

ARIZONA GAME AND FISH DEPARTMENT

**Chronic Wasting Disease Prevention, Detection, Response, and Management
Plan**

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Chronic Wasting Disease Prevention, Detection, Response, and Management Plan

INTRODUCTION

Chronic Wasting Disease (CWD) is a fatal neurologic disease affecting deer, elk and moose characterized by progressive weight loss, abnormal behavior, and eventual death. CWD belongs to a group of diseases called transmissible spongiform encephalopathies (TSEs). CWD 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 thought to be caused by abnormal proteins or “prions.” CWD has been detected in 20 states and Canadian provinces as of February 1, 2010.

The Arizona Game and Fish Department (Department) is charged by Title 17 of the Arizona Revised Statutes 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 both captive and free-ranging wildlife are the responsibility of the Arizona Game and Fish Department including those of all wild cervids whether the animals are native, non-native, captive, farmed, or free-ranging.

The Department began conducting CWD surveillance in 1998 and has since collected nearly 15,200 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 2008-9 surveillance year, 1,267 samples were collected from deer and 999 samples were collected from elk for a total of 2,266 samples. Three hundred fifty-eight of the deer samples collected were from the Kaibab check station, 5 from a non-mandatory check station in GMU 27, 431 deer and elk samples were collected by regional personnel, and 1,472 deer and elk samples were acquired through the game meat processor reimbursement program. CWD was not detected in any of the samples. We also sent an additional 11 samples to Colorado State University (CSU) from cervids collected by the Mexican Wolf Crew; no CWD was detected.

The current surveillance program includes an education component for hunters as well as the general public. Information is provided in several Department publications throughout the year and on the website. Hunters that receive a tag on the Kaibab Plateau are provided with information about the availability of voluntary testing through the check station (where checkout is mandatory for GMU12A).

The state of 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 managing issues related to CWD in a way that will optimize disease surveillance, prevent the introduction of the disease, and reduce the impact of disease on the state. Several factors are important in management of CWD including planning, regulating animal and carcass movement, performing surveillance, and responding to disease detection. This plan addresses each of these factors.

MANAGEMENT PLAN GOALS

It is the goal of this plan to provide a logical process to manage issues related to CWD in Arizona based on the current understanding of the epidemiology of the disease. The CWD Response Plan will address all aspects of managing this 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 issues, providing information to the public regarding CWD, and responding to the detection of CWD in free-ranging or captive cervids in a way that reduces the dissemination of the disease and its impact on the state.

PREVENTION

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 route of infection is ingestion. 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., 2009a) and deer (Haley et al., 2009b). In addition, a well-developed and implemented public education program informs hunters of the potential impact of their actions on the introduction of CWD into Arizona. The Department first issued a directive for the handling and possession of live deer fawns and elk calves which requires that orphans be returned to the wild, placed with a licensed zoo or euthanized. This directive was reissued June 1, 2009, and was reviewed and reissued in May 18, 2010.

- a. Amend rules as necessary to prevent the introduction and spread of CWD.
 - i. Arizona Administrative Code (A.A.C.) R12-4-430 was amended to restrict live cervid movement into the state and within the state on May 2, 2002.
 - ii. Amend A.A.C. R12-4-305(I) to include restrictions on the importation of hunter-harvested cervid meat, by-products, and carcasses. The following recommendations were sent to Rules and Risk Section on September 15, 2009:
 1. Only boned-out meat, skulls without remaining tissue, taxidermist-processed mounts, or tanned hides will be allowed to be brought in from another state.
 2. Prohibit the importation of cervids harvested out-of-state into Arizona with the brain, spinal cord, and/or entrails intact except for immediate delivery to a meat processor or taxidermist.
 - iii. Amend A.A.C. R12-4-430 to require that enclosures of captive native cervids in areas where free-ranging cervids are known to occur consist of a double fence design that prevents any possible contact between the free-ranging and captive populations.
 - iv. Consider a rule change placing a ban on the importation of antlers in velvet or harvested velvet from CWD-positive states and any other reasonable restrictions if supported by the best available data. This rule would provide an exemption for taxidermist-processed mounts. CWD

prions have been detected at low levels in antler velvet. Commercial products containing antler velvet are available as nutritional supplements. Contamination of the environment from these products and from mounted trophies is considered highly unlikely.

- v. Consider a rule change placing a ban on the use of deer/elk urine attractants as supported by the best available data. Infectious CWD prions have been found in deer urine through the use of protein amplification and transgenic mouse studies. CWD prions have also been detected in surface water in endemic areas with the same methods. The concentration of CWD prions in urine is very low suggesting that the risk of infection from urine is also low. Research is still determining the factors which influence the epidemiology of this disease and the significance of any single route of transmission remains uncertain.
 - vi. Continue with rulemaking process to prohibit the intentional feeding or baiting of free-ranging wild cervids except by AGFD personnel. The rule would allow the feeding of livestock. Feeding causes animals to concentrate in a focal area and such concentration increases disease transmission. This is even more significant when environmental persistence and contamination are a factor in disease dynamics. Almost all endemic states have passed rules that ban or restrict the feeding of free-ranging cervids.
- b. Dispose of carcasses and tissues appropriately.
- i. Disposal of materials will be according to CWD status (positive or negative) and will be based on current research on the survival of prions in soil and water, and movement through soil, landfill substrates, and ground water. Research presented at the 2009 International Chronic Wasting Disease Symposium as well as published research papers were reviewed. 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.
 - ii. Disposal will follow federal and state regulations regarding such materials and ensure environmental protection and health safety requirements are met.
 - iii. Dispose of carcasses and materials collected during routine CWD sampling appropriately.
 - 1. Currently, Wildlife Health contracts with the City of Phoenix to dispose of carcasses (heads) collected from taxidermists and game meat processors. Disposal methods follow the recommendations for handling animal waste and carcasses.
 - 2. The impact on environmental contamination and the risk of exposure to free ranging cervids of the disposal of a head from a CWD-positive animal at this site is negligible.

