Plan for Assisting States, Federal Agencies, and Tribes in Managing Chronic Wasting Disease in Wild and Captive Cervids

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Task Force Representation

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- Agricultural Research Service
- Animal and Plant Health Inspection Service
- Cooperative State Research, Education, and Extension Service
- Forest Service

U.S. Department of the Interior
- Bureau of Indian Affairs
- Bureau of Land Management
- National Park Service
- Fish and Wildlife Service
- Geological Survey

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Wisconsin Department of Natural Resources
Wyoming Game and Fish Department
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I. INTRODUCTION

In the late 1960s, a clinical syndrome seen in captive mule deer came to be known as "chronic wasting disease" (CWD). This syndrome was identified as a transmissible spongiform encephalopathy (TSE) in 1978. In the early 1980's, CWD was identified in free-ranging deer and elk in northeastern Colorado and southeastern Wyoming. In May 2001, CWD was confirmed in a free-ranging mule deer that had been harvested in November 2000 in the southwestern corner of Nebraska adjacent to Colorado and Wyoming. In this so-called "endemic area" of some 20,000 square miles, infection rates range from more than 10 percent of white-tailed and mule deer in the most infected areas to 1 percent or less of all elk in the endemic area. CWD has also been diagnosed in farmed elk herds. The first report of a farmed elk with CWD came from Saskatchewan in 1996, and in 1997 another case was identified on a South Dakota elk farm. Since that time, additional positive farmed elk herds have been found in South Dakota, Nebraska, Colorado, Oklahoma, Montana, Kansas, and Alberta (most of these herds have been depopulated).

For decades, CWD was considered a western concern, because it had been found in captive or free-ranging cervids (a member of the deer family) only in States west of the Mississippi River. However, recent events including the recognition of the presence of CWD in free-ranging deer in Wisconsin and New Mexico, and the transport of CWD-exposed captive elk to numerous States across the country clearly show that CWD must be dealt with on a national basis. An effective national control program for CWD in free-ranging and captive cervids is urgently needed to prevent its introduction into new areas and to eliminate or control CWD where it already occurs. Several States have established CWD control programs in free-ranging and captive cervids, and State agencies and universities have developed much of the current information regarding the disease. However, lack of resources in some States and inconsistencies among the approaches and standards for disease control underscore the need for assistance in developing an effective national approach to CWD control. Federal assistance can help resolve these problems.

The Federal government must cooperate with State wildlife management and animal health agencies, Tribal governments, and non-governmental producers and wildlife organizations to develop synergistic CWD research and control programs. There already is a history of State-Federal cooperation in dealing with CWD in both captive and free-ranging cervids; this relationship must be expanded to include additional Federal and State agencies that have existing authority, responsibility, and capability to control CWD. A number of Federal agencies within the U.S. Department of the Interior (DOI) and the U.S. Department of Agriculture (USDA) have responsibilities for issues presented by CWD.

State, Federal, and Tribal agencies have statutory authority to respond to CWD in infected farmed/captive cervids and wildlife. In exercising the regulatory authority found in the *Code of Federal Regulations* and the *United States Code*, Federal agencies must comply with the National Environmental Policy Act. When Federal agencies need to respond quickly with emergency management actions, they have options of using categorical exclusions, environmental assessments, or alternative arrangements with the Council of Environmental Quality. If the proposed emergency actions are expected to have significant impacts on the environment, then an environmental impact assessment would also be conducted as a follow-up action.

The primary Federal role will be to provide coordination and assistance with research, surveillance, disease management, diagnostic testing, technology, communications, information dissemination, education, and funding for State CWD programs. Federal agencies will provide tools and financial assistance to States and help develop consensus-based approaches to CWD control. In May 2002, an

effort to address CWD issues was initiated among USDA, DOI, and State wildlife management and agriculture agencies. A CWD Task Force was formed to ensure that Federal and State agencies cooperate in the development and implementation of an effective national CWD program. This report presents the plans of the Task Force to coordinate Federal and State efforts and identify necessary actions in support of State, Federal, and Tribal CWD control efforts. A subsequent plan will be developed to implement the recommendations of this report.

II. WORKING GROUPS AND ISSUES:

Communications Working Group: The goal of this working group is to create an effective mechanism for making scientific information accessible to all parties dealing with the CWD issue. USDA, DOI, and other Federal and State agencies have been engaged in ongoing communications efforts as part of their CWD activities. The communications plan is not meant to reflect all the activities of all the entities involved in this issue, but to outline a national program of outreach on this disease and its management to significant target audiences.

Scientific and Technical Information Dissemination Working Group: The goal of this working group is to provide a mechanism for making CWD information accessible to all State and Federal agencies and others involved in the CWD problem. The plan calls for the creation of uniform standards for CWD data collection and transfer, making available hardware, software, and data management support to States, and providing for information sharing among all State and Federal groups dealing with CWD. The primary goals of this working group are to define strategies for dealing with CWD by: 1) providing access to common scientific and technical information in a partner-based data system; 2) integrating CWD data from State and Federal agencies, and others into the National Biological Information Infrastructure (NBII) Wildlife Disease Information Node (WDIN); 3) working with States to create data standards that will allow interoperability with existing CWD data sets; and 4) providing wildlife managers and veterinarians with near real-time access to CWD data and other critical information.

