Iowa Department of Natural Resources and Iowa Department of Agriculture and Land Stewardship

CHRONIC WASTING DISEASE RESPONSE PLAN

CONTENTS

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and Iowa Department of Agriculture and Land Stewardship

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I. INTRODUCTION

A. Purpose

To identify, coordinate, and assign all Iowa Department of Natural Resources (DNR) and Iowa Department of Agriculture and Land Stewardship (IDALS) activities necessary for responding to an outbreak of Chronic Wasting Disease (CWD) in the State of Iowa.

B. Scope

This plan:

- Is currently activated for surveillance and detection and will be elevated for containment and control if CWD is confirmed within the borders of the state of Iowa.

- Describes resources made available and DNR/IDALS actions taken to meet the goals of surveillance and detection, containment, and control with respect to a CWD outbreak within the borders of the state of Iowa.

C. Plan Activation

This plan is activated by the Director of the Iowa Department of Natural Resources and the Secretary of the Iowa Department of Agriculture and Land Stewardship (IDALS).

II. PLANNING CONSIDERATIONS

A. Situation Overview

Chronic wasting disease is a neurological disease belonging to a group of diseases called transmissible spongiform encephalopathies (TSEs) or prion diseases. These diseases are believed to be caused by infectious, self-propagating proteinaceous prions. Prions are normal cell proteins whose shape has been altered in such a way that they can cause disease. However, much of their biology is poorly understood. Chronic wasting disease is similar to, but distinct from, other TSEs in other species including scrapie in sheep, bovine spongiform encephalopathy (BSE) in cattle, transmissible mink encephalopathy

(TME) in ranched mink, feline spongiform encephalopathy (FSE) in cats, and Creutzfeldt-Jakob Disease (CJD), new variant Creutzfeldt-Jakob Disease (nvCJD), kuru, Gertsmann-Straussler-Scheinker syndrome and fatal familial insomnia in humans.

Chronic wasting disease was first identified in captive mule deer at a research facility in Colorado in 1967. Since then, CWD has been found in wild, free-ranging deer and elk populations in Alberta, Colorado, Illinois, Kansas, Maryland, Missouri, Minnesota, Nebraska, New Mexico, New York, Saskatchewan, North Dakota, South Dakota, Texas, Utah, Virginia, West Virginia, Wisconsin, and Wyoming. To date, CWD has been diagnosed in captive cervid facilities in Alberta, Colorado, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, New York, Oklahoma, Saskatchewan and South Dakota, Utah, Wisconsin and Wyoming. The connection between CWD in captive cervids and free-ranging cervids is inconclusive.

Chronic Wasting Disease affects only deer, moose and elk. Pronghorn, bighorn sheep, mouflon, mountain goats, and a blackbuck which had contact with CWD-infected deer and elk or lived in premises where CWD occurred have not developed the disease, nor have domestic cattle, sheep, and goats that have shared research facilities with CWD-affected deer and elk for prolonged periods. Cattle intensively exposed to CWD-infected deer and elk under experimental conditions have remained healthy for over four years. A variety of species can be experimentally infected with CWD when infectious material is injected directly into their brains, but the epidemiologic significance of this route of infection is questionable. No cases of human disease have been associated with CWD. Examination of the available data has led the U. S. Centers for Disease Control and Prevention and the World Health Organization (WHO) to conclude that there is no scientific evidence CWD can infect humans. However, as a precaution, the WHO recommends that no part of a deer or elk diagnosed with CWD be consumed by people or other animals.

The mode of transmission is unclear, but available evidence suggests transmission of CWD is by means of animal-to-animal contact and/or contamination of feed/water with infectious saliva, feces, and possibly urine. Maternal transmission may occur, but it appears to be relatively uncommon and insufficient to maintain outbreaks currently observed in the wild. Prion contaminated environments likely play a role in epidemics and the recurrence of CWD. Transmission appears more likely where cervids are crowded or congregate at supplemental feed stations.

Susceptibility to CWD infection appears relatively uniform among susceptible species (i.e., elk, mule deer and white-tailed deer), sexes, and age classes, but species-specific behavioral differences may influence transmission. There appears to be some genetic predisposition to infection in elk but not deer. Chronic wasting disease appears to be maintained naturally in both captive and free-ranging cervid populations; epidemics persist in the absence of exposure to contaminated feeds or other likely outside sources of infection. In high-density captive herds, CWD can reach high prevalence resulting in high mortality. In free-ranging deer and elk populations, epidemic models available to date indicate that CWD may lead to local reduction of those populations.

Cervids with natural CWD infections are generally infected for 20-30 months before showing clinical symptoms, but incubation may be somewhat shorter (<16 months) or considerably longer (60 months +) in individual cases. Symptoms include severe weight loss, excessive salivation, increased drinking/urination, and abnormal behavior (e.g., stumbling, trembling, depression). Infected deer and elk may allow unusually close approach by humans. Subtle changes in behavior (e.g., increased or decreased social interactions, repetitive movements, periods of sleepiness) may precede end stage disease. Once symptoms appear, the course of CWD varies from a few days to a year, with most animals surviving from a few weeks to 3 or 4 months. This course is probably somewhat shorter in free-ranging deer and elk than those in captivity. No antibody response to the CWD agent has been detected. Chronic wasting disease is inevitably fatal once symptoms appear. No treatment or approved vaccine is currently available.

Other health problems, particularly pneumonia and injury, may appear outwardly similar to CWD. Consequently, laboratory diagnosis is essential to confirm infections in suspect animals. There is currently no validated live animal test for CWD; definitive diagnosis must be made by immunohistochemical (IHC) testing of brain, lymph node, and/or tonsil tissue from a dead animal.

The potential negative impacts of CWD on Iowa's cervid populations, both free-ranging and captive, are enormous. In captive herds, CWD infection, and the quarantines that follow, limits the value of those animals for trade and research, as well as the economic contribution of the cervid industry to the overall economy. Indemnification of infected animals constitutes a substantial economic burden for governments. Infection of free-ranging cervid populations may establish long-term foci of infection, making cervid farming economically infeasible in those areas. Moreover, the negative impact of herd infection on the lives of cervid farmers cannot be ignored. Implications of CWD on free-ranging cervid populations may be even direr. If substantial numbers of hunters decide not to hunt, statewide, deer populations will increase causing adverse effects on farming, the timber industry, motor vehicle collision rates, suburban conflicts, natural plant communities, other wildlife that require the habitat that deer browse, and over-winter deer survival. On a social level, this would impact one of Iowa's cherished cultural traditions. On an economic level, there would be substantial impacts to local and state economies and state sales and income tax revenues as deer hunting has a $ multi-million annual economic impact in Iowa. On a conservation level, this would impact fisheries, wildlife management, research, and law enforcement as a large share of the funding for these programs comes from deer license and permit revenue.