- iv. Dispose of positive meat from animals harvested out of state. Currently, the Department is notified by the CWD program managers of other states when a resident of Arizona harvests a CWD positive animal.
 - 1. Hunters that have harvested a CWD positive animal are advised of the current CDC recommendations regarding consumption of meat from a positive animal.
 - 2. Department personnel offer to properly dispose of any unwanted meat.
 - 3. Meat and carcasses from CWD-positive animals are destroyed by incineration.
 - 4. Alternatively, where an incineration facility is not available, a landfill that can handle CWD-positive material by isolating it by placing a layer of clay soil above and below the material could be used.
 - 5. See the response section for the management of CWD-positive meat from animals harvested from within Arizona.
- c. Conduct education and outreach programs.
 - i. Notify hunters of rule changes regarding imported cervid meat, by-products, carcasses, and mounted or otherwise preserved trophies.
 - ii. Contact hunters harvesting CWD-positive cervids in other states when notified by USDA-APHIS and cooperating state agencies, and provide information pertaining to consumption as recommended by the CDC and disposal according to Department recommendation.
 - iii. Provide information on methods of handling game meat that will help prevent zoonotic disease transmission, preserve meat quality, prevent the spread of CWD, and provide for food safety.
 - iv. Conduct human dimension studies to assess the effectiveness of the education program, the impact of CWD on hunter and general public attitudes towards hunting, and the value of the deer and elk herds.

DETECTION

Currently, Wildlife Health obtains funding via a USDA-APHIS-VS grant to sample free-ranging cervids for CWD. This funding supports approximately 50% of the cost of the testing program. The funding has decreased steadily for the past 3 years. In 2008, funding of testing in Tier 3 states, those states that are CWD test negative and do not share a border with a CWD positive state, was eliminated. Hunters from around the country choose to hunt in Arizona because the unusual and outstanding deer and elk populations and because these animals are free of CWD. Continuation of CWD testing and confirmation of the negative status of our herds is important. 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 status for the state and region. The 2009/10 protocol was the same as the one used in previous years:

Hunter-harvested surveillance

Hunter-harvested surveillance entails collection of samples from wildlife killed 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 population estimates and provide for detection of the disease when present at a 1% or greater prevalence rate with a 95% confidence level. Some adjustments have been made to account for hunter harvest rates.

- a. Areas have been established to stratify the collection of samples. Arizona has been divided into six habitat zones known as biomes which represent the various ecosystems found throughout the state: Central Highlands, Colorado River Deserts, Great Basin Deserts, Ponderosa Pine Forest, Sky Islands Sierra Madre and Kaibab Plateau. Areas of special importance include sites in proximity to captive cervids, areas that border states with a positive CWD status, and areas where deer or elk are at particularly high densities. In Arizona, the areas of greatest concern are the North Kaibab Plateau and the eastern portion of the State.
- b. Target collection numbers for each biome were:
 - i. Kaibab Plateau – 300 samples
 - ii. Great Basin Desert – 285 samples over a 5 year period. The population density, distribution, and available tags do not allow collection of the required number of samples in a single season.
 - iii. Ponderosa Pine Forest – 300 samples
 - iv. Central Highlands – 300 samples
 - v. Colorado River Deserts – 300 samples
 - vi. Sky Island – Sierra Madre – 300 samples
- c. Sample collection occurred at hunter check stations, taxidermy businesses, and game meat processors and was done by Department personnel and trained private individuals.
- d. The Department purchased the supplies needed to collect samples and provided them to regional offices and cooperating businesses.
- e. Training was provided to cooperating individuals to ensure persons collecting samples are effective at collection of usable samples and associated information.
- f. Diagnostic laboratories have been identified and arrangements for sample submission and reporting of results have been made.
 - i. Testing facilities have been provided with a contact person(s), the Wildlife Health Specialist, who will be contacted in the event of a positive test result.
 - ii. Additional contacts have been provided in the event the Wildlife Health Specialist is unavailable.
 - iii. Contact information is provided in the CWD Communication Protocol (Appendix A).
- h. Hunters were informed of the CWD status of their harvested animal if tested.
 - i. All CWD-negative results were made available via web-link from AGFD web-site or by postcard mail-outs.
 - ii. In the event of a CWD-positive test, the hunter that harvested the animal will be notified by phone.
- i. For the past 3 years, the Department has met the targeted sample collection numbers for 3 biomes: Kaibab Plateau, Ponderosa Pine Forest, and Central Highlands.
- j. The Department will continue to advocate for funding for disease testing to be provided by USDA-APHIS through the Western Association of Fish and Wildlife

Agencies, Association of Fish and Wildlife Agencies, CWD Alliance, and other forums.

Surveillance in captive cervids

A.A.C. R12-4-430 establishes that all persons who hold captive, native cervids under a private game farm, zoo, or wildlife holding license will submit the head of any cervid that dies for sample removal and testing for CWD. This rule does not apply to animals that are slaughtered. A rule change is needed to allow the heads to be submitted to the Department or an authorized facility or representative instead of the Arizona Veterinary Diagnostic Laboratory in order to reduce the cost to the Department of sample removal. Recent rule review of R12-4-430 also recommended changing the requirement for head submission for testing to animals that are >6 months of age.

Targeted surveillance

Targeted surveillance focuses on the identification of animals that have clinical signs consistent with CWD as well as road-killed animals, the collection of these animals, and the submission of appropriate samples to a laboratory for testing. Successful targeted surveillance is dependent upon a field force that has been trained to recognize the clinical signs associated with CWD.