Diagnostics Working Group: The goals of this working group are to: 1) develop better tests for CWD, both postmortem and live-animal, understanding that the tests must be accurate, reasonably fast, and inexpensive; 2) produce a survey of available laboratory capacity for processing CWD samples and a projection of necessary capacity to support effective CWD programs; 3) establish a consensus standard on how to accredit laboratories to conduct CWD testing; and 4) describe the time requirements for obtaining results from the various tests so that CWD programs can incorporate accurate assumptions about the “turnaround time” needed.

Disease Management Working Group: The goals for this working group are to identify best practices for herd management techniques that can help prevent the introduction of CWD into a herd, and prevent CWD spread from an infected herd. The group also addressed how to prevent contact between free-ranging and captive animals, safe carcass disposal, herd population data management, animal identification, effectiveness of indemnity, culling versus eradication, and other issues.

Research Working Group: The goals of this working group are to identify and prioritize critical research needs in areas such as live-animal tests, genotyping, transmissibility, and bioassays. It also worked to identify methods to detect the presence and persistence of the agent in the environment and to develop methods for decontamination. The group also addressed epidemiology, disease management, and human dimensions of CWD.

Surveillance Working Group: The goal of this working group is to develop consensus standards for adequate surveillance in both captive and free-ranging herds, and describe best practices and techniques for targeted, hunter harvest, and outbreak surveillance.

III. ACTION PLANS:

A. Communications

1. Overview

This communications plan outlines a national program of public information outreach on CWD and its management to significant target audiences that reflects the breadth and depth of the entities dealing with this disease. The plan compliments ongoing Federal, State, Tribal, and local communications efforts as a part of their CWD activities. A key element of the plan will be developing and sharing information. The actions in this plan should be coordinated by a public affairs specialist working with all agencies and people involved in CWD research and management. Some projects may be best undertaken by individual entities and those decisions would be made by the main communications committee as needed, in cooperation with the States.

2. Goals

- Goal 1: Increase awareness of Federal and State CWD efforts.
- Goal 2: Educate target audiences about CWD.
- Goal 3: Provide accepted and updated scientific information.
- Goal 4: Provide updates on advances in CWD management and control.
- Goal 5: Provide scientific and technical training information to State, Federal, and Tribal employees on CWD management and surveillance methods.

3. Audiences

The target audiences for these activities include the following, in impacted or potentially impacted jurisdictions, and eventually in all States with active surveillance:

- Media;
- State and Federal cooperators such as wildlife, conservation, land management, agriculture, forestry, and natural resource agencies;
- Consumptive and non-consumptive users of wildlife and associated businesses;
- Captive cervid industry; scientific community, general public; and
- State and local officials, policy makers, Tribes, and communities.

The principle message of this communications campaign is that all concerned entities are working together to coordinate efforts to control and manage CWD in free-ranging and captive populations of cervids and where possible to eradicate the disease or prevent its spread.

4. Actions

Communications activities by many agencies have been ongoing; the list below is exemplary of work that has already been done. Activities are divided into three main categories: production of information materials, identification of events, and distribution of information.

- Action Item 1 – Production of Materials: Fact sheets on general CWD disease information, CWD funding, and Federal, State, and Tribal actions to address CWD will be updated and expanded to include information from all reliable sources. Other relevant fact sheet topics will be developed (including fact sheets on individual State programs and responses for CWD) as needed.
- Action Item 2 – Events and Distribution of Information: Working in concert with States, radio and public service announcements will be distributed to all affected States and Tribes with copies to all cooperators. Also provided are program management and training videos, and disease identification field guides. Information packets will be prepared and mailed to all agriculture extension agents and State Departments of Agriculture and Natural Resources agencies.

B. Scientific and Technical Information Dissemination

1. Overview

Management and dissemination of scientific and technical information is critical to States, Federal agencies, Tribes, and other groups involved in CWD issues. Although these entities will collect important data for their own use, there will be significant opportunities for resource sharing as well as assistance for data management and transfer, allowing analyses to be conducted on a nationwide basis. This Information Plan provides for the creation of uniform standards for data collection and transfer that will facilitate these activities. The availability of one system rather than multiple systems that may not be compatible with each other will allow economies of scale for the proposed activities to be undertaken at a national level. States that have not yet incurred expenses in developing a local system will be provided with internet-based applications, and States with pre-existing systems will also receive assistance. Further, data and information from all parties will be handled to assure appropriate intellectual property rights and confidentiality.

The U.S. Geological Survey's NBII will be used to accomplish the efforts outlined in this plan. The NBII is an electronic information network that provides timely and effective access to biological data and information on the nation's plants, animals, and ecosystems through "Nodes," which can be used for scientific activities, education, and informed decision-making. Since NBII technical and informational infrastructures are already in place, the new NBII Wildlife Disease Information Node (WDIN) can serve as an effective mechanism for providing access to Internet-based CWD information. Although the WDIN was initially established as a prototype to focus on CWD data from Wisconsin collaborators and the National Wildlife Health Center located in Wisconsin, this Node will be expanded to meet the needs of this plan. Most data will be provided by the States; this Node will explicitly support State managers in addressing CWD data needs. The Node will also provide links to other available CWD databases and allow "one stop shopping" for technical information, including geospatial information, research, monitoring, and surveillance results. This will allow State and Federal agencies, Tribes, and the public to obtain near real-time data on CWD. The target audience and message are identical to those of the Communications Plan.