B. Assumptions

- The response to any outbreak of CWD in Iowa will be expedient.
- Wildlife-related control measures that may be expected include depopulation of susceptible cervids from selected areas outside of normal hunting seasons, additional deer tag allocations during normal hunting seasons in affected

areas, statewide prohibition of movement of live captive cervids without a permit issued by the IDALS, mandatory reporting of escaped captive cervids (within 24 hours), prohibition of movement of cervid carcasses from or within affected geographic areas, statewide prohibition of placing feed for wildlife that is accessible to deer other than that from normal agricultural practices and statewide prohibition of rehabilitation and release into the wild of any deer.

III. CONCEPT OF OPERATIONS

A. Goals

This plan is organized around three major goals. In the event that CWD does manifest itself within the state, the objective is to control it as quickly and humanely as possible. These goals are described below:

Goal 1 – Surveillance and Detection: To track and monitor instances of CWD throughout the country and to monitor both wild and captive cervid populations through targeted and active surveillance within Iowa's borders using all available collection methods.

Goal 2 – Containment: To stop the spread of CWD if found within Iowa's borders by taking actions which may include, but are not limited to, statewide prohibition of movement of live captive cervids without a permit issued by IDALS, mandatory reporting of escaped captive cervids (within 24 hours), prohibition of movement of cervid carcasses except for boned out meat, skin (cape) and antlers attached to a clean skull plate from which all brain and connective tissue has been removed from or within affected geographic areas, statewide prohibition of placing feed for wildlife that is accessible to deer other than that from normal agricultural practices and statewide prohibition of rehabilitation and release into the wild of any deer.

Goal 3 – Disease Control: To eliminate the presence of CWD within Iowa's borders by taking actions which may include, but are not limited to, allocation of additional deer tags during normal hunting seasons in affected areas, depopulation of susceptible cervids from selected areas outside of normal hunting seasons while adhering to approved carcass disposal methods.

B. Assignment of Responsibilities

Surveillance and Detection

- The State Wildlife Liaison Officer (SWLO) and the State Veterinarian monitor instances of CWD throughout the country and maintain a communication bridge with IDALS and DNR.

- DNR personnel survey deer through road kills, hunter kills, or other means and collect appropriate tissue samples for submission to National Veterinary Services Laboratory (NVSL) in Ames, Iowa or other Department approved laboratory.

- IDALS personnel survey captive cervids and collect appropriate tissue samples for submission to National Veterinary Services Laboratory (NVSL) in Ames, Iowa or other Nationally approved laboratory.

- SWLO and the State Veterinarian maintain contact to provide current specimen collection information including subsequent test results.

Communication/Education

- In the event of a CWD confirmation in Iowa, communication will play a critical role. The state's handling of the situation in the first 24 hours and the ensuing 10 days will have a lasting impact on public perception of the state's ability to address and control the disease. The DNR, IDALS and the Iowa Department of Public Health (IDPH) will designate limited spokespeople and work through agency Public Information Officers (PIOs) to provide the most up-to-date information to the media, public, and other non-governmental entities.

- Regardless of whether it is in a free-ranging or captive cervid population, confirmation of a CWD infection in Iowa will involve DNR and IDALS in a series of actions and communications. Developments in other states with CWD have shown that ambitious depopulation plans can be controversial. Agency officials from DNR, IDALS and IDPH must outline a coordinated effort to address the situation, and maintain continual public communications to explain and update actions and goals. Key communication activities which will need to be undertaken include, but are not limited to:

    - Security: Notification will take place upon official laboratory confirmation of CWD-positive test results.

        - Notification: Interagency communication will begin immediately, with notice proceeding up the divisional chain of command to each Department Director. The Directors will inform the Governor's press, legislative, and policy offices; the Natural Resources Commission (NRC); the Secretary of Agriculture; the Director, IDPH, the United States Department of Agriculture and the Iowa Farm Deer Council.

        - A meeting of key representatives from DNR, IDALS, the Governor's office, the NRC, and IDPH will be arranged as soon as possible to arrange a public announcement of the discovery and implement disease control strategies.

- A media advisory will be issued following the meeting to announce a press conference. The press conference will be held in Des Moines at one of the state buildings.

- Agency directors or designees will make calls to key constituency/stakeholder groups, including counterparts in other Midwest states, appropriate federal agencies, legislators, local municipality officials where the discovery is made, and university collaborators, to inform them of the CWD confirmation and impending announcement.

- The DNR and IDALS Directors, and possibly the Governor, will confirm the presence of CWD in Iowa and outline the state's response plan. The press conference will include media packets providing reporters with background information on CWD, a history of Iowa's surveillance efforts, and other materials as deemed needed or appropriate.

- In the days following the announcement, public interest (and media attention) will be at peak levels. The PIOs for both agencies will coordinate efforts to have agency directors/designees engaged in public appearances or interviews in television and radio programs, as well as ensuring availability for print reporters and coordinating articles in stakeholder/trade publications to discuss the state's actions. Continual public communication will maximize public and media understanding of the situation.

- Within 10 business days of the initial confirmation announcement, each agency will reactivate the communication teams to continue working as needed with local constituencies, facilitating communications, answering questions, and providing updates on Iowa's progress.

- Each agency's Information and Education office will collect and analyze news stories to help determine the effectiveness, and modify as needed, the communication and outreach efforts. News and feature stories, as well as editorials and letters to the editor, will help indicate public awareness and understanding.

Containment

- SWLO and the State Veterinarian conduct a risk assessment to determine probability of CWD spreading away from the affected area.

- If risk assessment warrants further action, SWLO and the State Veterinarian contact the Director of the DNR and the Secretary of Agriculture to order

statewide prohibition of movement of live captive cervids without a permit issued by IDALS, mandatory reporting of escaped captive cervids (within 24 hours), prohibition of cervid carcasses except for boned out meat, skin (cape) and antlers attached to a clean skull plate from which all brain and connective tissue has been removed from or within affected geographic areas, statewide prohibition of placing feed for wildlife that is accessible to deer other than that from normal agricultural practices and statewide prohibition of rehabilitation and release into the wild of any deer. In addition, the Director and the Secretary of Agriculture may seek a Declaration of Emergency from the Governor to gain access to all private and public lands in the affected area.

Disease Control

- At the direction of the Director and the Secretary of Agriculture, the DNR and IDALS will provide personnel and equipment to implement cervid depopulation measures within the affected area or premises.

- Local landowners will be recruited to kill deer from private land, with DNR staff available to assist landowners on request. Iowa DNR staff will kill deer on public land outside of normal hunting seasons.

- Cervid populations in the affected area will be reduced to levels at which CWD transmission is unlikely.

- Carcass disposal will follow acceptable guidelines for the affected area.

C. Action Plan

This plan is activated by the Director of the Iowa Department of Natural Resources and the Secretary of Agriculture.

Surveillance and Detection

- The surveillance (i.e. testing of animals to determine the presence/absence and extent of disease) will consist of two types; targeted surveillance and active surveillance.

  - *Targeted surveillance in free-ranging cervids:* Continuation of current DNR activities to identify and test free-ranging cervids statewide that have been observed by the public or Department staff as showing symptoms consistent with CWD (emaciation, abnormal behavior/nervous system symptoms, excessive salivation, etc.). Department staff will collect these animals and a brainstem sample and the medial retropharyngeal lymph nodes will be collected. Testing will proceed as outlined below. Disposal of specimens from targeted surveillance will be

by approved methods determined in consultation with the State Veterinarian.

