sup>g</sup> NA = Northern Agriculture WTD DAU

### Sample Acquisition

IDFG will require state-wide sampling on any cervid that is exhibiting key symptoms of CWD, any collared cervid mortality where a sample can be obtained, and any hunter submission upon specific request. IDFG will continue to sample all cervids at hunter check stations, to include opportunistic sampling areas. Additional strategies to collect sufficient samples within the sampling areas include; targeted messaging to hunters in specific hunt areas, announcements via the IDFG website, press releases, and direct messaging to taxidermists, game processors, etc. (see CWD Strategy Communication Plan). IDFG will also collect samples from road-killed animals or other animals found dead. Trained staff will collect retropharyngeal lymph nodes from deer and retropharyngeal lymph nodes and/or obex samples from elk and moose using proper personal protective equipment.

IDFG would like to improve the number and spatial distribution of CWD samples taken from harvested animals. In order to do this, hunters will be encouraged to sample their own harvested cervid. Hunters may be asked to voluntarily participate in sampling their own harvested animal

or donate the head for sampling. Updated web pages and production of instructional information is available to regions interested in this option. Locations where hunters can drop off heads to be sampled, samples they have collected, and check station dates will be provided to increase the number of samples received. These strategies may be utilized in any area where additional samples are desired, regardless of the sampling schedule.

### **Surveillance Resource Needs**

The current annual sampling budget of \$120,000 is based on continued non-detection of CWD and use of existing hunter check station and radio-collar programs, without significant change in staffing. For surveillance where no CWD has been detected, budget and personnel needs will only increase if IDFG needs to increase personnel in the field, increase the number of check stations, or implement mandatory sample submission to collect sufficient samples.

If IDFG detects CWD, budget and personnel needs will increase to support more intensive sampling, and IDFG will adjust budget and staff resources accordingly.

## **POST-DETECTION MONITORING AND MANAGEMENT**

### **Positive Sample Result**

An animal is suspect for CWD upon the first positive test and is considered positive after a confirmatory retest. A retest will be run on the same sample or an additional sample when available. IDFG will communicate with the testing lab on test interpretation and reporting.

The CWD Communication plan and CWD Management Team are activated when any cervid in Idaho results in a suspect or positive test. The Team will consider appropriate management and communication actions. IDFG will coordinate and inform local, state, tribal, and federal partners of any positive status to provide an integrated response as appropriate. If retest/additional sampling do not confirm the initial positive, the Team will de-activate.

IDFG will establish a CWD Management Team(s) for assessment and post-detection management, the team will generally include the following roles and responsibilities:

- Team Leader (Deputy Director Operations)
- Programmatic Wildlife Implementation (Wildlife Bureau)
- Local/Regional Wildlife Implementation (Regional Office)
- Wildlife Health Program
- Communications Implementation (Communications Bureau)

If the initial result is confirmed positive, IDFG, with Commission approval, will designate a temporary CWD Management Zone (CMZ) in relation to the collection location of the positive sample. The defined area of the temporary management zone will be determined by considering time of year, location, species, age and sex of the positive animal(s), and available information

about the movements and migratory patterns of the affected species in that area and Commission approval.

### **Monitoring**

As one moves from surveillance for detection to assessment and monitoring, the complexity of the surveillance strategy increases. If IDFG detects CWD in a sample unit, the objective of surveillance will change to determine: (1) the initial CWD prevalence rate in the population or subpopulation as a baseline, (2) changes in prevalence over time, (3) changes in prevalence as related to changes in population management strategy, and (4) geographic distribution of the disease over time.

IDFG will adapt post-detection surveillance on a geographic basis and scale appropriate for the location, estimated prevalence, and post-detection management strategies. If feasible and with Commission approval, IDFG will promptly collect additional samples from the temporary CMZ to assess the geographic distribution and prevalence of the disease. These additional samples will be used to determine prevalence rates in a non-weighted random sampling design that differs from pre-detection surveillance. Samples will be distributed among sex and age classes in a manner that reflects the predicted age and sex ratios in the temporary CMZ, excluding fawns/calves. IDFG will strive to acquire sufficient samples to attain 95% confidence in our ability to assess prevalence rates within a 3% margin of error. The number of samples necessary will vary depending on the estimated population size within the temporary CMZ. (Appendix B)

The CWD Management Team will establish an adaptive monitoring protocol and management plan for a Permanent CWD Management Zone (PCMZ) to be presented to the Commission. The CWD Management Team will base management actions on CWD prevalence and distribution in the PCMZ.