2. Goals

To define strategies for dealing with CWD by:

- Goal 1: Providing access to common scientific and technical information in a partner-based data system;

- Goal 2: Integrating CWD data from State and Federal agencies, Tribal and land managers, and other sources into the WDIN;
- Goal 3: Working with States to create data standards that will allow interoperability with existing CWD data sets and provide confidentiality of data to data providers as needed;
- Goal 4: Providing wildlife managers and veterinarians with near real-time access to CWD data and other critical information, including available test results, Geographic Information System (GIS) analyses of CWD patterns, and predicting areas of potential risk;
- Goal 5: Providing a database system that can be used by all agencies for their own local use, but also as a central repository for nationwide analyses.

3. Actions

A repository for data will be collected through State and Federal agency CWD research, monitoring, and surveillance programs so that analyses can be conducted on a nationwide basis. Users will benefit from an integrated information system on all aspects of CWD and other relevant TSE information for CWD, including biology, diagnosis, and control issues. In all activities, priority will be given to the transfer of information resources and funding to create an integrated CWD data system.

Action Item 1 - Data Storage

- Establish a robust database that can accommodate testing results as well as research, monitoring, and surveillance data from State and Federal agencies;
- Develop a data import system to allow State and Federal agencies to enter their current and archival data;
- Develop data collection and management standards in cooperation with State and Federal agencies;
- Develop a certification and quality control system;
- Provide to States a system for tracking CWD samples from collection through laboratory testing.

Action Item 2 - Integrated Information System

- Conduct a thorough literature review focusing on CWD;
- Assemble information on biology and management of wildlife species at risk for developing CWD;
- Collect and assemble State, USDA, and other wild and captive herd data and make it Web accessible;
- Create a Web based system that will integrate information collected above;
- Catalog and provide Internet links to other Federal, State, and non-government organization CWD information resources, including scientific libraries.

Action Item 3 - Long-term Activities

- Maintain databases and services described above;
- Integrate all available State and other data into the NBII WDIN.

C. Diagnostics

1. Overview

CWD assays currently in use and development are, and will be, validated only for epidemiological or disease control purposes. Immunohistochemistry (IHC) will be the source of validated results in the

short-term and will be the gold-standard test long-term. High-throughput assays may be available for use in laboratories (not animal-side) in the fall 2002 hunting/control season on an experimental basis, but will not be validated prior to the season. The assays may be validated for use by early 2003, allowing retrospective use of their results. Laboratory capacity should be sufficient using approved State/university laboratories as part of a network. However, as the volume and rate of sample submission is uncertain, reporting results may be delayed. Laboratories should be approved first to use the standardized IHC, which will allow them to assist in validating, and then use high-throughput assays. Samples collected may exceed diagnostic needs until research will assist in the selection of tissues for optimum testing; in turn, the samples may be applied to further research and management strategies. Funding for testing populations, new assay validation, and laboratory space/equipment is needed.

2. Goals

- Goal 1: To provide reliable information on the disease and infection status in free-ranging and captive cervids for herd certification programs, epidemiological investigations, and control and management activities. This requires laboratory capacity sufficient to run a meaningful number of validated, standardized assays relative to the sampled population, in a useful timeframe.

3. Actions

- Action Item 1 – Establish sufficient testing capacity: Official testing needed in the next 12 months and beyond can be accomplished by establishing and supporting (including by direct funding of laboratory testing and equipment) a network of the approximately 15 well-established State/university veterinary diagnostic laboratories already selected or currently being selected for standardized IHC testing. Fifteen laboratories is a goal for January 2003; additional laboratories will be added during 2003. Sample prioritization will be critical and should be agreed upon in principle prior to fall 2002. This could be implemented by the National Veterinary Services Laboratories either as the testing contract holder or laboratory network coordinator in collaboration with submitting State authorities and testing laboratories.
- Action Item 2 – Continue Using IHC: Approximately 100 assays/day/machine can be run using IHC. The use of 15 laboratories with two machines each would allow 750,000 samples per year to be tested, or the estimated 177,000 surveillance samples to be tested in three months for rapid management action.
- Action Item 3 – Assure Sample Quality: Captive cervid owners and the general hunting public should not collect samples for "official tests." Sample collector training should be professionally conducted. Laboratory technicians must be vigilant in identifying and rejecting inappropriate samples. Laboratories not performing IHC may contribute to the testing strategy through quality sample preparation. If a laboratory's testing protocol uses high throughput assays only for some samples, any questionable sample should be subjected to IHC.
- Action Item 4 – Assist in Validation and Apply High Throughput Screening Tests: A variety of high throughput assays are currently being developed or validated with the intent of commercializing them. The evaluation of high-throughput TSE tests already used for bovine spongiform encephalopathy in European cattle should be completed rapidly. A tissue repository should be established from diagnostic samples to evaluate proposed tests. Some IHC laboratories will run pre-license high-throughput assays in parallel, providing validation data, and may use the new assays as their primary screening assay post-license. Fifteen laboratories running high throughput assays could perform 7.5 million tests each year.

- Action Item 5 – Assist in Addressing Other Areas of Testing: Development and validation of a live-animal CWD test may result from current and new research or from testing the likely target tissue from this season's carcasses collected as diagnostic samples. New assays may be applied to research and management questions related to other animal samples.