- *Active surveillance in free-ranging cervids:* Testing of outwardly healthy cervids harvested by hunters during normal seasons, harvested via crop damage permits, or killed by vehicle collisions.

- For administrative convenience and public comprehension, surveillance will be carried out on a county basis.

- Because the monetary and personnel resources available for testing are limited, all counties may not be sampled in one year. Counties targeted for earliest sampling will be determined by:

  - Geographic location;

  - The number of captive cervid facilities present in the county;

  - The presence of cervid education/research facilities.

- All 99 Iowa counties will be sampled at some point during a three-year period. Counties judged on the basis of epidemiological factors to be of higher risk may be sampled repeatedly during that period.

- Approximately 3,000 deer will be tested from selected counties in Northeast Iowa (See Appendix B). Approximately 1,000 additional samples will be collected from the remainder of the state.

- Brainstems and medial retropharyngeal lymph nodes of deer will be collected by Department staff, uniquely identified with a tag, placed in formalin, and transported to the NVSL or other Department approved laboratory for testing.

- Testing will consist of:

  - Removal of the brainstem and medial retropharyngeal lymph nodes.

  - Data from each animal (e.g., number, age, sex, geographic location of sampling to at least the quarter section level, and hunter contact information) will be recorded and then computerized in a database housed at the Chariton Research Station. Hunters will be notified in writing if their deer is negative, and via phone and in writing if it is positive. Test results will be compiled and analyzed using appropriate epidemiological and statistical methods, with results communicated as outlined in the Communications/Education section, below.

- Tissues will be packaged individually in formalin, and shipped to NVSL or other Department approved laboratory where sections will be made, stained by immunohistochemical methods, and screened for the presence of characteristic CWD prion protein. After appropriate samples have been collected, heads and/or carcasses will be disposed of via landfill or burial until such a time as CWD is identified in the state.

- *Active surveillance in captive cervids:* Continuation of current IDALS activities to identify and test susceptible captive cervids currently enrolled in the Iowa Voluntary CWD Program statewide. In addition, all CWD susceptible cervids not currently enrolled in the Iowa Voluntary CWD Program will be required to do CWD testing in the surveillance zone.

Communications/Education

- During the surveillance period, DNR and IDALS officials will focus on new ways to educate Iowa residents about CWD and Iowa's plans for surveillance and control. Messages will be consistent. All communicators should understand and be able to discuss CWD (basic pathogenesis and how it impacts wildlife), the testing procedure, Iowa's surveillance efforts, and how preventative policies can help prevent the introduction and spread of the disease. Key messages will focus on individual management actions to prevent CWD in Iowa.

- Communication/Education activities should include:

  - Appropriate staff, designated by the DNR and IDALS working at a regional level, attending local meetings of respective constituency groups to make presentations and answer questions.

  - Natural Resource Commissioners discussing the issue at public meetings and special events to raise support and awareness about the state's surveillance efforts and prevention goals.

  - Notification of updates to Iowa Rapid Veterinary Information Network (IRVIN) subscribers and Iowa Farm Deer Council.

  - DNR and IDALS executives raising public awareness and broad-based public support through guest editorials in daily newspapers, radio and television interviews, and other public speaking opportunities.

  - DNR and IDALS staff have already presented an overview and update on CWD to the Iowa Legislature. These information updates should be an ongoing activity, to keep policy-makers informed of recent developments.

- Preparation of a CWD brochure/fact sheets for public distribution, publication of CWD information in the *Iowa Hunting and Trapping Guide*, and other publications.

- Continual, up-to-date information on DNR and IDALS web sites.

Disease Containment and Disease Control

- The DNR/IDALS efforts are aimed at quick identification and response to limit further transmission of the disease and/or eradicate CWD from both captive and free-ranging cervids. If CWD is diagnosed in the wild or a captive facility, a DNR/IDALS CWD Management Team, including a representative from the Iowa Farm Deer Council will be activated. This Team will meet on a regular basis to coordinate the decision-making process of the DNR and IDALS. Duties of the CWD Management Team will be to:

  - Revise the contingency plan as needed;

  - Attempt to secure financial resources for response;

  - Work with executive office and legislature;

  - Review current science of the disease;

  - Keep public informed;

  - Monitor and report the progress of our response.

- The DNR/IDALS CWD control efforts (i.e., management and field actions to promptly kill infected and exposed animals with the intent of limiting further transmission of the disease and eradicating CWD from free-ranging cervids) will be triggered by one of two scenarios; Identification of an infected captive cervid facility or identification of an infected free-ranging cervid.

  - *Identification of an infected captive cervid facility:*
    1. If chronic wasting disease is documented within the captive cervid industry, the situation shall be reported immediately to IDALS, State Veterinarian Office.
    2. IDALS (State Veterinarian) shall report all documented chronic wasting disease cases to DNR and IDPH (State Public Health Veterinarian).
    3. All cervid herds having a documented case(s) of chronic wasting disease will be placed under quarantine by the State Veterinarian.
    4. The State Veterinarian will implement efforts to locate (e.g., trace forward and trace back) all cervids ever held within facilities having a documented chronic wasting disease case. As needed the

State Veterinarian will place additional facilities under quarantine for surveillance and for testing of suspect animals.

5. IDALS will coordinate with appropriate support from DNR to secure USDA indemnity funds for depopulation of all cervids within facilities having a documented chronic wasting disease case.
6. Regardless of the ability to secure indemnity funds, all cervids within facilities having documented chronic wasting disease case will be depopulated within sixty (60) days. *Similar to other business ventures, participants of the captive cervid industry are encouraged to cover insurance to cover catastrophic losses—in this case associated with a known disease. Currently there is no guarantee that indemnity funds will be available.*
    a. Any exception to this sixty (60) day depopulation step shall require a written request by the owner clearly stating why an extension is justified and the joint approval of IDALS and DNR.
7. Depopulation activities will be directed/overseen and verified by the State Veterinarian with appropriate support from DNR.
8. All cervids testing positive for chronic wasting disease or that have been depopulated from a facility with a documented chronic wasting disease case shall be properly disposed of at a site jointly approved by IDALS, DNR, and IDPH.
9. IDALS and DNR will periodically monitor depopulated facilities (i.e., check viability of perimeter fences, evaluate the need to eliminate wild cervids that may have entered facility) and evaluate steps to insure the long-term maintenance and integrity of perimeter fences in cooperation with the property owner.
10. All depopulated facilities may only be repopulated with cervids through joint approval from IDALS and DNR. Prior to any repopulation of these facilities, fencing standards that prevent nose to nose contact through the perimeter fence (e.g., double fencing) must be approved and implemented. All repopulated captive cervid herds may be required to participate in a USDA approved or state-sponsored chronic wasting disease surveillance program.
11. During the course of the above referenced items, IDALS, DNR and IDPH will work cooperatively to continually keep the captive cervid industry, private land owners, and general public informed of ongoing situation and any associated risks to livestock, wildlife, and human populations. In an effort to insure consistency and accuracy, the state agency (i.e., IDALS, DNR) permitting the facility in question will serve as the lead agency regarding coordination and release of informational materials.