### ***Positive Sample Result at Captive Animal Facility***

#### *Captive Elk, Fallow Deer, Reindeer*

Idaho Code Title 25, Chapter 37; IDAPA 02.04.19 gives ISDA jurisdiction over captive cervids (elk, fallow deer and reindeer). Should a positive CWD detection occur at a captive cervid facility under ISDA jurisdiction, IDFG will assemble a CWD Management Team to coordinate with ISDA and IDHW on actions and communication objectives under the agency's respective jurisdictions.

#### *Captive White-tailed Deer, Mule Deer, Moose*

IDFG will immediately quarantine the captive cervid facility and conduct an inventory of all animals on the facility. IDFG will evaluate animal records and perform trace-in and trace-back on all animals for as many years as possible. Animal tracing may require the assistance of ISDA or other entities. IDFG will continue to manage captive animals at the facility under quarantine, or lethal removal will be considered as appropriate. IDFG will test all animals that are lethally removed and dispose of carcasses according to local and county prion disposal restrictions.

*Sampling of Wild Cervids Outside of Captive Cervid Facility with a Positive Detection*

Regardless of whether captive cervids are under ISDA or IDFG jurisdiction, with Commission approval, IDFG will promptly collect additional samples from a temporary CMZ to assess the geographic distribution and prevalence of the disease in a perimeter area (1-5 km) surrounding the captive facility to determine whether CWD is present, and if so, its prevalence and distribution. Samples will be distributed among sex and age classes in a manner that reflects the predicted age and sex ratios in the temporary CMZ, excluding fawns/calves. IDFG will strive to acquire sufficient samples to attain 95% confidence in our ability to assess prevalence rates within a 3% margin of error. The number of samples necessary will vary depending on the estimated population size within the temporary CMZ (Appendix B). IDFG will use Commission approved hunts as much as possible for sample collection, and will use staff and contractors as needed to ensure sufficient sample collection.

The boundaries of the temporary CMZ will expand should CWD positive animals be detected outside the initial sampling area(s) and will continue to expand until positive animals are no longer detected. The CWD Management Team will develop an adaptive monitoring protocol and management plan appropriate for the particular PCMZ.

**CWD Management Actions**

Management of CWD is presumed to be possible, but involves a long-term commitment, likely for decades, with repeated treatments and surveillance to evaluate the effectiveness of management actions. Few data-driven experiments exist to evaluate the effectiveness and consequences of CWD management actions. There have been numerous modeling experiments, and most suggest that overall effectiveness of CWD management actions correlates to CWD prevalence in the management zone.

Management actions in free-ranging cervid populations are generally ineffective in eliminating CWD due to the difficulty in removing CWD prions once they are present in the environment, combined with the lack of treatment, cure, or vaccine. Therefore, management actions are generally aimed at stabilizing and suppressing CWD outbreaks. The primary tool identified to date by states and provinces experienced in managing CWD in wild cervids is reduction of deer and elk populations in CWD-infected areas to limit the potential spread of the disease through contact. Tools include reduction of infected animals on the landscape, culling infected or suspect populations, and managing for certain age classes and sex ratios less likely to harbor and spread CWD.

Tools and management actions are outlined below (their order does not imply preference). IDFG may use multiple tools to reach management objectives. The CWD Management Team will establish an adaptive monitoring protocol and management plan for a PCMZ. The Team will base management actions on CWD prevalence and distribution in the PCMZ, with implementation at the GMU, PMU, DAU level or grouping as appropriate.

IDFG will use hunter participation and existing hunt structures where and when feasible in the implementation of a CWD management plan. However, achieving management objectives may

require more intensive intervention, including, but not limited to, modified hunt structures to use public hunters to target specific demographics of the PCMZ population, and/or agency culling of infected and suspect animals.

***General Actions for any CWD Management Zone***

- Provide proactive communication and educational outreach for hunters and general public per Communication Plan.
- Determine and continually monitor prevalence rate and geographic extent through increased surveillance as described in Surveillance section.
- Implement carcass transport rules for any CWD management zone and restrict carcass disposal to prion approved county landfills.
- Identify ways to assess effectiveness of management actions.