D. Disease Management

1. Overview

The goals of CWD management are to prevent the introduction of CWD into new areas and to eliminate CWD where it presently occurs. Elimination is most feasible in captive populations. A proposed USDA program has been designed with the States to accomplish that goal. In the wild, elimination is most feasible with early detection of new disease foci. With new foci, there may be time to stop disease transmission, reduce movement of infected animals, and minimize environmental contamination. If elimination is not possible, the goal is to control and limit the spread of the disease. Control and limitation of the disease's spread is most appropriate in endemic areas where the disease has maintained itself for years. Currently, the States, DOI, and USDA are actively pursing this goal.

A key element in the management of this disease is the development of coordinated, science-based CWD plans tailored individually to meet the needs of State, Tribal, and Federal agencies. Ideally, such plans would include both farmed and free-ranging populations, include all stakeholders, and cover multiple jurisdictions (especially when jurisdictions share an affected population). Plans could follow a standard outline of basic components including: objectives, management tools, management of contaminated environments, monitoring of results, restoration plans, and budget. Plans would form the basis for funding, for public responsibility and accountability, and for measuring results. Because such coordinated plans may be difficult to prepare in a short timeframe, a process for immediate funding for initial response for newly identified outbreaks should also be available. It is anticipated that there will be approximately five new outbreaks each year for the next three years.

CWD management plans will vary depending upon such factors as length of time the disease has been present, affected species, population density, location, resources, and human dynamics. States and other entities may use different strategies for different combinations of these factors. The key challenge is to learn as quickly as possible how effective control or elimination strategies may be. As research knowledge provides new diagnostic and management tools, the challenge will be to continually improve CWD management strategies.

2. Goals

- Goal 1 – Prevention: To maintain a population or an area free from CWD.
- Goal 2 – Elimination: To remove CWD and prevent its reintroduction.
- Goal 3 – Maintenance: To keep CWD below a certain level of prevalence.
- Goal 4 – Containment: To keep CWD from spreading outside of an area.

3. Actions

Actions taken will vary with the individual situation and are presented here as potential components of a process rather in priority order.

- Action Item 1 – Disease Prevention: Entities without CWD should plan to prevent its introduction through movement restrictions, restrictions on baiting and feeding, risk assessments, population management, and information dissemination. Surveillance to allow early detection of the disease is essential in preventing inadvertent human-assisted or natural movement of affected animals.
- Action Item 2 – Management Techniques to Eliminate, Contain, or Control CWD: Where CWD has been identified, the following tools can be considered for use together or singly for use in a management response:

  Outbreak Surveillance: Surveillance establishes the prevalence, incidence, and distribution of the disease, and allows the evaluation of management actions.

  Population Reduction: Depopulation can be used for farmed cervids, or for free-ranging cervids in limited geographical areas. Reduction in population density can be used where CWD is already present or as a preventative measure. Targeted removal can reduce a specific subset of an affected population (such as yearling males that are naturally dispersing from a CWD area).

  Testing and Removal: Testing and removal can be used to remove CWD affected animals from a population. This approach may be appropriate only in limited situations.

  Therapeutics and Vaccines: These tools are not currently available. Much more research is required to develop these tools for use.

  Human Behavior: Restrictions on feeding or baiting of free-ranging cervids where appropriate, and regulations for the farmed cervid industry are all examples of management tools that may be used to control CWD.

  Habitat Modification: The manipulation of environmental factors could limit animal use of areas and potential exposure. Such tools may be useful in dealing with environmental contamination.

  Movement Restrictions: Agricultural and wildlife agencies should provide scientifically based recommendations for limiting animal movements to prevent the spread of CWD. Restrictions are already in place in some States (see Appendix I).
- Action Item 3 – Management of Farmed Deer and Elk: A proposed USDA program will restrict interstate movement in order to set basic minimum standards for State regulatory programs. The regulatory program provides certification status for producers who maintain herds for a minimum of five years with no evidence of the disease. Herd management plans are required for CWD positive and exposed herds. These plans include provisions for depopulation or quarantine, disposition of carcasses, decontamination, and future use of the premises. If animals are depopulated, the program provides indemnity.
- Action Item 4 – Carcass Disposal: Without an effective, rapid postmortem test, carcass disposal will remain a major element in increased surveillance or population reduction efforts. Rapid and accurate testing will permit presorting of carcasses for their most effective disposition. Federal funds may be used to purchase or lease capital-intensive equipment for disposal to be made available to States and other entities as needed.
- Action Item 5 – Monitoring, Measurement and Adaptive Management: Goals and measurement procedures should be developed in conjunction with coordinated management plans. Management actions should be monitored for results as well as for intended and unintended environmental impacts. Adaptive management approaches may prove to be effective in these activities.
- Action Item 6 – Environmental Decontamination: A major concern with CWD is the potential for indirect transmission through contamination of the environment through excretions, secretions, or the decomposition of infected animal carcasses. Management plans need to provide for decontamination as research provides tools and approaches.

- Action Item 7 – Restoration: A final phase of CWD management involves restoration of species and environment. Restoration is a critical part of gaining public approval for actions taken in controlling and/or eliminating the disease.