- a. A training protocol has been established for all field personnel who have opportunity to observe cervids either in a free-ranging or captive setting.
 - i. Training sessions will be provided by the Wildlife Health Program staff each year prior to sampling season. All individuals new to the sampling process or needing a refresher who may be sampling for CWD are expected to attend.
 - ii. The video, “Shedding Light on Chronic Wasting Disease” developed by the Wyoming Game and Fish Department includes footage of infected animals and is directed at hunters.
 - iii. A link to a video of the CWD sample collection process is available on the intranet.
- b. A.R.S. 17-250 allows Department personnel to harvest animals displaying symptoms consistent with a contagious disease. Employees will continue to be encouraged to harvest and test cervids displaying signs consistent with CWD infection.

Surveillance for 2010/11

Samples will be collected from hunter-harvested, targeted, and captive cervids. A greater emphasis will be placed on the collection of samples from animals killed on highways and those displaying symptoms consistent with CWD. The captive cervid surveillance will continue as it has in the past and as required by current rules. The hunter harvested sampling will be changed as follows:

- a. The state will be divided into Risk Management areas. Tentatively those are divided into high, medium and low risk areas (Figure):
 - i. High risk areas:

1. Arizona Strip (Region 2).
2. Navajo/Hopi Lands—surveillance will be by Navajo and Hopi tribal personnel with assistance (if requested) by AGFD.
3. White Mountain Borderland (Region 1) and White Mountain Apache tribal lands, San Carlos Apache tribal lands. Surveillance on tribal lands will be by tribal personnel with the assistance of AGFD if requested.
4. Southern borderland (Region 5).

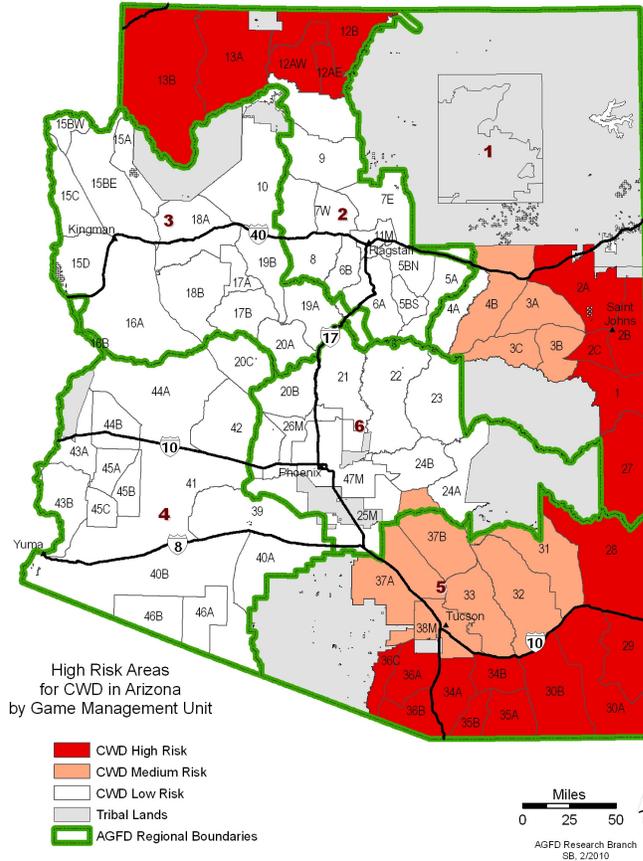


Figure: Map of Arizona CWD risk areas.

- ii. Medium risk areas:
 1. White Mountain transition (Region 1).
 2. Southern borderland transition (Region 5).
- iii. Low risk areas— the remaining GMU divided into 4 areas determined by region.
 1. Region 2 – approximately 11 GMU
 2. Region 3 – approximately 16 GMU
 3. Region 4 – approximately 14 GMU
 4. Region 6 – approximately 8 GMU
- iv. In the high risk management units the sampling strategy will be much the same as in previous years with the goal of sampling enough animals

to detect CWD 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. Sample acquisition in the other 2 AGFD high risk regions can be increased by soliciting greater business participation, contacting drawn deer and elk hunters and recommend they submit heads for sampling and establishing voluntary check stations which will be manned by Department personnel (from Phoenix and the Region) as manpower allows and volunteers. The location of the check stations will be determined by the Regions.

- v. Tribal representatives will be contacted prior to the 2010/2011 sampling season in order to communicate our plans, the importance that we attribute to tribal herds, and the types of resources that we could provide should they wish to involve us.
- vi. In the medium and low risk management units, the criteria for the number of samples desired will be based on past harvest results, number of samples submitted in previous years, and regional personnel. The emphasis will be on targeted surveillance.

RESPONSE

The objectives of the response to the identification of a positive animal in Arizona are to inform key agency, state, tribal, and federal personnel as well as wildlife associations; inform the public; geographically contain the disease and if possible reduce the prevalence; and 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. Those elements are discussed separately.

Communication

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

- a. The CWD Communication Protocol will be updated regularly by Wildlife Health personnel.
- b. The communication materials (press releases, public information pieces, print, and audio/visual material) will be reviewed and, if needed, revised biannually.
- c. A flow chart detailing the notification and response process is included (Appendix B).
- d. Briefly, the process is:
 - i. Notify the Director, Wildlife Health Specialist (if not already aware), Research and Game Branch Chiefs, Regional Supervisor of the affected region, and Executive Staff that a cervid has tested positive.
 - ii. Notify the Arizona Game and Fish Commission that that CWD has been detected in the state.
 - iii. Notify the Governor's office that CWD has been detected in the state.
 - iv. Notify the State Veterinarian; USDA Area Veterinarian in Charge; Department of Health Services; adjoining state veterinarians, adjoining