***Management Options***

*1. CWD Containment at a prescribed prevalence*

Objective: To contain CWD within a geographic area at a prescribed prevalence (between 0-2% prevalence would be optimal to manage for population level effects).

Actions:

- Reduce wild cervid density by removing animals to achieve the prescribed prevalence. Removing animals should use public hunters where feasible. IDFG and USDA Wildlife Services (USDA WS) may remove animals if target goals cannot be met.
- Test all mortalities for CWD.

Hunt structure options to achieve prescribed prevalence:

- Manage for a younger age structure in the population.
- Reduce buck to doe ratios
- Shift season timing to November and December.
- Change bag limit to “either sex.”
- Increase hunter participation.
  - Increase tag numbers.
  - Convert controlled hunts to general hunts.
  - Increase bag limits.

Considerations:

- Long-term effort required to manage the population at a low prevalence
- Long-term management at lower density based on prevalence
- Concerns of hunters and the general public in altering hunt structures and managing populations at lower densities
- Uncertainty of effectiveness of management actions in containing disease in the PCMZ

## 2. *Localized Eradication*

Objective: Eradicate CWD in a localized population (a captive cervid facility or a small, defined geographic area).

Action:

- Remove all susceptible cervids in the facility or area on a repeated basis. Removing animals in a localized wild population should use hunters if feasible, likely through use of a special hunt. IDFG and USDA WS may remove animals if target goals cannot be met.
- Test all mortalities for CWD.
- This action will require repeated removals in the area.

Considerations:

- Difficulty in achieving total eradication
- Not feasible on a large scale
- Likely requires long-term (multiple years), consistent effort required to keep a PCMZ free of wild cervids
- Seasonal migrations of free-ranging mule deer and elk could complicate containment
- Difficulty in sustaining public support for the length of time needed for effective eradication.
- Expense of eradication activities performed by agency personnel or USDA WS

## 3. *Targeted Culling (Hot Spot Management)*

Objective: Reduce local populations of affected cervids by removing positive individuals and associated social groups in localized areas to control prevalence, transmission, and spread to adjoining areas.

Action(s):

- Capture, collect tissue sample, and radio-collar animals.
- Where lab results return a positive result, remove the CWD-positive radio-collared animal and any animals in the immediate social group(s) associated with the positive animal(s). Removing animals would use hunters if feasible, through special hunts with strictly defined rules and target goals. IDFG and USDA WS personnel may provide additional assistance if hunters cannot meet the target goals.
- Test all mortalities for CWD.

Considerations:

- Live animal testing through rectal or tonsil biopsy is not currently an approved diagnostic test for CWD. However, testing protocols are available and many research groups are working to validate test procedures. Live animal testing protocols for CWD require genetic characterization of marked animals to interpret the sensitivity of the test.
- This approach requires knowledge of CWD prevalence and infection within the PCMZ, and would not be feasible in early stages after discovery of CWD.



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- Targeted culling activities using mark-recapture protocols may require helicopter capture.
- Concerns of hunters and the general public in altering hunt structures
- Expense associated with additional resources for intensive capture and collaring (*e.g.*, helicopter time, GPS collars, higher testing costs, including genotyping)
- Uncertainty of effectiveness of management actions in containing CWD

### **Management Resource Needs**

IDFG will need to further explore more options for appropriate carcass disposal and associated costs.

### **Research and Development**

Researchers at institutions worldwide are trying to better understand CWD and the underlying etiology of disease transmission and persistence. Researchers are also trying to develop tools for managing CWD. IDFG will explore use of new tools, validated tests, and other research findings as they become available.

IDFG will evaluate information it collects from CWD-positive free-ranging individuals including age, sex and genotyping results to better understand trends in genetic, age, and sex susceptibility to CWD. IDFG will also factor CWD prevalence into Integrated Population Models used to estimate populations for species management decisions in general.

Research regarding vaccines and contraceptives for herd management is commonly identified as having potential for CWD management. Even if a vaccine were developed, vaccine delivery for wild populations generally presents challenges for delivery, whether through feed, aerosol, etc. Similarly, contraception to control population density and growth is generally not feasible in large free-ranging populations; however, USDA WS is licensed to distribute a GnRH product for cervids, which has been effective in long-term reductions in small local cervid populations. IDFG will continue to evaluate these options in light of ongoing research and practical challenges.