E. Research

1. Overview

Although State, Federal and university researchers have worked collaboratively to increase understanding of CWD since its discovery, there are significant knowledge gaps regarding the fundamental characteristics of this disease. These gaps impede the development of plans to control the disease, as effective management requires an understanding of the disease, its host, and human response to both. More research on the fundamental aspects of diagnostic methods, pathology, epidemiology of the disease, cervid ecology, and human dimensions is still needed. This research will be conducted through partnerships among universities, State, and Federal agencies that have demonstrated capacity to work on CWD. Key to controlling this disease will be the combination of research findings with an adaptive management approach that integrates monitoring of the disease and host, ecological modeling, and effective management actions.

2. Goals

- Goal 1 – Rapid Diagnostics: There is an urgent need for research to establish rapid diagnostic techniques in live animals, carcasses, and environmental samples.
- Goal 2 – Biology and Pathogenesis: Little is known about the biology and pathogensis of CWD, including how the disease agent enters the animal, how it multiplies in the body, how it causes disease, and how it is transmitted.
- Goal 3 – Management and Ecology of the Disease and the Host: There is a need to understand the interactions between host species ecology and CWD dynamics, and the implication of these interactions for disease management.
- Goal 4 – Human Dimensions: A better understanding of the attitudes of impacted publics is needed to develop effective communication/education strategies and disease management programs.

3. Actions

- Action Item 1: Evaluate existing diagnostic tests for accuracy and utility; improve accuracy, speed, and capacity of diagnostic tests, and establish a standardized yet flexible national sampling protocol for testing; develop tests that provide early detection of disease; develop a live animal test that is cost effective and can be applied in the field; and assess the feasibility of tests for environmental contamination.
- Action Item 2: Conduct research into the biology and pathology of CWD. Prioritized needs include: 1) describing the pathogenesis of CWD; 2) determining if different strains of CWD infect different cervids; 3) determining which species are susceptible to CWD, including cattle; 4) determining the routes of exposure, the rate of transmission, and the amount of agent needed to cause infection; 5) investigating the contribution of genetics to CWD susceptibility among cervid populations; and 6) developing prophylactic or treatment measures for both captive and free-ranging susceptible cervids.
- Action item 3: Conduct research into disease management and host ecology. Prioritized needs include: 1) developing and enhancing models of CWD dynamics; 2) evaluating host population

dynamics and dispersal and social behavior in relation to transmission; 3) developing a GIS that can elucidate patterns of disease–host population characteristics; 4) evaluating the effectiveness of CWD control or eradication strategies; 5) studying the ecological effects of reducing deer and elk populations in CWD affected areas; 6) determining persistence of the CWD agent in the environment; 7) developing methods to inactivate the CWD-agent in the laboratory and in the field; 8) correlating disease prevalence to cervid density; and 9) conducting research on methods of carcass disposal.

- Action Item 4: Conduct research into the human dimensions of CWD. Prioritized research needs include: 1) determining the attitudes, perceptions of risk, and information needs of affected human communities; 2) determining landowner and hunter willingness to participate in disease management programs; 3) determining the impact of CWD and CWD management on the economy and the social fabric of human communities; and 4) assessing communication and education strategies.

F. Surveillance

1. Overview

To find and monitor CWD in free-ranging populations, three types of surveillance are undertaken. Targeted surveillance is the collection of any cervid that exhibits clinical signs of CWD. This may be an important method on certain lands where harvest cannot easily be conducted. Hunter harvest surveillance is the collection of the heads of hunter-harvested cervids to test for CWD. Outbreak surveillance is the collection of specified numbers of animals to determine the rate of infection and the extent of the infected area identified through either targeted or hunter harvest surveillance.

The national surveillance plan for farmed cervid herds includes mandatory death reporting and CWD testing of all animals, except calves, that are slaughtered or die on the premises. The proposed farmed cervid surveillance program and the proposed surveillance program for wildlife are interdependent. Particular combinations of services will depend upon circumstances in each State. This plan will adjust services to support the particular needs and circumstances of CWD in each State or area.

Under the proposed program budget, USDA's goal is to begin its CWD eradication program from farmed elk and deer herds in the United States in fiscal year 2003. The proposed CWD program involves cooperative State programs with the major components for farmed elk and deer being: 1) surveillance, including diagnostic services; 2) indemnity for depopulated herds or animals; 3) certification for herds in which CWD has not been found; and 4) epidemiology and related services. As part of its surveillance program, the National Park Service (NPS) will continue its targeted surveillance and removal of cervids exhibiting clinical signs of CWD. NPS also will continue using live animal testing for deer in parks located in close proximity to confirmed CWD cases. DOI will cooperate with the States in hunter surveillance programs.

2. Goals

- Goal 1 – Sampling Plans: Develop sampling design that specifies numbers of animals to be sampled by area and year, and assist agencies with surveillance strategies.
- Goal 2 – Early Detection: For cervid populations and herds in which no infection has been detected, the primary surveillance objective is early detection of new CWD foci.
- Goal 3 – Determination of Prevalence Rates: For cervid populations in which infection has been detected, estimate CWD prevalence over time and space.

- Goal 4 – Epidemiological Investigations: Conduct surveillance to support research investigations and trace-back (tracing movement into the herd) or trace-forward (tracing movement out of the herd) efforts for the purpose of identifying transmission mechanisms.

