

ARIZONA GAME AND FISH DEPARTMENT

Chronic Wasting Disease Detection, Response, and Management Plan

May 15, 2023



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ARIZONA GAME AND FISH DEPARTMENT
Chronic Wasting Disease Prevention, Detection, Response, and Management
Plan

EXECUTIVE SUMMARY

Chronic wasting disease (CWD) is endemic in a number of deer and elk herds in the central United States. Since being recognized by biologists in Colorado in free-ranging mule deer in 1981, population declines have been observed in endemic herds, especially when prevalence rates exceed 10%. Few agencies have been able to consistently apply any management activities for more than a few years and as a result, no best method for control has been identified. Prevalence of the disease appears to be associated with the frequency of contact between infected and uninfected animals and older males tend to have higher prevalence rates. Should CWD be detected in Arizona deer or elk, the recommendation is for a rapid institution of management activities with the primary objectives of removing infected animals and reducing the frequency of contact between infected and uninfected individuals.

Management of CWD in Farmed or Captive Cervids

1. A quarantine will be placed on the facility.
2. The origin of all of the animals brought into the facility for the past 10 years will be determined, if possible.
3. Trace-forward all of the animals shipped from the facility in the past 5 years, if possible.
4. All recipients of animals shipped from the facility and the associated wildlife management and agricultural agencies will be notified that they have received animals from a facility where CWD has been detected.
5. Eventual closure of the facility is advised by either natural attrition and removal of animals or by depopulation. Fencing to prevent direct contact between captive and free-ranging wildlife must be erected.
6. Wild cervids should be excluded from the property for an extended period after the facility has been depopulated.
7. At this point only one game farm is approved for cervids (red deer); cervids are also being held by zoos.

Management of CWD in Wild Cervids

IMMEDIATE RESPONSE

1. The Arizona Game and Fish Department (AZGFD) will establish an Initial Response Area (IRA) and a CWD Management Zone.
2. If the detection occurs during an open season for deer or elk in the affected Game Management Unit (GMU), the AZGFD may do one or more of the following under emergency rulemaking or by Commission order:
 - a. Require CWD testing of all hunter-harvested and salvaged road-killed cervids.
 - b. Establishment of check stations to sample harvested cervids for CWD testing with the objective to test as many harvested animals as possible.

- c. Require cervids to be field dressed (quarter and/or remove all organs) and leave gut pile in the GMU or have carcasses transported directly to a meat processor or taxidermist while maintaining evidence of legality.
 - d. Require gut piles and other inedible or otherwise wanted parts to be deposited in dumpsters.
- 3. If detection occurs outside of an open season in the affected unit, a select number of deer and elk of both sexes will be removed from the IRA.
 - a. Objective is to sample as many cervids deemed necessary to determine distribution of infected animals.
 - b. This objective shall be accomplished as soon as possible after detection.
 - c. In addition to testing for CWD, the removed cervids, along with the index case, will be evaluated for genetic susceptibility to CWD and for relatedness.
 - d. Either AZGFD personnel, USDA-APHIS-Wildlife Services, or trained volunteers could be used.

LONG-TERM MANAGEMENT

Some of these processes will occur concurrently with the immediate response. These processes will address the management objectives of limiting the spread of CWD and reducing the prevalence of, and if possible eliminating CWD in the affected area. Also incorporated in this section is a long-term monitoring program.

- 1. The Department should evaluate resources needed (personnel, and funding) to accomplish management objectives and if necessary prioritize those that will be most effective.
- 2. Adjustments to population management objectives and hunt structure to reduce the number of animals more likely to be infected, mature males. Overall density does not need to change.
- 3. Continue to monitor prevalence by testing as many harvested animals as possible.
- 4. Adaptive management process:
 - a. Response to management actions will be evaluated over five years or more.
 - b. Evaluate trends in overall prevalence as well as by demographic category in relation to demographic and population trends.
 - c. Establish action levels at which management activities will change.
- 5. Implement a directive or emergency rule pursuant to A.R.S. §17-250 that will limit the transportation of potentially infected carcasses.
- 6. Management of infected carcasses:
 - a. Hunters that have harvested a CWD-positive animal will be advised of the CDC recommendations regarding consumption of meat from a positive animal and provided recommendations or requirements for the disposal of unwanted remains.
 - b. Game meat processors and taxidermists will be provided with recommendations for post-processing disinfection in order to reduce contamination of uninfected meat.

INTRODUCTION

Chronic wasting disease is a fatal neurologic disease affecting deer, elk, moose, and caribou characterized by progressive weight loss, abnormal behavior, and eventual death. Chronic wasting disease belongs to a group of diseases called transmissible spongiform encephalopathies (TSEs). Chronic wasting disease is similar to scrapie in sheep and bovine spongiform encephalopathy (also known as mad cow disease) in cattle as well as variant Creutzfeldt-Jakob disease (vCJD) in humans. These disorders are caused by abnormal proteins called prions. Chronic wasting disease has been detected in 30 states and 4 Canadian provinces, Norway, Finland, Sweden and South Korea as of September 2022 (Figure 1).

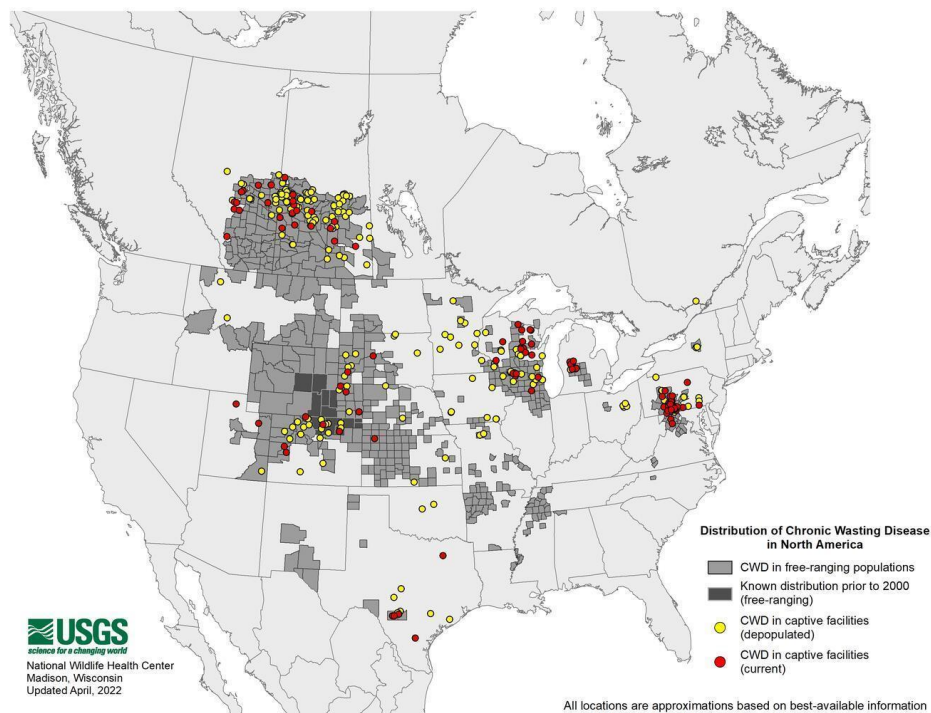


Figure 1: Distribution of Chronic Wasting Disease in North America. Credit: Bryan Richards, USGS National Wildlife Health Center

The Arizona Game and Fish Department (AZGFD) is charged by Title 17 of the Arizona Revised Statutes (A.R.S.) with the responsibility for the management of wildlife in Arizona. Furthermore, the statute defines wildlife as including both wild animals that are found in the wild and those held in captivity. Therefore, disease issues for captive and free-ranging wildlife are the responsibility of the AZGFD including those of all cervids whether the animals are native, non-native, captive, farmed, or free-ranging.