## **COMMUNICATIONS**

Communication plans describe the various communication roles, or functions, required to achieve communication objectives (see also Appendix A). Communication goals, objectives, and functions will differ between pre-detection and post-detection scenarios, IDFG is currently engaging in messaging and information campaigns for pre-CWD detection. Upon a suspect or positive detection the CWD team will assign staff to support the implementation and ongoing activities as outlined in the CWD communications plan. The communication team will work under an adaptive approach that prepares content and processes post-CWD detection.

## **Pre-Detection**

Pre-detection communication focuses on raising awareness about CWD with Idaho hunters and the general public. Messaging includes the role hunters and the public can play in preventing CWD in Idaho and how hunters can help in CWD surveillance.

IDFG currently provides general information about what CWD is, how it is transmitted, and why IDFG is concerned about the potential for CWD in Idaho cervids. The IDFG website, <https://idfg.idaho.gov/cwd>, is a platform to create text and video content to address questions and provide links to other resources regarding CWD.

IDFG's web content includes current sampling surveillance areas, video links explaining the purpose of CWD sampling and testing, instructional information for sampling and aging deer, and how and where to submit samples. The web content includes a web-based reporting interface that streamlines the reporting process and allows hunters to follow-up based on their own interest. Each fall, IDFG will issue a news release to inform hunters and the general public of the updated sampling and surveillance areas in the state and provide information on ways to submit samples for CWD testing. IDFG will continue to develop materials for use at hunter check stations. Included in pre-detection communications are prepared letters and emails that can be used to target hunters participating in specific hunts where samples are desired.

Management of approvals for pre-detection communications is consistent with agency communications of statewide interest.

## **Post-Detection**

The objective of post-detection communication is to inform hunters, cooperating agencies, and the general public about the presence of CWD in Idaho and IDFG's management actions.

IDFG will notify designated contacts identified in the CWD Communication Plan (Appendix A) of a CWD detection. The CWD Communication Plan will maintain a list of communication points of contact and will coordinate communications planning with these entities as their priorities allow.

The CWD Management Team will implement specific post-CWD detection communication objectives; consistent messaging across agencies, identify staffing of communication functions and roles, and management of approvals for communication. IDFG has developed templates for internal information packets and a draft press release to communicate a CWD detection.

Post-detection communication messaging regarding long-term species management will depend on the management action(s) chosen. Signage posting, information packages, and web-services may need to be expanded depending on the services IDFG decides to provide to hunters in CWD positive areas.

In a post-detection scenario, the CWD Management Team will identify communication objectives and functions as described below.

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### *Communication Functions*

- **Communication Leadership:** Overall responsibility for development of communication objectives, strategies, and tactics
- **Liaison(s):** Internal coordination (IDFG and Commission) and external coordination with officials and other government agencies. Establish communications coordination mechanisms to enable efficient and effective communication with cooperating agencies
- **Message Development and Material Production:** Transform information into messages, questions and answer documents, video, and other communications tools to help audiences assess risk and take action, provide input to agency decisions, and access additional resources
- **Media Relations:** Responsibility for providing information to media, including social media (e.g., arranging press conferences, ensuring spokespersons are adequately briefed on common messaging goals)
- **Website Management:** Ensures that the latest information on the web regarding CWD is timely, and that web traffic, trends and questions are acknowledged and answered
- **Management of Internal Approvals:** Coordinate clearance and approval for the public release of information, communications materials, etc.
- **Listening:** Responsibility for gathering and analyzing perceptions and knowledge gaps surrounding CWD and reflect findings back into communication decision making
- **Communication Evaluation:** Ensures that communication processes and outcomes are assessed and measured, taking into account any identified knowledge gaps. Applies the results of evaluation to improve communication response efforts during current and future outbreak and in future responses

### *Coordination with Cooperating Agencies*

A critical component of this Strategy is effective communication and coordination regarding CWD impacts in Idaho, with the public, government agencies, and cooperating partners.

ISDA is the lead agency in Idaho for communications on health of captive elk, fallow deer, and reindeer in Idaho. Should CWD be detected in the state, ISDA will be providing recommendations to protect captive herds and facilities.