3. Actions:

- Action Item 1 – Sample Collection for Disease Monitoring: Effective surveillance strategies that identify risk factors, enhance early detection, and support management programs will be developed. DOI and USDA will cooperate with the States in surveillance strategies. For areas with known CWD infections, estimates of disease prevalence can be used to judge the effectiveness of management actions and to evaluate disease dynamics in the context of ecological research questions. Surveillance activities are also needed to satisfy public and management information needs. The number of samples needed for such monitoring is estimated at 150,000 per year.
- Action Item 2: – Epidemiology: Actions involving epidemiological investigations will include identification of high risk and exposed animals, recording and mapping of premise locations, and development of herd plans for source or trace herds. Epidemiological investigations of free-ranging cervids that may pose a risk to farmed animals or may have been infected by exposure to infected farmed elk will also be developed by States in their management/action plans.

Appendix I State Regulations and Activities

In nine States, the State's Department of Agriculture (DOA), or equivalent, has jurisdiction over captive cervids. The Department of Fish and Game, or equivalent, has jurisdiction in seven States. Captive cervid farms are jointly managed by both agencies in 26 States. Regulations in addition to the standard regulations are in place in 49 States. These range from additional testing requirements to banning all cervid importations. Standard regulations include: 1) Certification of Veterinarian Inspection (CVI) (health certificate); 2) import permit; and 3) negative brucellosis and tuberculosis (TB) test (within 30-60 days of import). Twenty-nine States prohibit the importation of cervids from any county, region and/or State that is endemic for CWD; have regulations that can prohibit importation from endemic areas; require that the State exporting the cervid be enrolled in an official CWD monitoring and certification program; and/or require only that there has been no diagnosis of CWD in the originating herd or imported cervid. Seventeen States have banned all cervid imports. Twenty-eight States are currently in the process of developing new and/or additional CWD regulations. Twenty-three States perform captive cervid testing for CWD; 12 additional States are in the process of developing surveillance. Thirty-seven States perform CWD testing on free-ranging cervids; six additional States are in the process of developing surveillance.

Alabama	Department of Conservation and Natural Resources has jurisdiction. No cervid imports are allowed (imports have not been allowed for more than 30 years). The State performs testing on cervid deaths. In 2001, the State implemented hunter-harvested surveillance, and tested a random sample of more than 90 deer. The State plans to increase surveillance for the 2002 hunting season.
Alaska	Division of Agriculture is responsible for game farm permits and inspecting fencing. Division of Environmental Health is responsible for animal health regulations. On May 23, 2002, the State issued a moratorium on cervid importation for six months. Previous regulations required elk to have a special permit. The only captive cervids legally allowed are elk and reindeer. The State is drafting new regulations which will require captive cervids to be enrolled in a CWD monitoring program for a minimum of three years before importation. Recommendations have been made to test captive cervids.
Arizona	Game and Fish Department has jurisdiction. On May 18, 2002, the State issued an emergency statewide ban on the importation of all captive cervids. No cervid listed as restricted live wildlife under R12-4-406 shall be imported into Arizona. The emergency importation ban applies to cervids of the genus *Alces*, common name: moose; cervids of the genus *Odocoileus*, common name: white-tailed and mule deer; and cervids of the genus *Cervus*, common name: red deer and wapiti (elk), except that the species *Cervus nippon*, Nippon deer, is not restricted. Previous regulations required that imported cervids have individual ear tag identification numbers. Emergency and Regular rulemaking are currently underway to permanently ban cervid importation (Note: also being explored is a total ban on cervid possession by private game farms along with additions to the restricted live wildlife list to ban additional species of cervids). The anticipated effective date for emergency rulemaking is June 30, 2002; the anticipated effective date for the regular rulemaking is December 2002. Under the proposed emergency and regular rulemaking, the holder of a private game farm or zoo license will be required to submit the heads of all cervids that die on the licensee's property or in the licensee's control for CWD testing (Note: heads must be submitted within 72 hours of the time of death to the University of Arizona Veterinary Diagnostic Laboratory for analysis for CWD). The State has a CWD testing program for wildlife.
Arkansas	Fish and Game regulates imports relating to wildlife, Livestock and Poultry Commission regulates imports relating to livestock. The State is working on Memorandum of Agreement between the two agencies to delegate final permitting authority to Fish and Game. On May 16, 2002, the State enacted an emergency moratorium on the importation of cervids until further notice. The State is in the process of establishing a task force to identify protocols for CWD prevention and testing. A CWD testing program for wildlife will be implemented in the fall of 2002. Protocols have yet to be determined.
California	Department of Fish and Game (DFG) has authority over all captive cervids and issues the permits required for possession. Department of Food and Agriculture (DFA) becomes the lead over captive cervids only if a disease outbreak occurs which could impact livestock (TB and brucellosis). Fallow deer are permitted under a fallow deer farming permit and various exotic cervids are allowed under an exhibitors permit issue by DFG; no elk are permitted for importation and elk farms are prohibited; importers must have a completed Cervidae Importation Application approved by Wildlife Investigations Laboratory. No cervids are allowed for import that originate from CWD positive States, or have a history of contact with captive elk, or any other potential risk. No new regulations with regard to CWD are being discussed. CWD is listed by DFA as a reportable disease. The State is in the process of developing a slaughter