The AZGFD began conducting CWD surveillance in 1998 and has collected over 30,000 samples. Samples are acquired through four different processes: a reimbursement program established with taxidermy and meat processor businesses throughout Arizona in which they receive \$10 for each head accompanied by a properly filled out data card; at the check station on the Kaibab Plateau; by regional personnel from hunter-harvested animals; and from animals harvested in targeted surveillance. During the 2021/2022 season, the Department collected and

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tested a total of 1,253 samples, a decrease of 21.1% from last year (n=1,589). During the past three seasons, the AZGFD focused on further increasing sample size in areas of highest concern and placed less emphasis on the centralized units in the state. The areas of highest concern include the game management units (GMUs) on the northern (high priority) and eastern (high and medium priority) portions of the state, as well as samples from animals harvested outside of Arizona that are brought into the state. Samples collected along the northern border of the state (12A/B, 13A/B) accounted for 16.9% (n = 212) of all samples tested and samples collected from high-priority units along the eastern border accounted for 15.6% (n = 195).

The current surveillance program includes an education component for hunters and the general public. Information is provided in several AZGFD publications throughout the year and on the website. In 2022 the AZGFD began offering workshops on sample collection to hunters and guides. Hunters that receive a tag on the Kaibab Plateau are provided with information about the availability of voluntary testing through the check station (where there is a mandatory checkout for GMU 12A).

Arizona is currently a CWD-free state but it shares borders with three CWD-positive states: Utah, Colorado, and New Mexico. This plan will be used to aid Arizona in the ongoing surveillance for and management in response to the detection of CWD. The objectives are to optimize disease surveillance, prevent the introduction of the disease, and reduce the impact of disease on the state should it be detected. This plan incorporates regulating animal and carcass movement, performing surveillance, and planning for and responding to disease detection.

PLAN GOALS

It is the goal of this plan to provide a process to manage CWD in Arizona based on the current understanding of the epidemiology of the disease, including preventing the introduction of CWD into Arizona by human activity, conducting appropriate surveillance to detect CWD in Arizona in key cervid populations, coordinating with other federal and state agencies on CWD management issues, providing information to the public regarding CWD, and responding to the detection of CWD in free-ranging or captive cervids to reduce the dissemination of the disease and its impact on the state.

CURRENT METHODS OF REDUCING THE RISK OF INTRODUCTION

The following recommendations and actions are derived from the knowledge that cervids acquire CWD from direct contact with infected animals, the prion persists in carcasses and the environment, and the primary route of infection is ingestion (inhalation, venereal, and transplacental transmission may also occur). Infected animals can shed the organism in feces, saliva, and urine and thereby contaminate the environment. The infectivity of these substances has been established using transgenic mice (Tamgüney et al., 2009; Haley et al., 2009) and cervids (Haley et al., 2011; Mathiasson et al. 2009). Scavengers consuming carcasses may disseminate the prion because it is not inactivated by passage through avian or mammalian intestinal tracts (Nichols et al., 2015; Vercauteren et al., 2012). Prions may also be taken up by the roots of plants and transported into the aerial portion (stem and leaves) (Pritzkow et al. 2015).

Current Policy Reducing Risk

The AZGFD has issued a directive for the handling and possession of live deer fawns and elk calves which requires that orphans be returned to the wild within 48 hours, or placed with a licensed zoo or euthanized after 48 hours of captivity. Reintroduction to the wild is not allowed when these species have been held in captivity for more than 48 hours.

Current Rules Reducing Risk

The AZGFD entered into rulemaking for Article 3 and 4 and amendments were made effective in 2013 and 2015, respectively. As a result several rules aimed at preventing the introduction of CWD were enacted:

12-4-303(A)(4)

An individual shall not use edible or ingestible substances to aid in taking big game. The use of edible or ingestible substances to aid in taking big game is unlawful when:

- a. An individual places edible or ingestible substances for the purpose of attracting or taking big game, or
- b. An individual knowingly takes big game with the aid of edible or ingestible substances placed for the purpose of attracting wildlife to a specific location.

R12-4-305(I)

An individual may possess, transport, or import only the following portions of a cervid lawfully taken in another state or country:

1. Boneless portions of meat, or meat that has been cut and packaged;
2. Clean hides and capes with no skull or soft tissue attached, except as required for proof of legality;
3. Clean skulls with antlers, clean skull plates, or antlers with no meat or soft tissue attached, including velvet antlers;
4. Finished taxidermy mounts or products; and
5. Upper canine teeth with no meat or tissue attached.

R12-4-430

B. A person shall not import a live cervid into Arizona, except a zoo license holder may import any live nonnative cervid for exhibit, educational display, or propagation provided the nonnative cervid is quarantined for 30 days upon arrival and is procured from a facility that meets all of the following requirements:

1. The exporting facility has a disease surveillance program and no history of chronic wasting disease or other wildlife disease that pose a serious health risk to wildlife or humans and there is accompanying documentation from the facility certifying there is no history of disease at the facility;
2. The nonnative cervid is accompanied by a health certificate, issued no more than 30 days prior to importation by a licensed veterinarian in the jurisdiction of origin; and
3. The nonnative cervid is accompanied by evidence of lawful possession, as defined under R12-4-401.

E. A person shall comply with the requirements established under R12-4-305 when transporting a cervid carcass, or its parts, from a licensed private game farm.

G. The holder of a private game farm, scientific activity, or zoo license shall ensure that the retropharyngeal lymph nodes or obex from the head of a cervid over one year of age that dies while held under the special licenses is collected by either a licensed veterinarian or the Department and submitted within 72 hours of the time of death to an Animal and Plant Health Inspection Service certified veterinary diagnostic laboratory for chronic wasting disease analysis. A list of approved laboratories is available at any Department office and online at www.azgfd.gov or www.aphis.usda.gov.

The license holder shall:

1. Ensure the shipment of the deceased animal's tissues is made by a common, private, or contract carrier that utilizes a tracking number system to track the shipment.
2. Include all of the following information with the shipment of the deceased animal's tissues, the license holder's: a. Name, b. Mailing address, and c. Telephone number.
3. Designate, on the sample submission form, test results shall be sent to the Department within 10 days of completing the analysis. The sample submission form is furnished by the diagnostic laboratory providing the test.
4. Be responsible for all costs associated with the laboratory analysis.

The AZGFD reviews rules every 5 years on a rotating cycle. Article 3 and Article 4 are under review as of this date. The AZGFD will be editing these rules for clarity and to simplify compliance.

Carcass disposal

Proper disposal of tissues and carcasses using methods that will prevent the persistence and dissemination of CWD in the environment is critical to the protection of state resources. Disposal of materials according to CWD status (positive or negative) and based on current research on the survival of prions in soil and water, and movement through plants, soil, landfill substrates, and groundwater. Current research indicates that the CWD prion can be found in ground water in CWD-endemic areas (Nichols et al., 2009). Research using simulated landfill material found that the CWD prion would migrate through typical landfill material and potentially contaminate ground water but that a layer of soil with 8-27 % clay particle content would halt the migration (Jacobson et al., 2009). Incineration is also an effective method of destruction but may not be feasible in some regions. Currently, the AZGFD is notified by the CWD program managers of other states when a resident of Arizona harvests a CWD positive animal. Hunters that have harvested a CWD positive animal are advised of the current Center for Disease Control and Prevention (CDC) recommendations regarding consumption of meat from a positive animal. At this time, prior to the detection of CWD in Arizona, AZGFD personnel offer to properly dispose of any unwanted meat. Should CWD be detected in Arizona, additional processes for carcass management will be introduced.