- The primary objective of DNR control efforts will be to determine if free-ranging cervids in the vicinity of the captive herd are also infected with

CWD and, if so, the magnitude and geographic extent of that infection. In the event an infected captive cervid is identified, the following measures will be implemented as rapidly as possible:

- Geographic Information Systems (GIS) methods will be used to map the location of the infected captive cervid and herd (index case). A five-mile radius circle will be drawn around the index case, defining a ~79 mi^2 surveillance zone for free-ranging cervids.

- Approximately 300 free-ranging deer ≥16 months of age will be killed expeditiously in the surveillance zone and tested for CWD. Efforts will be made to ensure the sample is geographically representative. This sample would provide sufficient statistical power to be 95% confident of detecting the disease if it is present in the area at a prevalence of at least 1%. Two methods may be used to obtain the sample, one preferred, the other alternative, to be used only if the preferred method fails to gather the needed number of animals:

    - Preferred: Landowners will be recruited to kill deer from private land, with DNR staff available to assist landowners on request. DNR staff will kill deer on public land.

    - Alternative: The Director and the Secretary of Agriculture will expeditiously seek a Declaration of Emergency from the Governor in order to gain legal access to private lands of individuals refusing to cooperate in surveillance. Subsequently, DNR staff will kill deer on those lands.

- Heads of harvested deer will be tested for CWD by methods previously noted above.

- Disposal of all unused tissues will be via landfill, incineration, or other approved methods at NVSL or other Department(s) approved facility.

- Two possible scenarios may result from sampling in the surveillance zone surrounding the index case:

    - No infected free-ranging cervids are found. In this event, sampling in the 79 mi^2 surveillance zone will be carried out as noted above. Sampling will focus on deer harvested during normal hunting seasons for a period to be determined by epidemiologic analyses of surveillance data and findings from the index captive herd, but for not less than three years. Deer not harvested in the hunt will be tested opportunistically as they become available.

- Infected free-ranging cervids are found. In this event, full-scale disease control operations will commence, with the primary goal being to dramatically reduce the densities of all free-ranging cervids within the 79 mi^2 area surrounding the index case.

    - Killing will be carried out by whatever means are deemed most effective.

    - Killing will be carried out by DNR staff, with the assistance of personnel from other agencies as needed. Assistance of the Iowa State Patrol and local Sheriff's office may be requested to restrict public access to, and provide security in and around, the depopulation area.

    - All animals ≥16 months of age will be tested for CWD by methods noted above.

    - It is recognized that approximately 5-10% of the free-ranging population will likely remain.

- Two possible scenarios may result from testing animals killed in the depopulation zone:

    - No additional infected free-ranging cervids are found. In this event, using GIS mapping, new 15-mile radius surveillance zones (each encompassing an area of ~707 mi^2) will be established around the two index cases (i.e., infected captive cervid herd and infected free-ranging cervid).

        ◊ Within each of these new surveillance zones, voluntary checking of all hunter-harvested deer by Wildlife Division staff will be instituted for a period of three years.

        ◊ From that sample, approximately four cervids/section ≥16 months of age will be tested for CWD by the methods previously described.

        ◊ The tested sample will be representative of the sex ratio of cervids in the surveillance zone.

        ◊ Composition of the tested sample may also reflect results of epidemiologic analyses.

        ◊ Experience with CWD in Colorado has shown the disease to be persistent in the environment, and that its transmission involves some environmental component(s),

although these are poorly defined at this time. Recognizing this:

- ♦ Long-term disease management efforts will necessitate maintenance of low densities of free-ranging cervids (as low as technically possible to a target level of zero) in the surveillance zones for a prolonged period of time. The length of that period will be based to the extent possible on current research results and the experience of other states, but will be five years at a minimum.

- ♦ As effective environmental decontamination methods are identified by research or the experience of other states, efforts will be made to apply them to the surveillance zones.

- ♦ Habitat management in the surveillance zones will emphasize practices that discourage the presence and growth of cervid populations.

- Additional infected free-ranging cervids are found. In this event, using GIS mapping, new depopulation zones will be defined within five-mile radii of each newly discovered infected cervid.

  - ◊ Within each of these new depopulation zones, dramatically reducing the densities of all free-ranging cervids, followed by testing, will be carried out as described in points previously described above.

  - ◊ Following depopulation:

    - ♦ If no additional infected free-ranging cervids are found, new 15-mile radius surveillance zones (each encompassing an area of ~707 mi^2) will be established around the location from which each infected cervid was taken. Surveillance will proceed as described previously.

    - ♦ If additional infected free-ranging cervids are found, control activities will proceed as described previously above until no additional infected free-ranging cervids are identified.

- *Identification of an infected free-ranging cervid*: The primary objective of DNR disease control efforts will be to determine the magnitude and

geographic extent of CWD infection in the free-ranging population. Control measures will proceed as already described for the scenario of a captive cervid index case, with the exception that the initial five-mile radius surveillance zone will be drawn around the location from which the first infected free-ranging cervid was found. Dramatically reducing the density of all free-ranging cervids (depopulation) will be triggered by the finding of a second CWD infected free-ranging cervid within that 79 mi^2 surveillance zone. If no additional infected free-ranging cervids are identified, surveillance will proceed as previously described (i.e., 15-mile radius surveillance zone established around index case location, voluntary deer check for at least three years, etc.).

- The finding of a CWD infected index case (either a captive cervid or a free-ranging cervid) will also trigger the following surveillance and control measures:

  - Heightened active surveillance statewide. The number of free-ranging deer tested per county will increase to 50, with this quota being sampled from each of the 99 Iowa counties. The majority of samples will be obtained during regular hunting seasons, with non-hunter harvested animals tested opportunistically as they become available.