	surveillance program for farmed fallow deer. The State developed surveillance in 1999 for hunter killed, road kill and dead, and free-ranging mule deer; 432 samples were collected. The State plans to sample at least 300 each year. Michigan cervids require specific pre-entry requirements
Colorado	Division of Wildlife (DOW) regulates wildlife imports and has authority over commercially raised mule deer and other commercially raised wildlife species. DOW is the lead agency. DOA has authority over disease management and importation of alternative livestock (fallow deer and elk). Authority over possession of alternative livestock is shared. All cervids must be free of infectious and contagious disease; must be treated for internal/external parasites within 21 days prior to entry, must be marked with USDA official ear tag, and originate from a bovine TB-free accredited herd. All elk must test negative for evidence of red deer hybridization. Enrollment in 60-month surveillance program is required for importation and intrastate movement of captive cervids. The State bans movement of captive cervids out of endemic areas or off of quarantine facilities located outside of endemic areas. Captive cervid permit holders are given training in CWD specimen collection; mandatory surveillance is done on any elk death whether natural death, slaughter, or hunt park kill. CWD must be reported within 24 hours of diagnosis to DOW Veterinarian. Heads of deer and elk are collected from hunters in certain Game Management Units; more than 1,700 have been tested statewide and more than 10,000 have been tested from endemic areas. The State has culled and tested more than 200 wild deer.
Connecticut	Department of Environmental Protection and DOA have jurisdiction. No cervid imports are allowed. (Previously, no deer or elk were allowed; other cervids required a negative anaplasmosis/ blue tongue test). The State is working on more precise regulations.
Delaware	DOA has jurisdiction. Delaware only has two captive cervid facilities, one red deer, and one sika deer farm. No cervids may be imported from any State in which CWD has been diagnosed. The State is in the early stages of discussing new regulations regarding CWD and testing programs for captive cervids and wildlife.
Florida	Fish and Wildlife Conservation Commission regulates possession of captive cervids DOA oversees importation and health requirements. No cervids may be imported from States diagnosed with CWD (this prohibition will expire at end of June, 2002).
Georgia	DOA has authority over deer farms; Department of Natural Resources (DNR) approves deer farm facilities and oversees wildlife exhibitors and wild animal license holders. No white-tailed deer imports are allowed. State DOA, DNR and Southeast Cooperative Wildlife Disease Study met on May 29, 2002 and agreed that borders need to be closed to cervid importation. DOA will pass legislation prohibiting the importation of farmed deer; DNR will recommend prohibiting the importation of cervids for wild animal businesses. The State has a CWD testing program for wildlife.
Hawaii	DOA has authority over import, possession, and transfer of all cervids. Department of Land and Natural Resources, Division of Forestry and Wildlife regulates the possession of introduced Axis and Black-tailed deer on State lands. A special permit is required for elk and bison and axis deer for commercial use. Black-tailed deer and mule deer are permitted for research and exhibition by special permit. White-tailed deer are not allowed. The State has no specific CWD regulations. Entry permits are issued on case by case basis. The State most likely will not issue entry permits for elk or deer unless they originated from a herd that has been CWD monitored for at least five years. Forestry and Wildlife will request that the State DOA revise permit conditions to require CWD testing before import and to ban import from infected areas. The State has no testing program for captive cervids but has requested a review of sources of imported animals to determine if they originated from CWD source areas. The State has no CWD testing program for wildlife.
Idaho	DOA/Animal Industries has jurisdiction over domestic cervidae, which includes elk, fallow deer, and reindeer. Idaho Department of Fish and Game has jurisdiction over importation and possession of all other species of wildlife. The State requires a negative TB test within 30 days prior to importation; herds must be CWD certified for three years in State of origin; elk must test negative for red deer genetic factor; cervids must originate from region not known to be endemic with *Parelaphostrongylus tenuis* (meningeal worm); the State will not import east of 100 meridian; a valid health certificate from State of origin and an individual identification number are also required. No domestic cervids are allowed from areas where CWD is endemic. No wild cervids are allowed without CWD information from originating State herds. DOA is currently reviewing their Domestic Cervidae rules. The Department of Fish and Game has no plans to change or review their CWD monitoring. CWD monitoring has been done on all domestic elk herds through DOA. Agriculture has a CWD certification program. More than 300 samples have been taken from Hunter Kills and Road Kills since 1997.
Illinois	DOA processes and administers import applications and oversees a captive cervid CWD monitoring program. DNR administers the Captive Game Breeder licensing program. Both have authority over importation and possession. The following regulations were superceded by adoption of the emergency rule, but will likely be back in place upon enactment of a permanent rule following the emergency period: Individual identification number; if originating in a State with vesicular stomatitis, CVI must state that the disease has not been diagnosed on premises of origin within past 30 days and no signs of disease are evident on premises; may not originate from herd under quarantine for any contagious, infectious, or communicable disease. On April 19, 2002, the State implemented