Outreach

The AZGFD provides regular communication to the public regarding CWD, the importance of hunters for prevention, surveillance and management, and the activities conducted by the AZGFD in regards to the disease. In 2021, the AZGFD conducted several focus groups to develop outreach material for a preseason information campaign via print, visual, and social

media outlets. The developed material will be revised as needed and used on a regular basis prior to and during the hunting season.

DETECTION

Hunters from around the country choose to hunt in Arizona because of the unique and outstanding deer and elk populations. Continuation of CWD testing and confirmation of the CWD-negative status of Arizona deer populations are important for maintaining the value of this hunting opportunity. Surveillance methods are reviewed and assessed annually for efficiency, specificity, and sensitivity. Coordination among agency personnel as well as with federal and state agencies is a requirement for a successful CWD surveillance program for the state and region.

Hunter-harvested surveillance

Hunter-harvested surveillance entails collection of samples from deer and elk harvested by hunters. This is an important element of a CWD surveillance and management plan as large numbers of samples can be collected using the normal harvest of wildlife. Sampling quotas are established based on species population estimates at a biologically relevant geographic scale and provide for detection of the disease when present at a 1% or greater prevalence rate with a 95% confidence level. An analysis of AZGFD surveillance determined that sample collection should focus on units closest to CWD endemic areas and on the larger cervid populations (Clement et al. 2023).

1. Arizona has been divided into geographic regions and stratified for surveillance using risk criteria as determined by known epidemiological characteristics of CWD (Figure 2):
2. High priority surveillance areas:
 - a. Arizona Strip (Region 2).
 - b. White Mountain Borderland (Region 1)
 - c. Southern borderland (Region 5).
3. Medium priority surveillance areas:
 - a. White Mountain transition (Region 1).
 - b. Southern borderland transition (Region 5).
4. Low priority surveillance areas— the remaining GMUs divided into 4 areas determined by region.
 - a. Region 2 – approximately 11 GMUs
 - b. Region 3 – approximately 16 GMUs
 - c. Region 4 – approximately 14 GMUs
 - d. Region 6 – approximately 8 GMUs
5. In the high priority surveillance units the goal is to detect CWD in a cervid population in a biologically relevant geographic area if it occurs at a 1% prevalence with a 95% confidence interval. This has been successfully done in the Arizona/Utah strip area (primarily the Kaibab Plateau) through the use of a check station.
6. In the medium priority surveillance units the goal is to detect CWD if it occurs at a 1% prevalence with a 95% confidence interval.
7. In low priority surveillance units, the goal is still to collect enough samples to detect CWD if it occurs at a 1% prevalence with a 95% confidence interval. Depending on the

availability of resources, sample collection in low priority surveillance areas may be deemphasized.

8. Tribal areas (Surveillance on tribal lands is by tribal personnel with the assistance of AZGFD when requested).
 - a. Navajo – surveillance is by Navajo tribal personnel with assistance (if requested) by AZGFD
 - b. Hopi Lands – surveillance is by Hopi tribal personnel with assistance (if requested) by AZGFD.
 - c. Coordination with additional tribes occurs on a regular basis.
 - d. Tribal representatives are contacted prior to the sampling season in order to communicate the AZGFD's plans, the value that the AZGFD attributes to tribal populations, and the resources that the AZGFD would be able to provide, if requested .

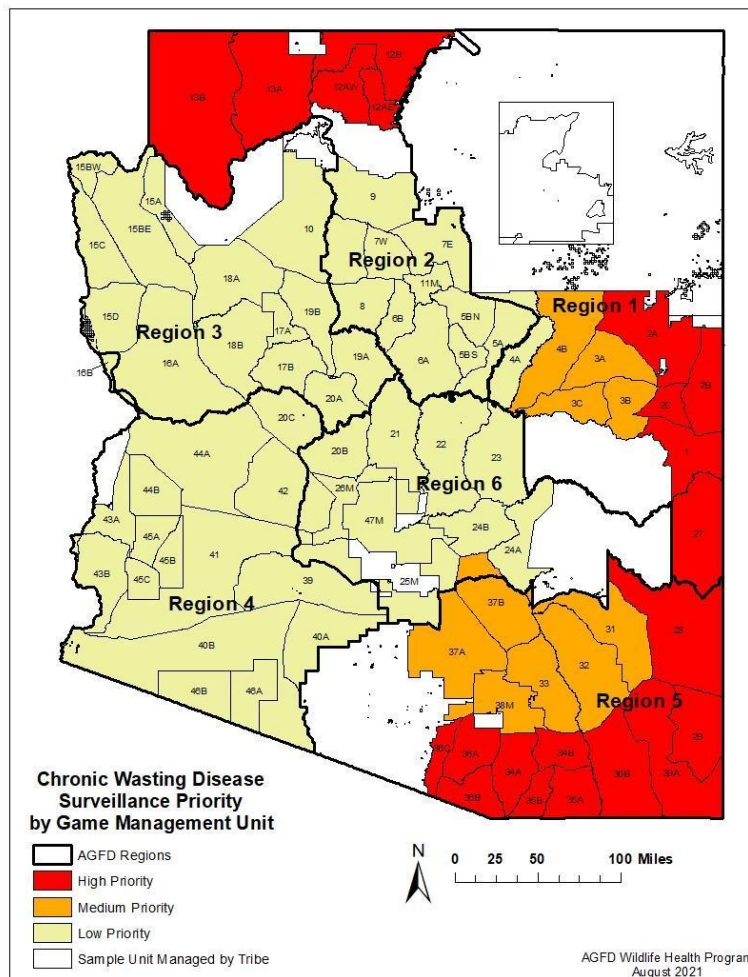


Figure 2: Chronic Wasting Disease surveillance priority categorization for AZGFD Game Management Units

9. Sample collection occurs at hunter check stations, taxidermy businesses, and game meat processors and is performed by AZGFD personnel, trained business employees, and volunteers.
10. The AZGFD purchases the supplies needed to collect samples and provides them to regional offices, cooperating businesses, and hunters.
11. Training is provided to cooperating individuals to ensure persons collecting samples are effective at collection of usable samples and associated information.
12. Diagnostic laboratories are identified and arrangements made for sample submission and reporting of results.
13. Testing facilities are provided with a contact person(s), the Wildlife Health Specialist, who will be contacted in the event of a positive test result.
14. Additional contacts are provided in the event the Wildlife Health Specialist is unavailable.
15. Contact information is provided in the CWD Communication Protocol (Appendix A).
16. In the event of a CWD-positive test, the hunter that harvested the animal will be notified by phone.

Surveillance in captive cervids

A.A.C. R12-4-430 establishes that all persons who hold captive cervids under a private game farm, zoo, or wildlife holding license will have any cervid over one year of age that dies be sampled by a licensed veterinarian or a member of the AZGFD. The sample should be submitted by the cervid owner to a laboratory certified by USDA Animal Plant and Health Inspection Service (APHIS) to perform CWD testing. The cervid owner is responsible for paying for the testing. The AZGFD is to receive a copy of the test results from the diagnostic laboratory. This rule applies to animals that are slaughtered as well as those that are euthanized or die naturally.

Targeted surveillance

Targeted surveillance focuses on the collection of samples from deer and elk that have clinical signs consistent with CWD as well as road-killed animals. Successful targeted surveillance is dependent upon a field force that has been trained to recognize the clinical signs associated with CWD.