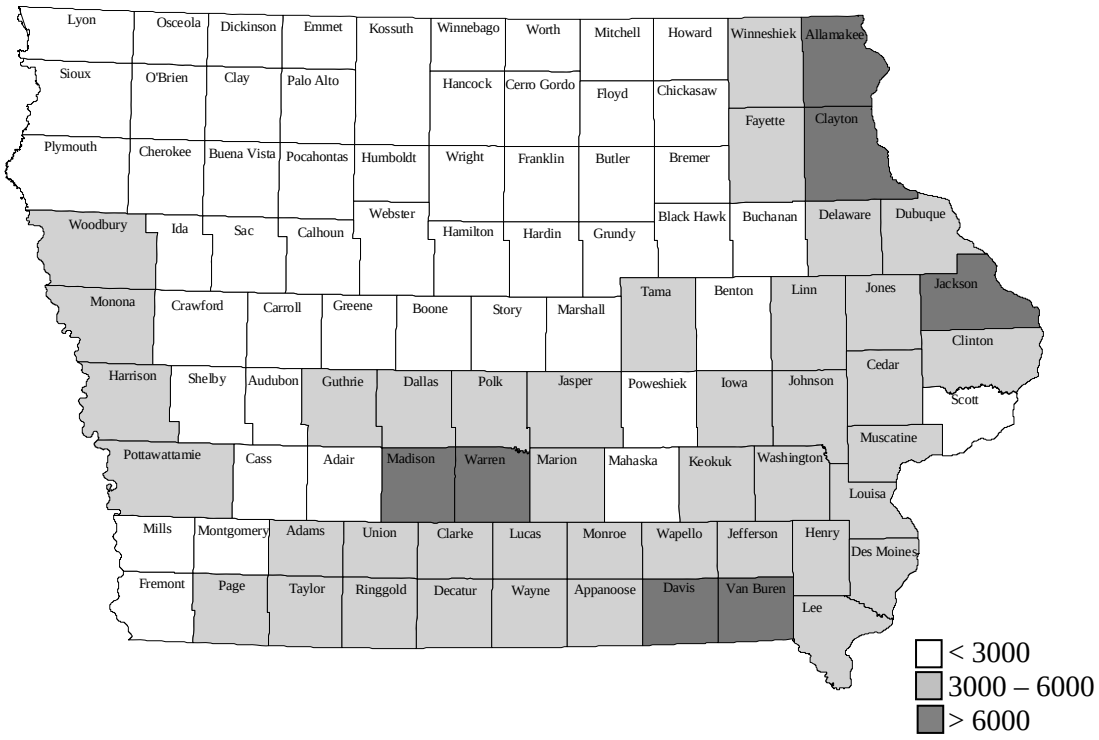
  - Only boned meat, capes, and antlers of harvested free-ranging cervids will be allowed to leave the 15-mile radius surveillance zone(s) surrounding each index case.

  - Rehabilitation of free-ranging cervids will become illegal statewide, as will transport of live free-ranging cervids anywhere in the state. Assistance of Law Enforcement and Iowa State Patrol and the local Sheriff's office will be sought for vigorous enforcement.

- With the cooperation of the Iowa Department of Transportation and local county road commissions, collection of road-killed cervids will be coordinated and carried out by Wildlife and Law Enforcement Division staff within the 15-mile radius surveillance zone(s) surrounding each index case. These animals will be tested for CWD by methods previously described, with the remains transported to selected state-owned lands for landfill, the NVSL or other Department approved facility for disposal.

APPENDIX A.

Figure 1. Estimated number of deer in each county based upon the average harvest from 2009 -2011.



APPENDIX A cont.

Table 1. Estimated number of deer in each county based upon the average harvest from 2009 to 2011.

		Harvest Estimates				Population
#	County	2009	2010	2011	Average	Estimate
1	Adair	1044	1358	1092	1165	2493
2	Adams	1377	1762	1289	1476	3160
3	Allamakee	3866	3974	3616	3819	8174
4	Appanoose	2743	2911	2389	2681	5739
5	Audubon	286	392	309	329	704
6	Benton	1214	1445	968	1209	2588
7	Black Hawk	720	874	637	744	1592
8	Boone	1146	1196	931	1091	2335
9	Bremer	1279	1657	1231	1389	2973
10	Buchanan	822	1051	727	867	1855
11	Buena Vista	287	320	255	287	615
12	Butler	993	1191	892	1025	2195
13	Calhoun	154	158	128	147	314
14	Carroll	321	479	333	378	808
15	Cass	829	1039	845	904	1936
16	Cedar	1847	1940	1474	1754	3754
17	Cerro Gordo	490	648	484	541	1157
18	Cherokee	635	700	546	627	1342
19	Chickasaw	1138	1346	1001	1162	2487
20	Clarke	1693	1969	1699	1787	3825
21	Clay	513	589	404	502	1075
22	Clayton	6029	5951	4729	5570	11923
23	Clinton	1685	1794	1434	1638	3506
24	Crawford	638	833	583	685	1466
25	Dallas	1440	1619	1381	1480	3168
26	Davis	3136	3214	2474	2941	6296
27	Decatur	2543	2659	2124	2442	5227
28	Delaware	1971	2246	1629	1949	4171
29	Des Moines	1518	1474	1260	1417	3034
30	Dickinson	258	330	216	268	574
31	Dubuque	2468	2735	2304	2502	5357
32	Emmet	251	316	209	259	554
33	Fayette	2451	2723	2081	2418	5177
34	Floyd	853	792	699	781	1673
35	Franklin	453	500	374	442	947
36	Fremont	1201	1570	1028	1266	2711
37	Greene	514	588	551	551	1179
38	Grundy	88	169	123	127	271

APPENDIX A cont.

39	Guthrie	2208	2674	2288	2390	5116
40	Hamilton	403	376	331	370	792
41	Hancock	279	305	224	269	577
42	Hardin	854	933	783	857	1834
43	Harrison	1554	2129	1519	1734	3712
44	Henry	1542	1551	1302	1465	3136
45	Howard	892	1021	798	904	1934
46	Humboldt	264	259	219	247	529
47	Ida	184	232	175	197	422
48	Iowa	1931	2240	1633	1935	4141
49	Jackson	3251	3679	2840	3257	6971
50	Jasper	1634	1647	1092	1458	3120
51	Jefferson	1701	1797	1472	1657	3546
52	Johnson	2526	2843	2068	2479	5307
53	Jones	2377	2702	2050	2376	5087
54	Keokuk	1622	1897	1275	1598	3421
55	Kossuth	426	516	392	445	952
56	Lee	2169	2449	1980	2199	4708
57	Linn	2537	2801	2227	2522	5398
58	Louisa	1446	1627	1264	1446	3095
59	Lucas	2326	2898	2409	2544	5447
60	Lyon	345	456	291	364	779
61	Madison	2659	3412	2702	2924	6260
62	Mahaska	1287	1571	1194	1351	2891
63	Marion	2246	2491	1958	2232	4777
64	Marshall	1040	1124	834	999	2139
65	Mills	1172	1270	1000	1147	2456
66	Mitchell	999	1038	826	954	2043
67	Monona	1402	1922	1394	1573	3367
68	Monroe	2389	2445	1870	2235	4784
69	Montgomery	1242	1634	1283	1386	2968
70	Muscatine	1720	1896	1506	1707	3655
71	O'Brien	319	402	313	345	738
72	Osceola	167	175	140	161	344
73	Page	1539	1880	1420	1613	3453
74	Palo Alto	365	411	309	362	774
75	Plymouth	494	730	565	596	1277
76	Pocahontas	143	223	140	169	361
77	Polk	1398	1610	1408	1472	3151
78	Pottawattamie	1761	2196	1728	1895	4057
79	Poweshiek	897	1028	791	905	1938
80	Ringgold	1669	2154	1663	1829	3915
81	Sac	323	413	290	342	732

APPENDIX A cont.