- state wildlife agency Directors, and adjoining state wildlife health specialists; and Arizona Native American tribal veterinarians or game and fish personnel and tribal leaders.
- v. Notify the CWD Alliance of the change in status for the state.
 - vi. At this point, the response and communications will vary with the origin of the animal (i.e., free-ranging vs. captive) testing positive for CWD.
 - vii. Department personnel will be notified by Management team and members of the Information Branch. They will be provided with talking points and brief messages in order to provide the public with a consistent message and to reduce misinformation (Appendix E).
 - viii. The public will be informed by the media based on information provided by Department PIOs. The following will be available to address information requests and to develop a press release in the event a CWD-positive animal is found:
 - 1. Current background documents. The location of the documents will be included in the communication plan. Both hard and soft copies will be available.
 - 2. An agency spokesperson(s) knowledgeable in issues related to CWD such as the Wildlife Health Specialist or Wildlife Health staff.
 - 3. Video and still photography of CWD-positive animals to provide to media outlets requesting such information. These materials need to be appropriate for a broad audience of hunters and non-hunters, and
 - 4. A draft press release that can be updated with specific information should the detection of a CWD-positive animal occur.
 - ix. Conduct additional education and outreach efforts including human dimension surveys to both determine the impact of the discovery of CWD in Arizona and to attempt to minimize that impact on hunting as a recreational activity in the state.
 - 1. The results of a survey of Arizona hunters in 2002 were published in 2004 (Needham et al. 2004).
 - 2. The objectives of this study were to determine the effect of various levels of prevalence of CWD on hunters' willingness to continue hunting, to determine the effect of levels of hypothetical human health risk from CWD to affect willingness to continue hunting and to determine the acceptance by hunters of different management strategies when the two factors were combined. Arizona hunters were not asked about willingness to hunt when a hypothetical human health risk was present.
 - 3. When prevalence was 5% in one area of the state only, 5% of the hunters said they would stop hunting in the state. The percentage that would stop hunting increased as prevalence increased but since the higher hypothetical rates are not probable in Arizona, the results have little meaning. For non-resident hunters, the percentage of those choosing not to hunt in the state was higher.

4. It was deemed unacceptable to hunters for an agency to take no action in response to CWD. Sampling was considered moderately to highly acceptable. Allowing hunters to dramatically reduce the deer or elk populations in affected areas was slightly to moderately acceptable. Allowing agency personnel to reduce populations was both less acceptable and would be more controversial than reduction by hunters.
5. It is important to recognize that acceptance of a management strategy does not indicate a willingness to actively participate in the strategy. The answer to that question among others should guide the further development of this management plan.
6. This survey is now 7 years old and the attitudes of hunters have likely evolved as they have become more familiar with CWD. Since CWD has not been detected in Arizona, it is also possible that many hunters have only a minimal knowledge of the disease and no opinion on how it would affect their hunting participation.

CWD detected in a free-ranging cervid

CWD has been found in free-ranging or farmed cervids in 18 North American states and 2 provinces. The prevalence in endemic areas ranges from <1% to more than 30% according to the reports given at the 3rd International CWD Symposium (2009). Each state and province has instituted response plans in order to assess the distribution of the disease and control the spread. Strategies that have been employed include removal of animals within the home range of the positive animal, game management unit/county, and region; bans on feeding and baiting; restrictions on carcass movement; and mandatory testing of harvested animals. When CWD is detected in a new area, the prevalence is often determined to be 1% or less and even with high deer densities and high deer removal rates, very few additional positive animals are found. CWD has been detected in New Mexico and Utah in 2002 and 2003, respectively. The estimated prevalence rates remain below 2%. It is likely that CWD prevalence in Arizona would follow a similar pattern. At low prevalence rates, the rate of environmental transmission appears to be low whereas direct transmission between individuals is more likely. The response of the public, both the hunters and general, is dependent upon many factors and should be taken into account. 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 has not been effective or accepted by the public. The following stepwise approach will set targets for responding to increasing prevalence rates of CWD in free-ranging, wild cervids based on the results of the strategies employed by other states and provinces, especially those that have similar deer and elk populations and landscape structures. The goals of this plan are to limit the establishment and amplification of the disease in cervid populations of the state, reduce the number of CWD infected cervids, reduce environmental contamination, reduce transmission and reduce the number of potential cases. The final report from the CWD workshop held in Alberta, Canada on August 8-9, 2008 and additional

information from the 2009 International Chronic Wasting Disease Symposium were used as references as a basis for the following recommendations:

- a. Establish an Incident Command Structure by identifying an Incident Commander (probably within the Director's office at the headquarters) and Division Supervisors (at the Regional offices of the positive GMU and hunter's residence).
- b. The hunter will be notified by personnel from the region of his residence. AGFD personnel will conduct an investigation that will obtain the following information: location of harvest, number and classification of other animals seen in the area, number and classification of additional animals harvested by the hunter's companions, and the names and addresses of the companions. Department personnel will provide health and safety information, CDC recommendations and contact information for the Department of Health and the Wildlife Health Specialist.
- c. Testing will shift from batch submission to submission as samples are acquired for the positive GMU and surrounding GMU.
- d. The goal will be to meet the collection of a statistically significant number of samples from the affected GMU and the limited removal of infected animals through hunter harvest; however, if the goals cannot be met with this method, other methods such as using Department or USDA-APHIS-Wildlife Services sharpshooters will be considered. Active removal of animals is only recommended for prevalence rates higher than what has been detected in Utah and New Mexico.
- e. Response to management methods will be periodically evaluated. If the response (disease containment or reduction of prevalence) is not acceptable, then more intense and invasive methods will be instituted. This tiered response is detailed below.
- f. Estimated prevalence $< 5\%$:
 - i. First, require mandatory head submission for the game management unit where the positive animal originated and increase efforts to collect samples from all surrounding game management units in order to determine the extent of the occurrence of CWD.
 - ii. Second, change hunt structure for unit by increasing tag numbers and/or adding antlerless and population management hunts in order to provide a statistically significant number of samples (confirmation of a prevalence rate of less than 4% with a 95% confidence interval). Other states that have tried to increase harvest in CWD positive areas have been less than successful.
 - iii. Consider capture, test, and release with radio collars cervids within a five mile radius of CWD-positive animals. Animals testing positive will be recaptured and culled. This would probably have a high public acceptance level but there are a number of logistical issues and requires significant agency resources for success.
- g. Prevalence $\geq 5\%$:
 - i. Continue mandatory sample submission in the impacted game management unit and, additionally, require mandatory testing in all adjacent game management units.