Federal, state, tribal and local public health agencies are responsible for making public health recommendations regarding CWD. These agencies have concerns over the potential introduction of CWD into Idaho and will have responsibility for communications regarding some aspects of

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CWD. IDFG will rely on the Centers for Disease Control (CDC), IDHW and local Idaho Public Health Districts (PHDs) for recommendations regarding potential human health risks associated with exposure to CWD. IDFG communications will link or otherwise refer to CDC, IDHW, and PHD recommendations regarding CWD's potential effects on human health, including safety risks associated with the consumption of meat from CWD-positive animals. Since the late 1990s the recommendation has been, for any prion disease, to make every effort to keep high risk tissues out of the human food supply (<https://www.cdc.gov/prions/cwd/index.html>). More recently, the CDC has recommended that hunters in areas known to have CWD-positive animals have their animal tested and to avoid consumption of any tissue from CWD-positive animals.

**APPENDIX A**

**CWD Communication Plans**  
*(Pre-Detection and Post Detection)*

**Goal: (What do we want?)**

*Pre:* Inform public and hunters about the threat of CWD and what we are doing about it

*Post:* Inform public and hunters about the presence of CWD and what we are doing about it

**Focus: (What do we want to say? What is the issue really about?)**

*Pre:*

- We are aware of the threat & we care
- We are testing animals
- We have a team that is creating a response for when it comes to Idaho
- How the public/hunters can help

*Post:*

- We have a plan and protocols in place & we care
- We keep public informed about affected areas
- What hunters can do (testing, processing meat, etc.)
- IDFG is managing for the benefit of all, we will need the public to be patient and engaged.

**Target Audiences: (In order of priority)**

*Pre-Detection*

- Governor, Legislature, Commission (DO)
  - *Provide updates annually or as requested to inform and educate*
- IDFG Staff
  - Develop a CWD working group with Bureau of Wildlife, Bureau of Communications, Directors Office, and regional staff to work on implementing and updating the CWD strategy, as well as preparing for CWD in Idaho
  - Provide internal fact sheets and communications to staff to assist them in talking to the public and better understanding IDFG's CWD strategy and the impact CWD will have on Idaho
- Other agencies & entities (One Health Partners)
  - Department of Agriculture: Contact Animal Industries Veterinarians (208-332-8540)
    - Preference for Dr. Barton, two other veterinarians should also be available
    - In the chance there is a POS in AG jurisdiction ISDA will contact the Director's Office
  - Idaho Department of Health and Welfare

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- Fax # 332-7307
  - Attn: Dr. Leslie Tengelsen. Notice of Positive CWD and any lab paperwork.
  - IDHW will follow up with CDC and district health offices.
- Idaho Department of Environmental Quality
  - Matthew Beeter, Solid Waste Manager (208-373-0121)
  - DEQ, County Commissioners, and Public Health Districts are responsible for solid waste and carcass disposal
- Media
  - Press releases, blogs, social media posts
  - Develop an annual CWD media calendar to support all communications efforts
- Hunters/public
  - Direct communication for sampling of harvested animals
- Taxidermy & Wild Game Processors
  - Providing information on new CWD rules that restrict carcass transport from CWD positive states

### *Post- Detection (immediate)*

- Governor & Commission
  - *Contact* issue with CWD plan, location of positive,
  - Provide situational updates as available and set up dedicated calls
- IDFG Staff
  - Provide detailed information and updates related to the positive detection, surveillance plans, initial CWD management zone and other pertinent information for all staff
- Other agencies & entities
  - Department of Agriculture: Contact Animal Industries Veterinarians (208-332-8540)
    - Preference for Dr. Barton, two other veterinarians should also be available
    - In the chance there is a POS in AG jurisdiction ISDA will contact the Director's Office
  - Idaho Department of Health and Welfare
    - Fax # 332-7307
    - Attn: Dr. Leslie Tengelsen. Notice of Positive CWD and any lab paperwork.
    - IDHW will follow up with CDC and district health offices.
  - Idaho Department of Environmental Quality
    - Matthew Beeter, Solid Waste Manager (208-373-0121)

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- DEQ, County Commissioners, and Public Health Districts are responsible for solid waste and carcass disposal
- Idaho Department of Transportation
  - Carcass removal and carcass disposal in initial CWD management zone and any subsequent management zones
- Federal, State & Private Land Managers (USFS, BLM, USFWS, DoL, Timber companies and Access Yes)
- Idaho Outfitters & Guides Association
- Local landowners
- Media
- Hunters/public
- Taxidermy & Wild Game Processors (Human Health & Safety, carcass transport, carcass disposal)

### **Key Messages (web, videos, blogs, social media, print, and press releases):**

#### *Pre:*

- What is CWD? (And can humans get it?) – Brochure, Business cards, Internal Fact Sheets
- Why CWD is bad for wildlife and bad for hunters
- Why are you testing my harvested animal (sampling & testing)?
- How hunters can help? (testing, observations & carcass transport & disposal)
- What will you do if it comes here?