82	Scott	1190	1287	899	1125	2409
83	Shelby	379	630	420	476	1020
84	Sioux	353	381	279	338	723
85	Story	625	614	492	577	1235
86	Tama	1730	1949	1350	1676	3588
87	Taylor	2579	3153	2600	2777	5945
88	Union	1307	1732	1358	1466	3137
89	Van Buren	4541	4638	3656	4278	9158
90	Wapello	1704	1697	1339	1580	3382
91	Warren	3092	4017	3285	3465	7417
92	Washington	2298	2440	1778	2172	4649
93	Wayne	2377	2629	2179	2395	5127
94	Webster	830	866	646	781	1671
95	Winnebago	244	252	189	228	489
96	Winneshiek	2452	3063	2558	2691	5760
97	Woodbury	1475	2001	1343	1606	3439
98	Worth	347	386	293	342	732
99	Wright	385	446	328	386	827

APPENDIX B.

CWD Surveillance Plan – Statistical Sampling Protocol

Determining the appropriate number of deer to sample to detect CWD depends directly on 3 things:

1) The number of deer in the population (n).
2) The number of infected deer in the population (ni).
3) The desired probability of detection.

The probability of detecting the disease is:

$$P(\text{detection}) = 1 - P(\text{selecting a deer that doesn't have the disease})$$

where

$$P(\text{selecting a deer that doesn't have the disease}) = \prod_{i=1}^{s+1} \frac{(nu - i + 1)}{(n - i + 1)}$$

where nu = n – ni (nu is the number not infected)

For example if n=100 and the number of infected deer ni = 1 (and the number of uninfected deer = 99) then the probability that the first deer sample selected doesn't have the disease is: 99/100. The probability of the second deer selected not having the disease given that the first deer didn't have the disease is: 98/99. Thus the probability of not selecting a deer with the disease if 2 deer are sampled is: the product of not selecting the infected deer on the first try times the probability of not selecting the infected deer on the second try. The probability of detecting the disease then is 1 – the probability of not selecting an infected deer. This assumes that the probability of detecting the disease if an infected deer is selected is 100%.

Given an infection rate and desired probability of detection then appropriate sample sizes can be calculated for populations of a given size. Table 1 shows the result for 1 such combination. As you can see from the table as the size of the population increases the required sample sizes approaches some limit. This will happen for any level of infection and desired level of detection.

Table 1. Sample size needed to have a 99% probability of detecting CWD if 1% of the animals in the population are infected.

Population Size	Number with CWD	Sample Size Needed
100	1	99
200	2	180
500	5	300
1000	10	368

1500	15	395
2000	20	409
5000	50	438
10000	100	447
100000	1000	457
350000	3500	458

Another way to think of the sampling process is to fix the size of the population (n) and the desired probability of detection and look at the level of infection that could be detected given various sample sizes. Table 2 looks at this assuming that the statewide population is 350,000 and the desired probability of detection is 99%.

This means that a sample of 1000 deer gives us a 99% probability of detecting an infection rate of 0.45%. Doubling the sample size to 2000 deer gives us a 99% probability of detecting a 0.225% level of infection. The extra 1000 deer sampled only increases the level of infection that could be detected by about ¼ of 1 %.

Table 2. The level of infection that would be detected with 99% confidence in a statewide population of 350,000 animals for each sample size.

Sample Size	Infection Rate	Number of infected deer
100	4.50000%	15,750
150	3.00000%	10,500
190	2.40000%	8,400
250	1.80000%	6,300
500	0.90000%	3,150
1,000	0.45000%	1,575
2,000	0.22500%	788
5,000	0.09000%	315
10,000	0.04500%	158
25,000	0.01800%	63
50,000	0.00850%	30
100,000	0.00400%	14
346,400	0.00029%	1

2011/2012 Recommendation for Sampling

As shown above the appropriate sample size is determined by the level of infection that we wish to detect, the probability with which we want to detect it and the size of the population being examined. At the statewide level a sample of 458 would give us a 99% probability of detecting a 1% level of infection. A sample of 1000 would give us a 99% probability of detecting a 0.45% level of infection. Sampling at higher rates does not provide a marked improvement in the level of infection which could be detected. To go from a 99% probability of detecting a 1% level to a 99% probability of detecting a 0.10% level would require increasing the sample size to 4,571 deer.

Targeting the sample to the area of highest concern would reduce the number of samples needed and direct the sampling to the areas that at this time seem most likely to have CWD is important. Additionally collecting samples from adult bucks and road-killed deer is another strategy that would increase the probability of detecting CWD since these animals have been shown to have a higher prevalence rates in other states. There are currently 3 areas that should be of concern. The first is the area of the state next to Wisconsin, northern Illinois and Minnesota which are the closest CWD endemic areas to Iowa. Mitchell, Howard and Winneshiek border Minnesota. Allamakee borders Wisconsin and Minnesota, Clayton and Dubuque counties border Wisconsin. Jackson, Clinton and Scott counties border Illinois but are about equidistant from the endemic area in Wisconsin. Although Delaware County does not border any of the three states it is less than 10 miles from Wisconsin and samples should be collected from the portion of Delaware County adjacent to Clayton and Dubuque County. The second area that CWD seems most likely is those areas surrounding a captive cervid facility since CWD has been found in captive elk and in deer associated with captive elk in Missouri, Minnesota and Nebraska. The latest positive result in a captive facility in Missouri is 50 miles from the Iowa border. To date CWD has not been detected in wild deer in this area but more testing will occur in Missouri this fall. We will plan to test 500 deer north of the Missouri site in Wayne and Appanoose counties. To date CWD has not been detected in Iowa's captive whitetails but testing has not been extensive in these facilities in the past.

Monitoring captive deer and elk killed on hunting preserves should help show if any CWD positive deer are present. Additional sampling would not substantially increase the odds of detecting CWD if it is present since a large proportion of a small population would need to be examined (see Table 1). For example if the population of deer in and around the captive facility is 200 we would need to examine 180 of them to have a 99% chance of detecting a 1% level of infection.

In the 12 counties near Wisconsin, Illinois, Minnesota and Missouri we can use the reported harvest over the last 3 years to estimate the size of the population in each county and within the 9 county area as a whole (Table 3). Using this estimate for population size we would need to sample about 450 deer in each county to have a 99% probability of detecting CWD in each county if the infection rate is 1%. Or we could sample about 460 deer in the 12 county area if we assumed that dispersal and infection is equally likely in the 12 counties.

If we sample 500 deer from each county or pair of counties (2,500 deer total in the 10 northeast counties and 500 from the 2 counties in southern Iowa) that would give us a 99% probability of detecting a 1% infection rate in each county or set of counties and a 99% probability of detecting a 0.18% infection rate in the 10 county area in northeast Iowa. Combined with the sampling in Wisconsin, Illinois, Minnesota and Missouri this should give us a clearer (but not definitive) picture of whether CWD from the endemic area in Wisconsin, Illinois or Minnesota has reached Iowa or if CWD exists in the deer population near Missouri.

Table 3. Harvest, estimated population size and sample size needed to have a 99% probability of detecting CWD if the infection rate is 1%.