- ii. Change hunt structure for unit by increasing tag numbers and/or adding antlerless and population management hunts in order to provide a statistically significant number of samples (confirmation of a prevalence rate of less than 4% with a 95% confidence interval).
- iii. Third, consider initiating focal removal of primary contact animals within a radius to be determined based on the best information regarding home ranges and the density of the herd for the species in question with the objective of removing potentially exposed animals, and reducing environmental contamination thereby potentially impacting the long-term prevalence of disease. Many western states are using focal removal of cervids within a 5 mile radius of CWD-positive cervids. It is very likely that this management action can only be effectively accomplished with sharpshooters. As such, public communication of the plan will need to be carefully crafted because it will not be universally accepted by the public.
- iv. Reducing the density of animals in a GMU or region will not be one of the goals of focal culling because it is not likely to affect prevalence or transmission because density levels in Arizona are already an order of magnitude below those that are recorded for the Midwest.
- h. The public information campaign will be a critical component of the response. Some of the points that should be emphasized are:
 - 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 an important disease of cervids and that will likely have little impact on the overall distribution of populations of deer and elk in the state but may impact the number and quality of trophy animals and overall recruitment.
 - iii. The Department response is based on research conducted across the U.S.
 - iv. The Department response has specific goals to limit the amount of disease in the state and to preserve hunting and wildlife viewing opportunities.
- i. In order to determine the extent of cervid movement, the level of intra-species contact, and the level of habitat use in the affected area, several adult deer/elk will be radio-marked. The information provided from the study will inform the developing management plan.
- j. All land management agencies in the GMU involved will be notified of the detection and provided with briefing information. Lessees, livestock groups, private landowners, and special license holders that have cervids will be notified through group notification processes or individually.
- k. If the targeted removal of animals is deemed necessary, the Department will work with appropriate personnel within and outside of the Department to ensure the completion of any required environmental documentation.
- l. If a rule is not already in place, the Director will issue an order to prohibit feeding and baiting of free-ranging cervids except by Department personnel that will be instituted pursuant to Arizona Revised Statutes §17-250. Feeding and supplementation of livestock will be allowed.
- m. If a rule is not already in place, then consider a directive or emergency rule pursuant to A.R.S. §17-250 that will limit the transportation of potentially

infected carcasses by requiring that such animals be boned-out in the GMU of harvest with all remains left on-site. To maintain evidence of legality, a cleaned skull cap or complete set of genitalia should remain with the boned-out carcass. Since sampling will be required in the affected GMU, there should be manned check stations to verify legality and a certificate of proof could be provided at that time.

- i. Complete restriction of carcass movement by rule is likely to affect hunter retention and engagement and such an action should take into consideration the socio-political impact.
 - ii. Enforcement of such restrictions will likely be logistically difficult.
 - iii. Voluntary participation in a program to limit carcass movement would likely have adequate support and participation.
 - iv. At a prevalence of 5% (which would be considered high for southwestern populations), only five animals for every 100 animal harvested would be infected. If 50% of the hunters followed the recommendations then the risk of transmission to another GMU would be from transportation of only 2 or 3 animals. It is likely that the carcass of at least one of those would end up at a game processor, or in a municipal waste site.
1. 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.
 - i. Unwanted meat and carcasses from CWD-positive animals will be destroyed by incineration.
 - ii. Alternatively, where an incineration facility is not available, a landfill that can handle CWD-positive material by isolating it by placing a layer of clay soil above and below the material could be used.
 - iii. Dispose of carcasses of animals harvested in CWD-positive GMUs appropriately.
 - iv. Potentially infectious material from animals harvested in known CWD-positive GMUs should remain in that unit by requiring that such animals be boned-out at the location of harvest with all remains left on-site. When lead ammunition has been used, burial of the remaining carcass material will be recommended. Burial should either occur on sight or at a designated landfill.
 - 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. An educational program regarding the recommended methods of disposal will be developed.

CWD detected in captive or farmed cervid

CWD has been detected in free-ranging or farmed cervids in 18 states and 2 provinces. In some cases, the source has been identified as another 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, 8 feet tall was effective at eliminating contact between farmed and free-ranging deer and elk. In addition, 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.

- a. The Director of the AGFD 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-I.
- b. The Department will coordinate with the Arizona Game and Fish Commission, State Veterinarian, Governor, and Area Veterinarian in Charge as needed or required by law.
- c. The origin of all of the animals brought into the facility for the past 10 years will be determined if possible.
- d. Trace-forward all of the animals shipped from the facility in the past 5 years if possible.
- e. 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 head of the wildlife management agency and the state veterinarian in the state or province where the animal has been shipped.
- f. A rule change is advised for A.A.C. R12-4-413 section H clarifying that the records must be kept for 5 years after the disposition of an animal.
- g. A.R.S. 17-250 and A.A.C. R12-409-I allow the Director to require the following:
 - i. Testing of all cervids on the premise.
 - ii. Requiring all cervids to remain on the premises or to move directly to slaughter.