1. A training protocol has been established for all field personnel who have the opportunity to observe cervids either in a free-ranging or captive setting.
2. Training sessions will be provided by the Wildlife Health Program staff annually prior to the surveillance season.
 - a. Individuals new to the sampling process and anyone needing a refresher are expected to attend.
 - b. Training materials may be found on the U drive under H:\UDrive\Wildlife Health\CWD management\Sampling and on the AZGFD internal Google Drive.
3. A.R.S. 17-250 allows AZGFD personnel to euthanize animals displaying symptoms consistent with a contagious disease. Wildlife Managers will be encouraged to euthanize, necropsy, and sample cervids displaying signs consistent with CWD infection.

RESPONSE

The objectives for the AZGFD response to identification of a CWD-positive animal in Arizona are to:

- Inform AZGFD personnel;
- Inform state, tribal, and federal wildlife and land management agencies;
- Inform the public;
- Geographically contain the disease and if possible reduce the prevalence;
- Continue surveillance in order to detect the spread of the disease to new regions of the state.

Some elements of the response will be dependent upon whether CWD is detected in free-ranging or captive cervids and the time of year in which the detection occurs. Human dimension research has determined that hunters and the public are more supportive of agency actions including lethal removal of deer when the agency is a trusted source of information, and there are perceived risks to cervid or human health (Harper et al. 2015).

Communication

A communication protocol is provided (Appendix A). The protocol provides contact information for key agency personnel, the Arizona Game and Fish Commission (Commission), State government, and additional partners and also contains the location of press releases, and other public information documents relating to CWD.

1. The CWD Communication Protocol will be annually prior to the fall hunts by Wildlife Health Program personnel.
2. The communication materials (press releases, public information pieces, print, and audio/visual material) will be reviewed and revised as needed. A sample press release is provided in Appendix B.
3. Briefly, the process is:
 - a. Notifications should proceed through the identified chain of command within the Department. Department notifications should be completed prior to contacting external government agencies or stakeholders.
 - b. Notify the AZGFD Director, Deputy Director, Wildlife Management Division Assistant Director, Field Operations Assistant Director, Veterinarian (if not already involved), Terrestrial Wildlife Branch Chief, all Regional Supervisors, Big Game Program Supervisor, and remaining Executive Staff that CWD has been detected in a cervid originating from Arizona.
 - c. Notify the AZGFD Commission that CWD has been detected in the state.
 - d. Notify the Governor's office that CWD has been detected in the state.
 - e. Notify the Arizona State Veterinarian and Associate Director of the Animal Services Division; USDA Area Veterinarian in Charge; Arizona Department of Health Services (Food Safety team, PIO); State veterinarians, State wildlife agency Directors, and wildlife health specialists of neighboring states; and Arizona Native American tribal veterinarians or game and fish personnel and tribal leaders.
 - f. Notify the CWD Alliance of the change in status for the state.
 - g. At this point, the response will vary with the origin of the animal (i.e., free-ranging vs. captive) in which CWD was detected.

- h. The public will be informed by the media based on information provided by AZGFD public information officers (PIO). The following will be available to address information requests and to revise the press release in the event a CWD-positive animal is found:
 - i. Current background documents. The location of the documents will be included in the communication plan. Both hard and soft copies will be available.
 - ii. A draft press release that can be updated with specific information should the detection of a CWD-positive animal occur. Key points will be identified for specific audiences and stakeholders.
 - iii. The AZGFD Public Affairs Branch will include AZGFD social media platforms in the distribution of the announcement.
 - iv. An agency spokesperson(s) knowledgeable in issues related to CWD such as the AZGFD Veterinarian or Wildlife Health staff.

CWD detected in a free-ranging cervids - Background

CWD has been found in free-ranging or farmed cervids in 30 states and four Canadian provinces, Norway, Finland, Sweden, and South Korea. The prevalence in endemic areas ranges from 1% to more than 30% (Rivera et al. 2019). States and provinces have instituted response plans to assess the distribution and prevalence of the disease and to limit the dissemination of the disease. Strategies that have been employed include selective and non-selective culling, removal of animals within the home range of the positive animal, game management unit or county, and region; bans on feeding and baiting; restrictions on carcass movement; changes in the timing of hunts and hunt structure; and mandatory testing of harvested animals. CWD was detected in New Mexico and Utah in 2002 and 2003, respectively. The estimated prevalence rates remain below 2% in Utah. It is likely that CWD prevalence in Arizona would follow a similar pattern because of comparable cervid population densities, terrain, and habitat types.

The response of the public to management actions is dependent upon many factors. Some response strategies will not be effective without successful education and media campaigns. Large scale culling that attempts to reduce the spread of disease by markedly reducing regional cervid density have not been effective or accepted by the public. Use of sharpshooters may also be met with resistance by the public if the communication process is not managed effectively. Outreach materials should clearly identify the long term effects of CWD on deer and elk populations. The objectives of this plan are to limit the establishment and amplification of the disease in cervid populations, reduce the number of CWD infected cervids, and reduce environmental contamination.

There are still gaps in the understanding of the mechanisms that drive transmission of CWD in cervid populations. It is likely that these mechanisms vary with species, habitat, prevalence, and time since introduction. At low prevalence rates, environmental transmission appears to be low and direct transmission between individuals is the main route. The pattern is thought to be a mix of density dependent and frequency dependent transmission and the relative importance of each likely varies seasonally and by gender. The prevalence rate in adult male deer is 3 to 4 times

greater than adult female and mortality from CWD in adult male deer is 2 to 3 times the rate in females (Samuel and Storm 2016). At low prevalence rates, bucks, especially mature bucks, are thought to be more important for dissemination of the disease (Uehlinger et al., 2016). Uehlinger et al. (2016) reviewed the published management methods to date and Potapov et al. (2016) provide an additional analysis.

Strategies for managing CWD in free ranging cervids

Most of the research has found that reducing or eliminating the CWD through harvest structure and hunters alone may be difficult unless a structure can be crafted that will preferentially remove infected animals or limit their dispersion. Sharpshooters may be better at meeting the objectives for removal of target animals. One aspect of the disease which has not been included in the modeling is the influence of genetics on susceptibility, the course of the disease in the individual animal, and the dynamics of the disease within a population. Cervids that are genetically resistant to CWD infection have prolonged incubation periods and live longer once they are symptomatic (Sigurdson, 2008). It is possible that the proportion of animals in a population with genetic resistance could alter the response of the population to management strategies. Most of the management research and modeling has been done using white-tailed deer east of the Mississippi and not mule deer or elk. While such research represents a starting place for management of CWD in an Arizona cervid population, it is essential that adaptive management methods be incorporated into the objectives of the response plan. Recently, Conner et al. (2021) found that certain harvest strategies could sustain and even reduce prevalence in mule deer populations. The response plan has been divided into an immediate response and long term management.

States that have recently detected CWD have reported a 300% increase in sample collection, establishment of check stations, a three fold increase in seasonal technicians for sample collection and processing, and additional personnel time spent on education and enforcement. While it is difficult to know exactly what resources will be needed should CWD be detected in Arizona, the AZGFD should consider in advance the personnel, financial, and material resources that would be needed for the initial response under a couple of different scenarios (time of year, region, and species e.g.) with the objective of initiating the response as quickly as possible. As the response shifts to long term management, the AZGFD should determine what resources are needed to best accomplish the objectives.