	Estimated harvest				Estimated	
				3 year	pre-hunt	Sample
County	**2008**	**2009**	**2010**	**average**	**Population**	**Size**
Allamakee	4,009	3,866	3,974	3,950	8,455	444
Clayton	6,739	6,029	5,951	6,240	13,357	449
Dubuque & Delaware	4,743	4,439	4,981	4,721	10,106	449
Jackson, Clinton & Scott	5,654	5,551	5,768	5,658	12,111	451
Mitchell, Howard & Winneshiek	5,348	5,120	5,540	5,336	11,423	451
Appanoose & Wayne	4,710	4,343	5,122	4,725	10,115	449
Total	**31,203**	**29,348**	**31,336**	**30,630**	**65,567**	**457**

The recommended 2011 - 2012 CWD surveillance proposal is to collect 3,900 samples by:

1. **Targeting the 10 counties in northeast Iowa and two southern Iowa counties to collect CWD samples from about 2,500 deer in northeast Iowa and 500 in southern Iowa (total 3,000 samples).**

2. **Collecting roadkilled deer across the state, emphasizing spring and fall collection periods, beginning in March of 2011 and again in October. The goal will be to collect about 1000 samples (statewide) during this period. In the event that the goal for the number of samples from roadkilled deer is not met, hunter killed deer will be used to achieve the goal.**

3. **Relying on the mandatory reporting for shooting preserves.**

4. **Increasing the level of awareness of the general public and other DNR bureaus so that more deer with clinical signs of CWD that are observed by the public will be examined.**

APPENDIX C.

IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP
CHRONIC WASTING DISEASE (CWD) RULES

21—64.104(163) Definitions. Definitions used in rules 64.104(163) through 64.119(163) are as follows:

"Accredited veterinarian" means a veterinarian approved by the deputy administrator of veterinary services, Animal and Plant Health Inspection Service (APHIS), United States Department of Agriculture (USDA), and the state veterinarian in accordance with Part 161 of Title 9, Chapter 1, of the Code of Federal Regulations, revised as of July 21, 2006, to perform functions required by cooperative state/federal animal disease control and eradication programs.

"Adjacent herd" means one of the following:

1. A herd of Cervidae occupying premises that border an affected herd, including herds separated by roads or streams.
2. A herd of Cervidae occupying premises that were previously occupied by an affected herd within the past four years as determined by the designated epidemiologist.

"Affected cervid herd" means a cervid herd from which any animal has been diagnosed as affected with CWD and which has not been in compliance with the control program for CWD as described in rules 64.104(163) through 64.119(163).

"Approved laboratory" means an American Association of Veterinary Laboratory Diagnosticians (AAVLD) accredited laboratory or the National Veterinary Services Laboratory, Ames, Iowa.

"Certificate" means an official document, issued by a state veterinarian or federal animal health official or an accredited veterinarian at the point of origin, containing information on the individual identification of each animal being moved, the number of animals, the purpose of the movement, the points of origin and destination, the consignor, the consignee, and any other information required by the state veterinarian.

"Certified CWD cervid herd" means a herd of Cervidae that has met the qualifications for and has been issued a certified CWD cervid herd certificate signed by the state veterinarian.

"Cervidae" means all animals belonging to the Cervidae family.

"Cervid CWD surveillance identification program" or *"CCWDSI program"* means a CWD surveillance program that requires identification and laboratory diagnosis on all deaths of Cervidae 16 months of age and older including, but not limited to, deaths by slaughter, hunting, illness, and injury. A copy of approved laboratory reports shall be maintained by the owner for purposes of completion of the annual inventory examination for recertification. Such diagnosis shall include examination of brain and any other tissue as directed by the state veterinarian. If there are deaths for which tissues were not submitted for laboratory diagnosis due to postmortem changes or unavailability, the department shall determine compliance.

"Cervid dealer" means any person who engages in the business of buying, selling, trading, or negotiating the transfer of Cervidae, but not a person who purchases Cervidae

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exclusively for slaughter on the person's own premises or buys and sells as part of a normal livestock production operation.
"Cervid herd" means a group of Cervidae or one or more groups of Cervidae maintained on common ground or under common ownership or supervision that are geographically separated but can have interchange or movement.
"Cervid herd of origin" means a cervid herd, or any farm or other premises, where the animals were born or where they currently reside.
"Chronic wasting disease" or *"CWD"* means a transmissible spongiform encephalopathy of cervids.
"CWD affected" means a designation applied to Cervidae diagnosed as affected with CWD based on laboratory results, clinical signs, or epidemiologic investigation.
"CWD exposed" or *"exposed"* means a designation applied to Cervidae that are either part of an
affected herd or for which epidemiological investigation indicates contact with CWD affected animals or contact with animals from a CWD affected herd in the past five years.
"CWD susceptible Cervidae" means whitetail deer, blacktail deer, mule deer, red deer, elk, moose, and related species and hybrids of these species.
"CWD suspect" or *"suspect"* means a designation applied to Cervidae for which laboratory evidence or clinical signs suggest a diagnosis of CWD but for which laboratory results are inconclusive.
"Designated epidemiologist" means a veterinarian who has demonstrated the knowledge and ability to perform the functions required under these rules and who has been selected by the state veterinarian.
Ch 64, p.2 IAC
"Group" means one or more Cervidae.
"Individual herd plan" means a written herd management and testing plan that is designed by the herd owner, the owner's veterinarian, if requested, and a designated epidemiologist to identify and eradicate CWD from an affected, exposed, or adjacent herd.
"Monitored CWD cervid herd" means a herd of Cervidae that is in compliance with the CCWDSI program as defined in this rule. Monitored herds are defined as one-year, two-year, three-year, four-year, and five-year monitored herds in accordance with the time in years such herds have been in compliance with the CCWDSI program.
"Official cervid CWD test" means an approved test to diagnose CWD conducted at an official laboratory.
"Official cervid identification" means one of the following:
1. A USDA-approved identification ear tag that conforms to the alphanumeric national uniform ear tagging system as defined in 9 CFR Part 71.1, Chapter 1, revised as of July 21, 2006.
2. A plastic or other material tag that includes the official herd number issued by the USDA, and includes individual animal identification which is no more than five digits and is unique for each animal.

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3. A legible tattoo which includes the official herd number issued by the USDA, and includes individual animal identification which is no more than five digits and is unique for each animal.
4. A plastic or other material tag which provides unique animal identification and is issued and approved by the North American Elk Breeders Association.
5. A plastic or other material tag which provides unique animal identification and is issued and approved by the North American Deer Farmers Association.
"Permit" means an official document that is issued by the state veterinarian or USDA area veterinarian-in-charge or an accredited veterinarian for movement of affected, suspect, or exposed animals.
"Quarantine" means an imposed restriction prohibiting movement of cervids to any location without specific written permits.
"State" means any state of the United States; the District of Columbia; Puerto Rico; the U.S. Virgin Islands; or Guam.
"Traceback" means the process of identifying the herd of origin of CCWDSI-positive animals, including herds that were sold for slaughter.