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Appendix A

Chronic Wasting Disease Communication Protocol–Revised February 2010

CWD Communication Goals

1. Provide information to the Governor, the AGFD Commissioners, AGFD Executive Staff regarding the occurrence of CWD and the planned response.
2. Disseminate agency messages through the news media, AGFD e-newsletters, web sites and other electronic/print communications to the public to:
 - a. Help public understand agency actions.
 - b. Prevent / calm health fears.
3. Educate hunters to assist in controlling the spread of the disease and build support for agency actions in response to disease.
4. Educate and enlist support of high-interest groups for agency actions (high interest groups = sportsmen's' groups, hunting-related businesses, wildlife watchers groups).

Key Publics

1. AGFD Commission and staff members
2. Governor's office and Legislature
3. Hunters
4. High-interest groups
5. News media
6. Public: non-AGFD user groups
7. Government partners: state/county/federal

Messages

1. It is AGFD's responsibility to manage wildlife for the benefit of *all* Arizonans.
2. AGFD's actions are necessary for the long-term protection of wildlife.
3. There is no evidence that CWD poses a threat to human health. (*Both the WHO and FDA say there is no evidence CWD causes health problems in humans*).
4. AGFD's actions in relation to CWD factor in the long-term health of rural economies dependent upon wildlife resources.

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.

Spokespersons

Primary contacts	Additional contacts, reviewers	Regions	News release review (Required approval chain)
WMRS Chief WMGM Chief Wildlife Health Spec Wildlife Spec Office PIP Supervisor Office	WMRS Chief WMGM Chief WM AD WM/SS Dep Dir FO/IE Dep Dir IE AD FO AD SS AD	Regional PIOs RSs as backup Game program managers	1. IEIN Chief 2. WMRS Chief 3. WMGM Chief 4. WM AD 5. IE AD 6. FO AD 7. WM/SS Dep Dir and FO/IE Dep Dir (can consult with Wildl Health if necessary on science questions)

Communication Activities - During surveillance program

1. Public: AGFD Commission and Department personnel

Activity	When	Process Owner	Status/Notes
CWD training for all staff.	Ongoing	Wildl Health Staff	<u>Ongoing</u> : All AGFD staff have received training. All new employees receive it as part of the New Employee Welcome training.
Inform AGFD Commission of Dept. response plan update.	Ongoing	WMD AD	<u>Action Needed</u> : Present for review and comment; inform once new Response Plan is adopted.
Inform AGFD personnel by e-mail of developments.	Ongoing	WMRS Chief	<u>Ongoing</u>
Inform staff about communication plan & plan developments	When plan is adopted & as warranted	Wildl Health / IEIN Chief	<u>Action Needed</u> : Inform once Communication Plan is adopted by distributing to E-staff, regions, Game Branch, IEIN, and IEED.

Media practice sessions for key spokespeople.	Annually before CWD sampling season	IEIN Chief / spokespeople	<u>Action Needed:</u> As deemed necessary.
PIOs developing key notification list of key high interest groups.	Immediately and annually thereafter	IEIN PIOS (Phoenix) / consult Ombudsman	<u>Action Needed:</u> List to be updated annually.

2. Public: Hunters

Activity	When	Process Owner	Status/Notes
Place CWD information into tag mailout.	Ongoing and annually	IEIN Chief (for development) Draw Section Supervisor for Stuffing	In 2005, a revised 8-1/2" high x 5-1/2" wide flier was created. One side included expanded info on CWD, including the request that hunters donate deer and elk heads for testing. The other side included info on Fish Arizona! and subscribing to our e-publications. About 70,000 were sent out. Action continues with each draw and tag mailout.
Send CWD info/update to e-news subscribers.	Upon plan adoption with semiannual updates	IEIN Chief / appropriate Phoenix PIO	<u>In Process</u>
Review / revise CWD info being presented at hunter ed classes	Ongoing Info updated Jan. 2009	IEED Chief / Wildl Health	<u>Done and in process:</u> CWD is part of the Hunter Education Manual. Manual is being revised with current CWD info included; New edition expected to be out approximately Oct. 2010.
CWD page on AGFD website	Ongoing	IEIN Chief / Webmaster / Wildl Health	<u>Done and Ongoing.</u> Updated March 2009, will be updated at least annually.
CWD feature news story to newspapers &	Ongoing	IEIN Program Manager/ IEIN Chief	<u>Action needed:</u> Continue to interface with media

sport association newsletters			
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3. Public: Constituency Engagement List

Activity	When	Process Owner	Status/Notes
Communicate with constituency engagement list	Immediate and ongoing	IE AD/IEWR Chief/Leg Liaison	List of key contacts in sportsmen's groups and Web discussion forums has been developed. Draw database has been added to Lyris and is now called the "Hunting Highlights" list. <u>Action Needed:</u> Update as needed, at least annually.
Longer information piece mailed to key high-interest groups. Includes general info about disease and info from other states.	Ongoing	IEIN Chief	<u>Action needed:</u> Develop and review with input from Wildlife Health

4. Publics: News media, general public, and government partners

Activity	When	Process Owner	Status/Notes
Prepare video clips and stills for release to media post-discovery	Winter 2010	IEIN	<u>Action Needed:</u> Needs to be done.
Prepare VNRs. Prepare several on different aspects for future release. Estimate reproduction time: ID key recipient broadcasters.	TBD	IEIN Chief	<u>Action Needed:</u> Needs to be done.
Create and distribute brochure for rehabbers and good samaritans re: fawns.	Spring 2010	IEED Chief/ Publications / Wildl Health/FOD	<u>Done and Ongoing:</u> In the process of being updated.
Information to media re: fawns to rehabbers.	Spring 2010	Phoenix and Regional PIO/FOD	Action Needed: Once completed.

Communication Activities Post-Discovery

1. Public: Department

Activity	When	Process Owner	Status/Notes
Notify the Director/E-Staff/Management Team	Immediately	Wildlife Health Specialist/WMRS Chief	
Media practice session for key spokespeople.	Upon discovery	IEIN Chief	If deemed necessary.