IMMEDIATE RESPONSE TO DETECTION IN FREE-RANGING DEER OR ELK

Upon laboratory confirmation of the detection of CWD in a cervid from Arizona the actions in the Communications protocol will occur:

- Notifications
 - a. AZGFD leadership;
 - b. Governor's office and Arizona Department of Agriculture,
 - i. Arizona Department of Agriculture will contact USDA APHIS Veterinary Services (VS);
 - c. Regional wildlife management agencies;
 - i. Coordinate initial response;

- d. Land management agencies,
 - i. State and Federal land managers will be responsible for contacting lessees.
- Distribution of press releases to media
 - a. All forms of media will be included: traditional and social media
 - b. See draft press releases in appendix
 - c. Key talking points:
 - i. CWD has not been shown to be a health risk for people or livestock but the Centers for Disease Control advise against eating meat from an animal that tests positive for CWD;
 - ii. CWD is a disease of deer and elk that always eventually causes death of the animal and when a small percentage of animals are infected, the effects on the population are minimal, however, when larger numbers of animals are infected, the population can be negatively affected.
 - iii. AZGFD response is based on research conducted across the U.S. and in coordination with regional and national fish and wildlife agencies;
 - iv. AZGFD response has specific goals to limit the amount of disease in the state and to preserve hunting and wildlife viewing opportunities.
- Initial management action
 - a. Determine location for animal in which CWD was detected through:
 - i. Contact with the hunter and/or
 - ii. Contact Regional Supervisor, Regional Terrestrial Wildlife Program Manager and Regional Game Specialist
 - b. CWD response zones will be established in which management actions will occur
 - i. Initial Response Area (IRA) - an area described by natural boundaries, roads, GMU boundaries that encompasses a 10-mile radius from the location of the initial detection. Within the IRA, AZGFD may do the following under an emergency authorization allowed under A.R.S. §17-250
 - 1. Require CWD testing of all hunter-harvested and salvaged road-killed cervids
 - 2. Lethal removal of a select number of cervids
 - 3. From within the IRA only the following will be allowed to be transported outside the boundaries: boneless meat, quarters or other portions of meat with no part of the spinal column, clean hides, teeth, clean skull caps and heads as needed for proof of legality. All heads containing brain or lymph node tissue will be required to be disposed of in a landfill or AZGFD designated disposal site upon arrival at the final processing destination.
 - ii. A CWD Management zone shall be established by the Wildlife Health Program, and Regional biologists using the following criteria:
 - 1. Species in which CWD is detected, estimated prevalence, population distribution and size
 - 2. Natural and manmade barriers as well as GMU boundaries
 - 3. Habitat conditions
 - 4. Locations of developed wildlife waters

5. Management actions to limit or reduce the prevalence of CWD will occur within the CWD Management zone
- c. If the detection occurs during an open season for deer or elk in the GMUs within the IRA or CWD Management Zone, the AZGFD may implement the following:
 - i. Regional personnel to be tasked with aiding in response.
 - ii. Hiring of temporary personnel to cover increased workload.
 - iii. Samples will be submitted weekly and hunters will be notified of results by email or text message.
- d. If the detection occurs during an open season for deer or elk in the GMUs within the IRA or CWD Management Zone, the Commission and AZGFD may implement the following through Commission order or emergency rulemaking:
 - i. Require cervids to be field dressed (quartered and/or remove all organs) and leave gut pile in the GMU or have carcasses transported directly to a meat processor or taxidermist while maintaining evidence of legality.
 - ii. Require gut piles and other inedible or otherwise wanted parts to be deposited in dumpsters or other designated disposal sites.
- e. If detection does not occur while hunts are ongoing in the affected unit, a select number of deer and elk of both sexes will be removed from the IRA. The target sample size will be determined by biologists and will be based on knowledge of the population size, movement patterns, and season. Expanding the sampling effort beyond the affected GMU or IRA will be evaluated on a case by case basis.
 - i. Objective is to sample as many cervids deemed necessary to determine distribution of infected animals.
 - ii. This objective shall be accomplished as soon as possible after detection. The Director has the authority under A.R.S. §17-250 to authorize removal of animals in response to a disease event.
 - iii. AZGFD or USDA-APHIS-WS personnel will be used.
 - iv. If it can be accomplished within the desired timeframe, the Department may establish a population management hunt.
 - v. AZGFD will consider adding an emergency hunt to reduce the density of cervids in the affected GMU, especially if an alternative management unit is involved. Expanding this removal to neighboring GMU's will be evaluated on a case by case basis.
 - vi. In addition to testing for CWD, the removed cervids, along with the index case, will be evaluated for genetic susceptibility to CWD and for relatedness.

LONG-TERM MANAGEMENT

Some of these processes will occur concurrently with the immediate response. These processes will address the management objectives of limiting the spread of CWD and reducing the prevalence of, and if possible eliminating CWD in the affected area. Also incorporated in this section is a long-term monitoring program.

1. Resource needs for long term management of CWD will need to be assessed as details regarding the detection are identified (location, species, prevalence rate). Resources that may be needed are:
 - a. A regional Wildlife Health biologist;
 - b. Increased supplies and resources for collecting and testing samples;
 - c. Seasonal interns or technicians surveillance;
 - d. Development of sample drop locations or check stations;
 - e. Carcass disposal dumpsters.
2. Adjustments to population management objectives and hunt structure, most likely staying within current objectives and managing to the lower limits of those objectives:
 - a. Reduce the buck/doe or bull/cow ratio of the unit through increased harvest of antlered animals;
 - b. Addition of a post-rut or late season hunt;
 - c. Manage deer and elk density to reduce transmission.
3. Continue to monitor prevalence by strategic testing of harvested animals:
 - a. Consider mandatory check out, or
 - b. Implement voluntary check out at a local check station.
4. Adaptive management process:
 - a. Response to management actions will be evaluated over five years or more.
 - b. Evaluate trends in overall prevalence as well as by demographic category in relation to demographic and population trends at least every two years.
 - c. Evaluate implementation of alternate surveillance strategies for endemic areas and areas where CWD has not been detected (rotating mandatory testing or established check stations e. g).
 - d. Additional actions to consider if prevalence continues to increase:
 - i. Additional adjustments to harvest ratios.
 - ii. Emergency management hunts.
 - iii. Implementation of sharpshooting strategies.
 - iv. Antlerless harvests.
 - v. Preferentially harvest of younger or older antlered animals.
5. Within the IRA, and the CWD Management zone, the AZGFD may implement the following under an emergency authorization under A.R.S. §17-250
 - a. Lethal removal of a select number of cervids.
 - b. Require CWD testing of all hunter-harvested and salvaged road-killed cervids.
 - c. Manage spread of CWD contamination through carcass movement and disposal.
 - i. From within the IRA only the following will be allowed to be transported outside the boundaries: boneless meat, quarters or other portions of meat with no part of the spinal column, clean hides, teeth, clean skull caps and heads as needed for proof of legality.
 - ii. Allow transportation of potentially infectious material directly to a taxidermist or processor followed by disposal in a landfill.
 - iii. All heads containing brain or lymph node tissue will be required to be disposed of in a landfill or AZGFD designated disposal site upon arrival at the final processing destination.