21—64.105(163) Supervision of the cervid CWD surveillance identification program. The state veterinarian's office will conduct an annual inventory of Cervidae in a herd enrolled in the CCWDSI program.

21—64.106(163) Surveillance procedures. For cervid herds enrolled in this voluntary certification program, surveillance procedures shall include the following:
64.106(1) *Slaughter establishments.* All slaughtered Cervidae 16 months of age and older must have brain tissue submitted at slaughter and examined for CWD by an approved laboratory. This brain tissue sample will be obtained by a state or federal meat inspector or accredited veterinarian on the premises at the time of slaughter.
64.106(2) *Cervid herds.* All cervid herds must be under continuous surveillance for CWD as defined in the CCWDSI program.
64.106(3) *Identification.* All cervid animals must be identified with two forms of official identification. Cervid animals identified with a tattoo must have a second visual form of official identification.

21—64.107(163) Official cervid tests. The following are recognized as official cervid tests for CWD:
1. Histopathology.
2. Immunohistochemistry.
3. Western blot.
4. Negative stain electron microscopy.
5. Bioassay.
6. Any other tests performed by an official laboratory to confirm a diagnosis of CWD.

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21—64.108(163) Investigation of CWD affected animals identified through surveillance. Traceback must be performed for all animals diagnosed at an approved laboratory as affected with CWD. All herds of origin and all adjacent herds having contact with affected animals as determined by the CCWDSI program must be investigated epidemiologically. All herds of origin, adjacent herds, and herds having contact with affected animals or exposed animals must be quarantined.

21—64.109(163) Duration of quarantine. Quarantines placed in accordance with these rules shall be removed as follows:
1. For herds of origin, quarantines shall be removed after five years of compliance with rules 64.104(163) through 64.119(163).
2. For herds having contact with affected or exposed animals, quarantines shall be removed after five years of compliance with rules 64.104(163) through 64.119(163).
3. For adjacent herds, quarantines shall be removed as directed by the state veterinarian in consultation with the epidemiologist.

21—64.110(163) Herd plan. The herd owner, the owner's veterinarian, if requested, and the epidemiologist shall develop a plan for eradicating CWD in each affected herd. The plan must be designed to reduce and then eliminate CWD from the herd, to prevent spread of the disease to other herds, and to prevent reintroduction of CWD after the herd becomes a certified CWD cervid herd. The herd plan must be developed and signed within 60 days after the determination that the herd is affected.
The plan must address herd management and adhere to rules 64.104(163) through 64.119(163). The plan must be formalized as a memorandum of agreement between the owner and program officials, must be approved by the state veterinarian, and must include plans to obtain certified CWD cervid herd status.

21—64.111(163) Identification and disposal requirements. Affected and exposed animals must remain on the premises where they are found until they are identified and disposed of in accordance with direction from the state veterinarian.

21—64.112(163) Cleaning and disinfecting. Premises must be cleaned and disinfected under state supervision within 15 days after affected animals have been removed.

21—64.113(163) Methods for obtaining certified CWD cervid herd status. Certified CWD cervid herd status must include all Cervidae under common ownership. The animals that are part of a certified herd cannot be commingled with other cervids that are not certified, and a minimum geographic separation of 30 feet between herds of different status must be maintained in accordance with the USDA Uniform Methods and Rules as defined in APHIS Manual 91-45-011, revised as of January 22, 1999.
A herd may qualify for status as a certified CWD cervid herd by one of the following means:
64.113(1) Purchasing a certified CWD cervid herd. Upon request and with proof of purchase, the department shall issue a new certificate in the new owner's name. The

anniversary date and herd status for the purchased animals shall be the same as for the herd to which the animals are added; or if part or all of the purchased herd is moved directly to premises that have no other Cervidae, the herd may retain the certified CWD status of the herd of origin. The anniversary date of the new herd is the date of the most recent herd certification status certificate.
64.113(2) Upon request and with proof by records, a herd owner shall be issued a certified CWD cervid herd certificate by complying with the CCWDSI program for a period of five years.

21—64.114(163) Recertification of CWD cervid herds. A herd is certified for 12 months. Annual inventories conducted by state veterinarians are required every 9 to 15 months from the anniversary date. For continuous certification, adherence to the provisions in these rules and all other state laws and rules pertaining to raising cervids is required. A herd's certification status is immediately terminated and a herd investigation shall be initiated if CWD affected or exposed animals are determined to originate from that herd.

21—64.115(163) Movement into a certified CWD cervid herd.
64.115(1) Animals originating from certified CWD cervid herds may move into another certified CWD cervid herd with no change in the status of the herd of destination.
64.115(2) The movement of animals originating from noncertified or lesser status herds into certified CWD cervid herds will result in the redesignation of the herd of destination to the lesser status.

21—64.116(163) Movement into a monitored CWD cervid herd.
64.116(1) Animals originating from a monitored CWD cervid herd may move into another monitored CWD cervid herd of the same status.
64.116(2) The movement of animals originating from a herd which is not a monitored CWD cervid herd or from a lower status monitored CWD cervid herd will result in the redesignation of the herd of destination to the lesser status.

21—64.117(163) Recognition of monitored CWD cervid herds. The state veterinarian shall issue a monitored CWD cervid herd certificate, including CWD monitored herd status as CWD monitored Level 1 during the first calendar year, CWD monitored Level 2 during the second calendar year, CWD monitored Level 3 during the third calendar year, CWD monitored Level 4 during the fourth calendar year, CWD monitored Level 5 during the fifth calendar year, and CWD certification at the completion of the fifth year and thereafter.

21—64.118(163) Recognition of certified CWD cervid herds. The state veterinarian shall issue a certified CWD cervid herd certificate when the herd first qualifies for certification. The state veterinarian shall issue a renewal form annually.

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APPENDIX D.

Iowa CWD Program Proposed Changes for Importation of Cervids

The Department of Agriculture and Land Stewardship has proposed an amendment that changes the time period for which an out-of-state Cervidae herd must be monitored from three years to five years. The proposed amendment also makes technical clarifications regarding the certificate of veterinary inspection for cervidae other than chronic wasting disease susceptible cervidae. These changes have been approved by the Farm Deer Council.

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APPENDIX E.

Iowa's Chronic Wasting Disease (CWD) Voluntary Program:

As of June 1, 2010, the Iowa Department of Agriculture & Land Stewardship has 157 farm deer herds enrolled in Iowa's Chronic Wasting Disease Program. They are as follows:

101 Whitetail (only) Deer Producers
38 Elk
5 Deer & Elk (Both) Producers
11 County Conservation Boards
2 Mini Zoos

There are a total of 5,049 Cervidae in Iowa's CWD Program:

3,734 = Whitetail Deer
1,293 = Elk
21 = Mule Deer
1 = Fallow Deer

In 2009, Iowa permitted in from out of state 190 whitetail deer (60 into hunting preserves) and 35 elk from out of state (7 into hunting preserves).

Since 2002, the Iowa Department of Agriculture & Land Stewardship with the Chronic Wasting Disease Program has submitted 3,731 CWD laboratory submissions. To date, we have not received any positive reports.