2. Public: AGFD Commission and staff members

Activity	When	Process Owner	Status/Notes
Inform AGFD Commission of dept response activities & developments.	Immediately and as warranted	WMD AD	
Inform AGFD employees of dept response activities & developments.	Immediately and as warranted	IEIN Chief / Wildlife Health	

3. Public: Government partners

Activity	When	Process Owner	Notes
Notify the Governor and legislature of discovery and subsequent implementation of CWD response plan.	Immediately	DOHQ	
Notify state and federal agency partners of discovery and subsequent implementation of CWD response plan.	Immediately	DOHQ/Wildlife Health,/WMRS Chief	This group includes the State Veterinarian, the Department of Health Services, governors of adjacent states, tribes, USDA-APHIS-WS, and USDA-APHIS-VS-AVIC.
Notify non-governmental partners and associations.	Immediately	Wildlife Health/WMRS Chief	This group includes CWD Alliance, AFWA, and WAFWA.
Provide ongoing updates of results of response.	As needed	Wildlife Health/WMRS Chief	

4. Public: News Media and non-AGFD users

Activity	When	Process Owner	Notes
Release video clips and stills prepared for media post-discovery.	Immediately and as warranted	IEIN Chief	
Release prepared VNRs.	As warranted	IEIN Chief	

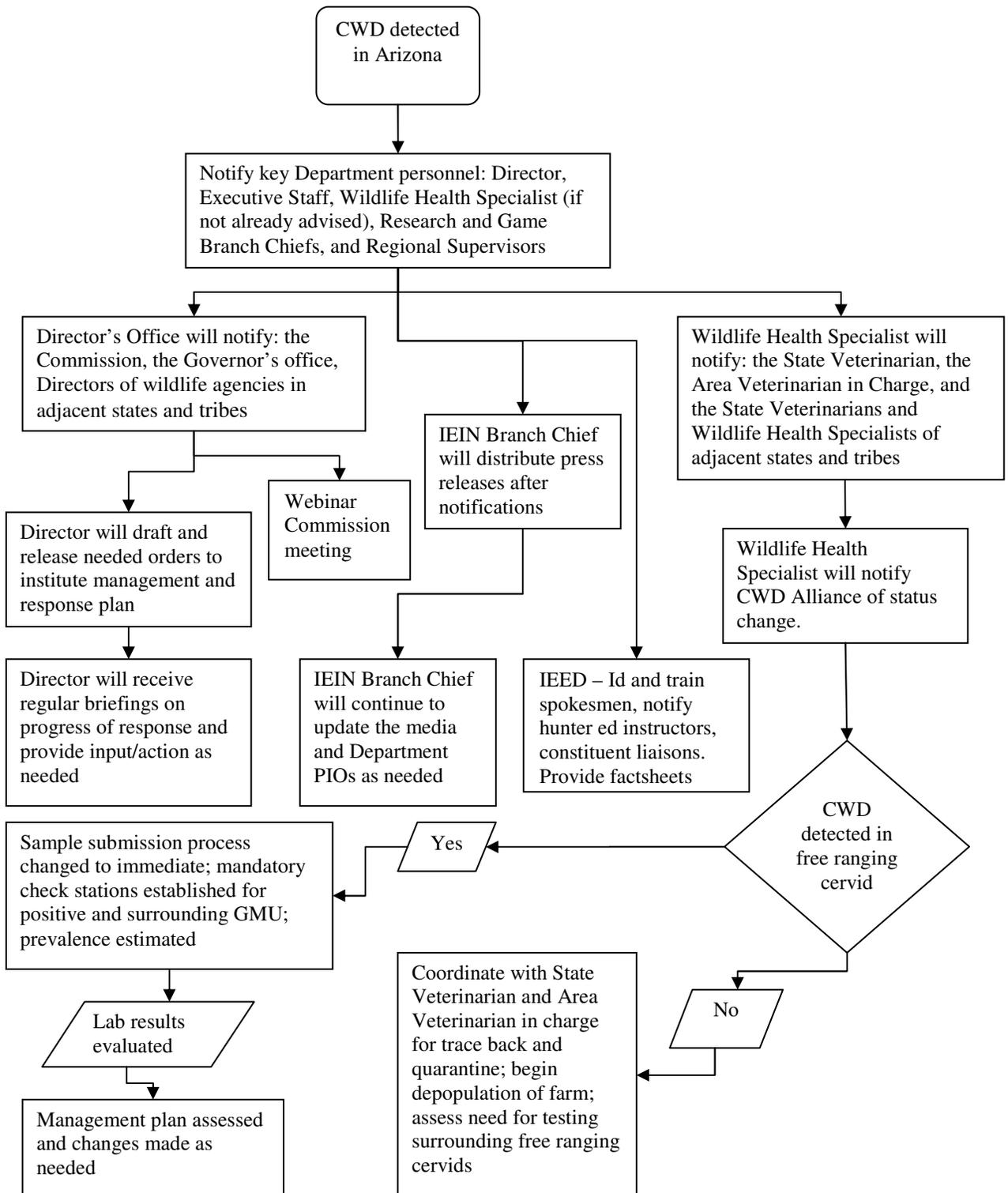
5. Public: Hunters

Activity	When	Process Owner	Status/Notes
Report on agency activities/findings to e-news subscribers.	Immediately and periodically thereafter as warranted	IEIN Chief	Wildlife Health Specialist, Game Branch, RS, Game Specs, and Phoenix and regional PIO will also be involved.
Send agency activities/info to hunter ed instructors.	As warranted	IEED Chief	
Regular updates of CWD page on AGFD website.	Yearly or as warranted	Wildlife Health / Webmaster	
News about CWD agency activities in hunter tag mailings and available as handouts at vendors.	Ongoing	IEIN Chief Regional PIO / Wildlife Health	

6. Public: Constituency Engagement List

Activity	When	Process Owner	Notes
“First announcement” news about CWD agency activities in mailings and e-mail to high-interest groups.	Immediately post-discovery	IE AD / IEWR Chief	Game Branch, RS, Game Specs, and Phoenix and regional PIO will also be involved.
Ask key high-interest groups if they want an AGFD speaker at a meeting for Q&A and coordinate visit.	Immediately post-discovery	IEWR Chief	Game Branch, RS, Game Specs, and Phoenix and regional PIO will also be involved.
Email updates to board members of high-interest groups from GF1. Ask them to disseminate info to members.	Monthly post discovery or as warranted	IEWR Chief	Game Branch, RS, Game Specs, and Phoenix and regional PIO will also be involved.