- iv. Use of dumpsters for disposal of infectious material should be evaluated (such as an “adopt a dumpster” program).
 - v. Alternatively, carcasses could be stored in refrigerated trailers and released when the CWD results are available. CWD test results are generally available a week after submission. Hunters requesting storage of their harvested animal would be charged a fee. Fees will be calculated so that they will be reasonable, consistent with the fees charged by processors for storage, and to provide for the cost of the trailer.
 - vi. Complete restriction of carcass movement by rule may affect hunter participation and such an action should take into consideration the socio-political impact. Enforcement of such restrictions will likely be logistically difficult. Voluntary participation in a program to limit carcass movement would likely have adequate support and participation.
6. Prohibit feeding of all cervids statewide

CWD detected in captive or farmed cervids

CWD has been detected in free-ranging or farmed cervids in 30 states and four Canadian provinces, Norway, Finland, Sweden, and South Korea. In some cases, the source has been identified as a captive cervid facility and in other cases the source of infection remains uncertain. Reports given at the 3rd International CWD Symposium (2009) demonstrated that a double woven wire fence eight feet high was effective at eliminating contact between farmed and free-ranging deer and elk. A woven wire fence combined with an electric fence was also effective. Many farmed cervid facilities do not have effective fencing and both escapes and contact between farmed and free-ranging animals occur regularly. The goals of the response to disease detection in a captive cervid herd in Arizona will be to prevent the spread into free-ranging cervids and identify the source of the infection. The following actions will be directed at accomplishing these goals:

- 1. The Director of the AZGFD in coordination with the State Veterinarian will quarantine the game farm or other facility pursuant to A.R.S. §17-250 and A.A.C. R12-409-M.
- 2. The AZGFD will coordinate with the Commission, Governor, and USDA-APHIS-VS Area Veterinarian in Charge as needed.
- 3. The origin of all of the animals brought into the facility for the past 10 years will be determined if possible.
- 4. Trace-forward all of the animals shipped from the facility in the past five years if possible.
- 5. All recipients of animals shipped from the facility will be notified that they have received animals from a facility where CWD has been detected. This process should include notification of the head of the wildlife management agency and the state veterinarian in the state or province where the animal was shipped.
- 6. A.R.S. 17-250 and A.A.C. R12-409-M allow the Director to require the following:
 - a. Testing of all cervids on the premise.
 - b. Requiring all cervids to remain on the premises or to move directly to slaughter.
- 7. A rule change is advised for A.A.C. R12-4-430 section F clarifying that the records must be kept for five years after the disposition of an animal.

CARCASS MANAGEMENT AFTER DETECTION

CWD prions are found throughout the infected animal with the highest concentrations occurring in the CNS, and lymphatic tissues. Prions remain infectious for a prolonged period (years) and can survive passage through the intestinal tract of some birds and mammals (Miller et al 2004, Nichols et al. 2015, VerCauteren et al. 2012). Prions may be taken up by plants and deposited in the above ground portions making them available for consumption by deer and elk (Pritzkow et al. 2015). Prions have been found in the surface water and soil in CWD endemic areas (Nichols et al. 2009). Therefore, disposal of infected carcasses in a manner that limits the spread of the prions, reduces the concentration of prions in the environment, and removes the tissues from consumption by scavengers is an important part of reducing the impact of CWD on deer and elk populations (Miller et al. 2004). Additionally, because the CDC advises against consuming CWD positive animals, meat processors should take steps to prevent contamination of processing equipment. The AZGFD should publicize a list of taxidermists and meat processors to reduce the potential of transportation of potentially infected carcasses or parts.

Disposal of infected material

1. Deer and elk killed by vehicles within the CWD management zone whenever possible should be tested for CWD and then taken to a landfill.
2. Meat and carcasses from CWD-positive animals shall be destroyed by incineration or deposited in an official landfill.
3. Licensed taxidermists and meat processors are required under Arizona Department of Agriculture Rules to dispose of processing waste by transporting it to a landfill regulated by the Arizona Department of Environmental Quality or equivalent (R3-2-206).
4. When a hunter is notified that CWD has been detected in a harvested deer or elk, the hunter will be advised of proper disposal methods.

Game Meat Processors

1. Game meat processors should process carcasses from the CWD management zone and those that have tested positive for CWD at the end of the day.
2. Game meat processors should not mix meat from multiple carcasses in ground meat products.
3. Game meat processors will be provided with recommendations for post-processing disinfection (Appendix E).
4. Game meat processors should minimize handling of higher risk tissues (brain, spinal cord, lymphatic tissues) and especially avoid cutting through the spine and exposing the spinal cord. Boneless processing is recommended.

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Appendix A: Communication Protocol

CWD Communication Goals

1. Provide information to the AZGFD Executive Staff, the AZGFD Commissioners, and the Governor regarding the detection of CWD and the planned response.
2. Provide information to allied state, federal, and tribal agencies regarding the detection of CWD and the planned response
3. Disseminate agency messages through the news media, AZGFD e-newsletters, websites, social media and other platforms to the public to:
 - a. Help the public understand agency actions.
 - b. Reduce concerns by the public in regards to health and safety.
 - c. Provide specific information to hunters on actions they can take to limit the spread of the disease, and assist the agency in assessing the scope and severity of the outbreak.
4. Educate and enlist support of significant constituent groups for agency actions.

Messages (briefly)

1. It is the AZGFD's responsibility to manage wildlife for the benefit of *all* Arizonans.
2. The AZGFD's actions are necessary for the long-term protection of wildlife.
3. The AZGFD's actions in relation to CWD factor in the long-term health of rural economies dependent upon wildlife resources.
4. CWD is an always fatal disease of deer and elk and has the potential to significantly impact deer and elk populations in Arizona and affect the economy of the state through the negative impact to hunting and associated tourism dollars.
 - a. Infection occurs through direct contact with an infected animal or a contaminated environment
 - b. The infectious agent, a prion, can be found in urine, feces, and tissues from an infected animal
 - c. Infected animals appear normal until late in the course of the infection
 - d. Infected animals may spread the disease for months before dying from the infection
 - e. Fawns and calves from infected does and cows are less likely to survive
5. CWD is not considered to be a health risk to people. For more information refer to the CDC website: <https://www.cdc.gov/prions/cwd/index.html>

Additional notes:

The CWD Alliance website (<http://www.cwd-info.org/index.php/fuseaction/about.faq>) can be used to provide additional briefing information for PIOs. In CWD communication, we will emphasize: 1) the seriousness of the CWD threat, and 2) our expertise and credentials in wildlife management and CWD. Websites for additional information and CWD sample collection should be made available via eNews, and social media releases.

Spokespersons

Primary contacts	Regions	News release review (Required approval chain)
WM AD 623-236-7666 WMTW Branch Chief 623-236-7247 Big Game Program Supervisor 623-236-7355 AZGFD Veterinarian 623-236-7351	Regional PIOs RSs as backup WMTW program managers	1. WMTW Branch Chief 2. WM AD 3. IEPA Branch Chief 4. IERD AD 5. FO AD 6. Deputy Director 7. Department designated PA Commissioners

COMMUNICATION DURING SURVEILLANCE

1. AZGFD Commission and Department personnel

Activity	When	Process Owner	Status/Notes
CWD training for all staff.	Ongoing	Wildlife Health	<u>Ongoing</u> : All AZGFD receive background information in NEO; field staff receive training as needed
Inform personnel by e-mail of developments.	Ongoing	Wildlife Health	<u>Ongoing</u>

2. Hunters

Activity	When	Process Owner	Status/Notes
Place CWD information on tags or portal	Ongoing and annually	IEPA Chief (for development) ITBranch	<u>Ongoing</u>
Send CWD info/update to e-news subscribers and social media	Upon plan adoption with semiannual updates	IEPA Branch Chief, Phoenix PIO	<u>In Process</u>
Update CWD info being presented at hunter ed classes	Ongoing	IER3 Branch Chief, Wildlife Health Program	<u>Completed</u>
CWD page on AZGFD website	Ongoing	IEMK Chief / Webmaster / Wildlife Health Program	<u>Ongoing</u>
Workshops	Annually just prior to seasons	Wildlife Health Program	<u>Ongoing</u>
Provide check station locations	Annually just prior to seasons	Wildlife Health Program	<u>Ongoing</u>

3. News media, and general public

Activity	When	Process Owner	Status/Notes
Provide periodic press releases on surveillance activities	Ongoing	Phoenix PIO	<u>Ongoing</u> : review annually
Information to media re: fawns and calves	As needed	Phoenix and Regional PIO/FOD	<u>Ongoing</u> : review annually

COMMUNICATION IN RESPONSE TO DETECTION

1. AZGFD Department and Commission

Activity	When	Process Owner	Status/Notes
Notify the Director/E-Staff/Leadership Team	Immediately	Wildlife Health Specialist/WMTW Branch Chief	
Media practice session for key spokespeople.	Upon discovery	IEPA Chief	If deemed necessary.
Inform Commission of response activities & developments.	Immediately and as warranted	WMD AD	
Inform AZGFD employees of response activities & developments.	Immediately and as warranted	Wildlife Health	

2. Public: Government partners

Activity	When	Process Owner	Notes
Notify the Governor's office	Immediately	Director	
Notify state, tribal, and federal agency partners	Immediately	Director/Wildlife Health/WMTW Branch Chief	Includes: State Veterinarian, Department of Health Services, State Wildlife Agencies, tribes, USDA-APHIS-WS, and USDA-APHIS-VS-AVIC.
Notify non-governmental partners and associations.	Immediately	DOHQ/Wildlife Health/ WMTW Branch Chief	This group includes CWD Alliance, AFWA, WAFWA, RMEF, ADA etc.