#### *Post:*

- Where it has been found, how widespread? (Will my hunting area be ok?)
- Plans and protocols (Can it be stopped or controlled?)
- Can hunters eat their meat?
- How soon can I get test results on my animal?
- What is Idaho Fish and Game doing about it?

### **Strategies:**

#### *Pre:*

- Updated web page dedicated to CWD with videos, photos & FAQs
- Annual news releases and social media posts about sample areas before hunting season with link to CWD page
- Develop yearly calendar for marketing, blogs, social media posts
  - Ensure content assignments based on time of year and identified needs

#### *Post:*

- Create response team that will be primary point of contact for the CWD response effort and will communicate efforts to Idaho Fish and Game administration/commission.



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Team Leader (Deputy Director Operations)  
Programmatic Wildlife Implementation (Wildlife Bureau)  
Local/Regional Wildlife Implementation (Regional Office)  
Wildlife Health Program (Lab Staff)  
Communications Point of Contact and Implementation of Messaging  
(Communications Bureau)

- Draft news release about confirmation written and ready to send out, add relevant details
- Identify spokespersons for media in each region affected-***Regional Supervisor or PIO***
- Create small handout with FAQs for check stations that direct to webpage for detailed information (Updated Post-detection Brochure, business cards and internal fact sheets)
- Update the CWD web pages
  - Include maps and information on the initial CWD Management Zone
  - IDFG surveillance plans as they develop
- Create media and update existing content on initial CWD Management Zone, rules that go into effect in a CWD Management Zone, Carcass transport and disposal

### **Pre-Detection Government Partner Outreach Meeting Proposal (D.O. lead)**

*Include PIO for each, anticipate an annual check-in update – roles/communications/issues progress*

**Stakeholders:** The below agencies will be invited to send representative(s) to the informational meeting.

- Idaho Governor's Office
- Idaho Fish & Game
- Idaho State Department of Agriculture
- Idaho Office of Species Conservation
- Idaho Department of Environmental Quality
- Idaho Department of Health and Welfare
- Idaho Department of Transportation
- Idaho Department of Lands
- Idaho Health Districts
- Idaho County Commissioners
- Idaho Department of Parks and Recreation
- US Bureau of Land Management (BLM)
- US Forest Service (USFS)
- US Department of Agriculture (USDA) Animal Plant Health Inspection Services (APHIS)
- US Fish and Wildlife Services (USFWS)

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- National Park Service (NPS)

### **Pre-Detection Calendar (Awareness, Buy in for Awareness Measures}**

- **January** – Legislative update & Commission Briefing
  - Media/email/social: Outcome of previous year’s sampling (how many animals tested, how many hunters provided samples, etc.) and any key, new CWD status information from bordering states
  - Review if any new ads/info needed for Big Game Proclamation
  - Present updated CWD Risk Strategy to Commission
  - Thank-you to hunters, partners for last year’s efforts
  - Check in with industry (Farm Bureau, ICA, Grain Growers, other NGOs) for story timelines in industry magazines/newsletters, Idaho Association of Counties
  - Newsletter brief key NGOs? ICL, IWF, RMEF, MDF, N. Idaho Whitetails
- **May** – CWD push to hunters applying for big game controlled hunts (rules, surveillance) Survey regions for CWD info/materials for any upcoming “events”
- **July** – Annual Surveillance Update, Commission Briefing, Web site and messaging updates for new surveillance year, update business cards?, Partner Outreach Meeting
- **August – September** – What is CWD, why do we care, carcass transport and rules, sample plans, communications to taxidermy/meat packers  
Integrate new platform – podcast, new video?
- **October - December** – Regional CWD surveillance sampling and surveillance plans, hunter assistance/field dressing, out of state hunters and CWD transport rules, CWD Q&A

### **Post-Detection Calendar = Pre-Detection Calendar “Plus” (Awareness + Understanding Response Phase)**

#### Targets:

- Get buy in from specific groups for effective response
- Communicate logistics and effectiveness of response
- Set stage for reasonable expectations
- Generate ongoing supportive climate from stakeholders/public

**APPENDIX B**

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