Appendix C
Flow chart for communication plan



Appendix D

Rule changes, directives, and emergency orders

Preventative

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

- The following recommendation was sent to Rules and Risk Section on September 15, 2009: Only boned-out meat, skulls without remaining tissue, taxidermist-processed mounts, or tanned hides will be allowed to be brought in from another state. Prohibit the importation of cervids harvested out-of-state into Arizona with the brain, spinal cord, and/or entrails intact.
- Ban the importation of antlers in velvet, or harvested velvet, and any other reasonable restrictions if supported by the best available data.
- 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 boned-out meat, skulls without remaining nervous or lymphatic tissue, taxidermist-processed mounts, or tanned hides should be allowed to be transported out of a CWD positive GMU.

Title 13-2927 or A.A.C. R12-4-303 or A.A.C.R12-4-430

- Amend rule to prohibit the intentional feeding or baiting of free-ranging wild cervids except by AGFD personnel. The rule would be structured to allow the feeding and supplementation of livestock.

A.A.C. R12-4-112

- Amend 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.
- Currently, the rule allows the individual that possesses the condemned carcass to obtain a replacement tag.
- 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 Department 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.

Free-ranging cervid

- An order prohibiting the feeding and baiting of free-ranging cervids except by AGFD personnel. Feeding and supplementation of livestock will be allowed.
- 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.

Farmed Cervid

- The Director of the AGFD 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 5 years.
 - The destination 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 E

Information for Department Personnel

What is Chronic Wasting Disease?

Chronic Wasting Disease is a contagious infection of the brain caused by a prion (pree-on), an abnormally shaped protein. It is one of a group of diseases called transmissible spongiform encephalopathies or TSEs. They are called this because the brain tissue from affected animals looks like a sponge under the microscope. As a brain infection, it causes animals to behave abnormally – they act confused, don't eat right, drool a lot, and drink a lot. These signs are not specific to CWD and laboratory tests need to be done to confirm the diagnosis.

What species of animals are affected by CWD?

Only four species of the deer family (white-tailed deer, mule deer, elk, and moose) are known to be naturally affected. Other members of the deer family may be susceptible, based on experimental studies but natural infections have not been observed.

Does CWD cause illness in people?

No. Scientists have tried to test this possibility by using mice that have the human gene for the normal prion protein and those mice were not affected. People are affected by other prion diseases, one from cattle (bovine spongiform encephalopathy or BSE) and one that occurs in people (variant Creutzfeldt-Jakob disease or vCJD).

Why does the CDC advise against consuming meat from a positive animal?

Because **if** people are susceptible, there is no cure for the infection and it is invariably fatal. Since the disease was identified 1978 (it has been present in deer since at least 1967 based on a review of preserved tissues), there have been no cases found in hunters anywhere in the United States or Canada.

I have a permit to hunt in the GMU where CWD has been detected, what should I do if I harvest a deer/elk?

Because the prions are concentrated in the brain, spinal cord, and intestines, they should not be moved to another area unless they can be buried or incinerated. Either field dress and quarter the animal in the unit, leaving the brain and internal organs there, OR take the gutted carcass to a game meat processor (remember to preserve evidence of legal harvest). The Department can submit the lymph nodes from the head of your deer/elk for testing to see if CWD prions are present. There will be sample collection stations near the affected GMU and in addition, samples can be collected by the Wildlife Managers in the field.

Can I keep the trophy from my deer/elk that was harvested in the GMU where CWD has been detected? the meat?

Yes, once the trophy has been preserved by the taxidermist, it is not considered to represent a risk for transmission of CWD to other deer/elk. Yes, you can keep the meat and if you like, you can have the animal's lymph nodes tested before you consume any of the meat (see above).

I come from another state to hunt in Arizona, will I still be able to take my trophy home? the meat?

Each state has its own rules regarding the importation of game meat and trophies. Please contact your state game and fish department.

I go to another state to hunt, can I bring my trophy home to Arizona? the meat?

Yes, as long as the skull is cleaned free of remaining nervous or lymphatic tissue or has been mounted by a taxidermist. Yes, you can bring the meat back as long as it has been wrapped and packaged and it consists of boned-out meat.

What is the Department doing in response to the detection of CWD in a deer/elk in Arizona?

The Department has been expecting and planning for this since 1998. We have learned from the management actions taken by other states about what will help control the disease and what won't. First, we will find out how big the problem is and then we will take steps to prevent it from spreading. It is almost a certainty that only a very small number of animals are infected, probably less than 2% of those in the immediate vicinity of the positive animal.

Can Livestock Be Affected with CWD?

Cattle and domestic livestock seem to be resistant to natural infection. Cattle have been experimentally inoculated with the infectious prion producing the disease but there have been no reported cases of natural transmission occurring between livestock and infected wildlife.

What Should You Do If You See a Deer or Elk That Looks Sick?

Do not shoot, handle, or consume any animal that is acting abnormally or appears to be sick. Contact the Arizona Game and Fish Department at 1-800-352-07000 if you see or harvest an animal that appears sick.