3. Traditional News and Social Media

Activity	When	Process Owner
Release video clips and stills prepared for media post-discovery.	Immediately and as warranted	IEPA Chief
Release prepared Press releases	As warranted	IEPA Chief

4. Public: Hunters

Activity	When	Process Owner	Status/Notes
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Report on agency activities/findings to e-news and social media subscribers.	Immediately and periodically thereafter as warranted	IEPA Chief, PIO, IEMK	Wildlife Health Specialist, Game Branch, RS, Terrestrial Specs, and Phoenix and regional PIO will also be involved.
Conduct outreach events to hunters, and associations on hunter roles and responsibilities	Immediately and periodically thereafter as warranted	Wildlife Health Program	
Send agency activities/info to hunter ed instructors.	As warranted	IER3 Chief	
Regular updates of CWD page on AZGFD website.	Yearly or as warranted	Wildlife Health, Webmaster, IEMK	

Appendix B: Sample Media Release

High priority information

- Arizona's first case of Chronic Wasting Disease (CWD) was identified on **BLANK** when results were received from a test of tissues from a **(hunter harvested, roadkill, sick/injured) (mule deer, white-tailed deer, elk)** in Game Management Unit **BLANK**, in Region **BLANK**. The sample was tested at **LAB** using enzyme-linked immunosorbent assay (ELISA) and the positive test was confirmed by immunohistochemistry (IHC).
- CWD, which is always fatal in cervids (deer, elk, moose, caribou) and there is no cure.
- It takes months of infection before animals with CWD show signs of infection. Many animals with CWD appear normal until late in the course of the disease.
- CWD can spread amongst cervids directly by contact with one another, or indirectly by contacting infected urine, feces, or nervous system tissues.
- Over time, CWD can severely reduce cervid populations.
- To date, there are no confirmed cases of CWD transmission from wildlife to domestic animals or from cervids to other wild ungulate species, such as bighorn sheep or pronghorn.
- Currently, there is no scientific evidence of CWD being transmitted from cervids to humans, the [United States Centers for Disease Control and Prevention](#) recommends against consuming meat from an animal that has tested positive for CWD.
- Although CWD is not known to affect humans, hunters who harvest mule deer, white-tailed deer, or elk in the affected area (**INITIAL RESPONSE AREA**), or anyone who salvages a road-killed animal the AZGFD advises hunters to:
 - Avoid harvesting any animal that appears sick or is behaving abnormally, but report location and other relevant information to the AZGFD 24hr communications center 623-236-7201.

- Wear disposable gloves and/or apron while field dressing wild game.
- Thoroughly wash hands and equipment after processing carcasses.
- Knives, field dressing, and meat processing equipment should be cleaned first of any tissue and then disinfected by soaking in 40% household bleach solution (4 parts bleach mixed with 6 parts water) for a minimum of 5 minutes, and rinsed with water thoroughly after soaking.
- Avoid consuming parts of your harvest where the CWD prion accumulates including brain, spinal cord, eyes, spleen, pancreas, tonsils, and lymph nodes.
- Avoid cutting through bone, brain, and spinal cord.
- AZGFD staff are collecting tissue samples from many deer and elk within the affected area (**INITIAL RESPONSE AREA**), which is an area that is approximately **314 square miles (10-mile radius centered on the positive case)** and continues to collect samples from hunter-harvested deer and elk to help determine prevalence and distribution of the disease.
- If additional diseased animals are discovered, AZGFD may elect to reduce the affected population to limit the spread, possibly using special hunts, AZGFD-led reductions, and require mandatory check of harvested deer and elk

Medium priority or second release

- AZGFD is collaborating with landowners, land management agencies, state and local governments, tribal co-managers, and sportsmen and conservation groups in the affected area to respond to this disease event.
- Residents/landowners within the **IRA** have been notified and asked to be alert to other symptomatic animals and report them to AZGFD by calling 623-236-7201.
- AZGFD has defined a **CWD Management Zone (CWD MZ)** to minimize the potential for geographic spread of CWD. The CWD MZ surrounds the IRA and allows reasonable

access to meat processors and taxidermists, and to ensure appropriate sanitary disposal of carcass parts is possible.

- Hunters who harvest mule deer, white-tailed deer, or elk within the IRA will be required to dispose of the remains in an AZGFD-approved landfill or via other AZGFD-approved means within the defined CWD MZ to reduce the risk of spreading CWD to other areas.
- From within the IRA only the following will be allowed to be transported outside the boundaries: boneless meat, quarters or other portions of meat with no part of the spinal column, clean hides, teeth, clean skull caps and heads as needed for proof of legality. All heads containing brain or lymph node tissue will be required to be disposed of in a landfill or AZGFD designated disposal site upon arrival at the final processing destination.
- CWD is a form of transmissible spongiform encephalopathy (TSE), which are infectious diseases characterized by deterioration of brain tissue. TSE's are caused by malformed proteins called prions. Other TSEs include scrapie in domestic sheep and goats, bovine spongiform encephalopathy (BSE) in cattle (i.e. mad cow disease), and Creutzfeldt-Jakob disease (CJD) found in humans.
- Although CWD is not known to transfer from wild cervids to domestic livestock, the AZGFD is working to share disease information and updates with the Arizona Department of Agriculture, local livestock producer associations, and individual producers.
- AZGFD has been looking for evidence of the disease in Arizona since 1998; CWD has been documented in wild or captive cervids in 30 states and 4 Canadian provinces, and was first documented in Colorado in 1967.
- Managing CWD has proven difficult due to various obstacles such as lack of a vaccine or treatment for infected animals. CWD also has a long incubation period and

asymptomatic animals can shed infectious materials. CWD is extremely persistent and can remain infectious in the environment for many years. While challenging, other wildlife agencies continue to take steps to prevent or minimize the spread of the disease, and AZGFD is committed to doing the same.

Appendix C: Rule changes, directives, and emergency orders

Preventative

A.A.C. R12-4-112

- Consider amending rule to require that meat from animal testing positive to CWD will be condemned and disposed of by incineration or in a landfill where the material will be isolated by soil containing 8-25% clay particles or by another accepted method.
- Language could be included for cost recovery.
- Alternatively, this amendment could be made to A.A.C. R12-4-305.

A.A.C. R12-4-430

- Amend the rule to require that records be kept for 5 years after disposition (death, transfer) of a captive cervid.
- Amend the rule to require enclosures to consist of at least double 8 foot woven wire fences or a combination of an 8 foot woven wire fence and an electric fence to prevent nose to nose contact between captive and wild cervids.

A.A.C. R12-4-413

- Amend the rule to require that records be kept for 5 years after the disposition of an animal.

Detection

A.R.S. 17-250

- Allows AZGFD personnel to harvest animals displaying symptoms consistent with a contagious disease. An order from the director regarding the removal of cervids with signs consistent with CWD would reaffirm this policy and positively impact targeted surveillance.

Response

All response actions would be emergency orders allowed under A.R.S. §17-250 and would be enacted only when the corresponding rule change had not been enacted.

A.A.C. R12-4-305--Amend to include:

- Amend rule to prohibit the transport of cervid carcasses out of a CWD positive GMU with the entrails, brain, and/or spinal cord intact. Only boneless meat, quarters or other portions of meat with no part of the spinal column, clean hides, teeth, clean skull caps and heads as needed for proof of legality. All heads containing brain or lymph node tissue will be required to be disposed of in a landfill or AZGFD designated disposal site upon arrival at the final processing destination.

Free-ranging cervids

- Require the following:

- Potentially infectious material from animals harvested in known CWD-positive GMU will remain in that unit by requiring that such animals be field dressed, quartered and boned-out at the location of harvest with all remains left on-site.
- Alternatively, carcasses could be stored in refrigerated trailers and released when the CWD results are available.
- Meat and carcasses from CWD-positive animals will be destroyed by incineration.
- Alternatively, where an incineration facility is not available, a landfill which can handle CWD-positive material by isolating it by placing a layer of 8-25% clay soil above and below the material could be used.
- Prohibit feeding of wildlife in CWD management zone.

Farmed cervids

- The Director of the AZGFD in coordination with the State Veterinarian will quarantine the game farm or other facility.
- The holder of the game farm or zoo license will be required to provide the following records:
 - The origin of all of the animals brought into the facility for the past 10 years.
 - The destination of all of the animals shipped from the facility in the past 5 years.
- The holder of the game farm or zoo license will notify all recipients of animals shipped from the facility that they have received animals from a facility where CWD has been detected. This process should include notification of the wildlife management agency and the state veterinarian in the state or province where the animal has been shipped.
- Require testing of all cervids on the premise.
- Require all cervids to remain on the premises or to move directly to slaughter.

Appendix D: Annual CWD Surveillance Calendar

APRIL-MAY

- Inventory and order supplies

JUNE

- Assemble CWD sampling kits
- Review deer and elk hunt publications and determine timetable for sampling
- Coordinate with regions on check station timing
- Set dates for regional training, if necessary

JULY

- Determine staffing and supply needs for sampling season
- Begin regional training, as necessary
- Distribute CWD sampling kits
- Send out business participation letters
- Revise CWD database to reflect current year hunts

AUGUST

- Send sampling kits to businesses
- Contact student groups to discuss volunteer program
- Send out notices to hunters for voluntary sampling at check stations
- Conduct regional training, as necessary
- Conduct volunteer training, as necessary

SEPTEMBER - OCTOBER

- Begin sampling season
- Make additional sampling kits, deliver to regions
- Begin picking up samples from businesses and regions
- Enter samples into database
- Review database for errors
- Resupply businesses, as necessary

OCTOBER - DECEMBER

- Operate Kaibab check station
- Pick up samples from businesses
- Enter samples into database
- Review database for errors
- Resupply businesses, as necessary

JANUARY

- Review CWD database for errors
- Contact Navajo Nation Big Game Program regarding samples

FEBRUARY

- Wrap up sampling season
- Review CWD database for errors; query data for report
- Draft annual report

MARCH

- Finish CWD Annual Report, send report to regions and businesses, post on website

Appendix E: Cleaning and Disinfection Recommendations for Taxidermists and Game Meat Processors

From Biosafety in Microbiological and Biomedical Laboratories:

Inactivation of Prions: Prions are characterized by resistance to conventional inactivation procedures including irradiation, boiling, dry heat, and chemicals (formalin, betapropiolactone, alcohols). Current recommendations for inactivation of prions on instruments and other materials are based on the use of sodium hypochlorite, NaOH, and the moist heat of autoclaving with combinations of heat and chemical being most effective. The FDA has not approved any product for decontaminating, disinfecting, or sterilizing equipment, or surfaces contaminated with prions.

Recommended disinfection protocols:

Surfaces or heat-sensitive instruments can be treated with 2N NaOH or sodium hypochlorite (20,000 ppm) for 1 hour. Ensure surfaces remain wet for entire period, then rinse well with water. Before chemical treatment, it is strongly recommended that gross contamination of surfaces be reduced because the presence of excess organic material will reduce the strength of either NaOH or sodium hypochlorite solutions.

Working Solutions:

- 1 N NaOH equals 40 grams of NaOH per liter of water. Solution should be prepared daily. A stock solution of 10 N NaOH can be prepared and fresh 1:10 dilutions (1 part 10 N NaOH plus 9 parts water) used daily.
- 20,000 ppm sodium hypochlorite equals a 2% solution. Most commercial household bleach contains 5.25% sodium hypochlorite, therefore, make a 1:2.5 dilution (1 part 5.25% bleach plus 1.5 parts water) to produce a 20,000 ppm solution. This ratio can also be stated as two parts 5.25% bleach to three parts water. Working solutions should be prepared daily.
- Instruments and surfaces should be kept wet for at least 5 minutes before rinsing.
- CAUTION: Above solutions are corrosive and require suitable personal protective equipment and proper secondary containment. These strong corrosive solutions require careful disposal in accordance with local regulations.
- CAUTION: Generally, NaOH does not corrode stainless steel. However, some formulations of stainless steel can be damaged (including some used for surgical instruments). It is advisable to test a sample or consult with the manufacturer before dedicating a large number of instruments to decontamination procedures. NaOH is known to be corrosive to glass and aluminum. Hypochlorite does not corrode glass or aluminum and has also been shown to be an effective sterilizing agent; it is, however, corrosive both to stainless steel and to autoclaves and cannot be used as an instrument bath in the autoclave. If hypochlorite is used to clean or soak an instrument, it must be completely rinsed from the surfaces before autoclaving.

Animal carcasses can be disposed of by incineration with a minimum secondary temperature of 1000°C (1832°F) or alkaline hydrolysis using a pressurized vessel that exposes the carcass or

tissues to 1 N NaOH or KOH heated to 150°C for xxx time (Taylor and Woodgate 2003, Richmond et al. 2003).

References

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Appendix F: Projected Budget and Staff Needed for Response

Upon detection of CWD in Arizona, the Department should assess and prioritize various resources needed for response and surveillance. Recommendations for staffing and supplies are suggested below.

Immediate response needs

- Staffing
 - If not during a hunt, 3 to 5 individuals for 2 weeks to lethally remove animals (deer and elk) found within 10 miles of the detection (within the Initial Response Area (IRA)) in order to determine prevalence and geographic distribution.
 - One full-time seasonal technician to assist with sample collection and submission of harvested and roadkill animals within the IRA and to post signs.
 - Additional time spent on enforcement of carcass movement rules, sample collection, and education by Wildlife Managers and Terrestrial Biologists.
- Supplies
 - Supplies for collecting an additional 50 to 200 samples in IRA and CWD management zone (CWD MZ).
 - Signs to inform hunters of boundaries and rules for IRA and CWD MZ
 - Dumpsters for disposal of carcass parts (possibly)
 - Freezers for head and sample collection stations

Long-term response and management

- Staffing
 - Regional Wildlife Health Program staff person either on a seasonal or fulltime basis.
 - Personnel to process an additional 750 samples on an annual basis during fall hunts in order to continue assessing prevalence and distribution.
 - Additional time spent on enforcement of carcass restrictions.
 - Personnel for check stations.
- Supplies
 - Fees for dumpster maintenance.
 - Supplies for sample collection.