	an emergency rule (in effect for 150-day period) that prohibits importation of all captive cervids; requires that all cervids changing ownership or moving within State must obtain permit from DOA prior to movement; and originate from a herd that is enrolled in a State CWD monitoring program. Any cervid dying from an unknown cause that has exhibited neurological disorder must be tested for CWD; any cervid exhibiting symptoms of CWD will be destroyed and tested or quarantined until it can be determined that the animal does not have CWD. Two 'voluntary' CWD herd-monitoring programs have been established ("Certified Monitored" vs. "Contained Monitored"); intrastate movement or sales of cervids will be contingent upon participation in one of the programs. The State has conducted Targeted Surveillance of suspect animals since 1998, with no positive results; a systematic sample (n=260) of hunter harvested deer from throughout the State was tested during the 2001 season. Additional samples will be taken from northern Illinois (near Wisconsin border) prior to 2002 hunting season, with continued sampling from check stations during the firearm season. Under currently existing emergency regulations, importation is not allowed from any location. Upon adoption of a permanent rule in fall 2002, it is anticipated that importation will be prohibited from a "CWD endemic area," defined as any county or contiguous county where CWD has been diagnosed in the past five years.
Indiana	Department of Natural Resources and DOA - State Board of Animal Health have jurisdiction. An Emergency Rule by the Indiana State Board of Animal Health was enacted on April 16, 2002 which banned all cervid imports into Indiana. In June, the Board will vote on a permanent version of emergency rule which will suspend all cervid imports until May 2003. (Regulations prior to emergency rule: Entry permits issued on case by case basis for deer and elk after reviewing full medical history and herd's CWD monitoring program; permanent identification number). Upon death of any animal, the State veterinarian shall be notified and may inspect the carcass and take any tissues or other necessary testing materials. The State plans to launch CWD surveillance program in 2002.
Iowa	DNR controls captive white-tailed deer, DOA controls elk and other cervids (fallow, sitka, red deer, etc.). A permanent identification number is required. An order was issued modifying Importation Requirements of Cervidae on December 12, 2001: No cervid originating from or having been located in area endemic for CWD is allowed, no cervid from herd having animal introductions from area considered endemic to CWD during last five years, all require entry permit. CVI must state no diagnosis, signs, or epidemiological evidence of CWD in originating herd for the year previous to import. All cervids in originating herd must have been there for at least one year or have been natural additions, herd must have no evidence or diagnosis of CWD or cervid must originate from certified or monitored CWD herd. The State has proposed a four-month moratorium on deer imports unless from herd certified free of CWD. The State is in process of implementing a mandatory monitoring program for captive white-tailed deer; voluntary surveillance for elk and other cervids under the DOA. The State is also compiling a GIS database with captive cervid facilities, and will determine if any cervids on farm were exposed to CWD before importation, may test wild deer from around these facilities. The State is collecting samples from road killed deer, and plans to test 1,000 deer from 2002 hunting season. Captive cervids native to or originating from any county or region under quarantine for bovine TB is not eligible for import.
Kansas	All members of the cervidae family are prohibited entry into Kansas, unless said members are part of a State sponsored certification program that monitors for CWD, including a test of all slaughtered animals of animals that have died because of any other means over 16 months of age. Any import must originate from a herd that has been monitored for CWD for a minimum of four years and has been assigned to the entry level or higher of the State of origin's CWD Certification program. No member of the cervidae family will be allowed entry into Kansas if said animal has originated from a herd that has been declared infected with CWD within the previous five years. The State has a CWD testing program for wildlife.
Kentucky	Department of Fisheries and Wildlife regulated importation and holding of cervids. The DOA is in charge of the health aspect of importing captive cervids and intrastate movement. Cervids cannot originate from a State with vesicular stomatitis. The moratorium on captive cervid importations that was in place from August 2001 to June 2002 has been lifted. On June 1, 2002, the Department of Fisheries and Wildlife and DOA filed emergency regulations with the following requirements: Imported animals must come from facilities that have adopted the Model Protocol for CWD Surveillance and be at a three-year monitored status, or from a facility that has had no importation for three years. There can be no importation from facilities located in States that have had a positive case of CWD in the wild. There can be no importation from facilities located in States that have had a captive case of CWD in the previous five years. Efforts are made to necropsy any elk that dies in Kentucky.
Louisiana	Department of Agriculture and Forestry has jurisdiction. On May 6, 2002, the Wildlife and Fisheries Commission issued a Declaration of Emergency which banned the importation of deer and elk into the State; it also restricted movements within the State. The State developed regulations requiring any permitted game farm to submit samples from any animal that dies for any reason. The State developed surveillance for hunter killed deer for the 2002 hunting season.
Maine	DOA regulates cervids used for meat production; Department of Inland Fisheries and Wildlife regulates all other imports. On June 12, 2002, the State issued a six-month embargo on the importation of deer and elk. The State is in the process of developing long-term regulations, contingency plan, and wildlife

	surveillance. The State has a surveillance program for captive cervids.
Maryland	DNR and DOA have jurisdiction. No imports are allowed (with exceptions). The State prohibits cervid farming for meat or hide, and is in the process of clarifying regulations to prohibit hunting preserves. The State has no specific CWD regulations but is un the process of developing them. The State conducts no testing but will discuss testing as regulations are developed.
Massachusetts	Division of Fisheries and Wildlife regulates importation and possession, the Fish and Wildlife Board creates and modifies regulations and policies regarding captive cervid imports. In April 2002, the State issued a Moratorium on the importation of all cervids. Previous regulations: No white-tailed deer or elk imports allowed, only farmed deer allowed are fallow, sika, reindeer and red deer; bluetongue testing (within 30 days of import) if from endemic area. The State has no active testing program for captive cervids or wildlife.
Michigan	DOA has jurisdiction. On April 26, 2002, the State issues a one-year ban on all deer and elk imports. Previous regulations: USDA alpha numeric ear tag, must originate from bovine TB accredited, qualified or monitored herd, more extensive TB testing required. The State has voluntary surveillance; all death losses in captive herds must be reported to DOA and submitted for CWD testing. The State has tested 452 hunter-harvested white-tailed deer since 1998.
Minnesota	Effective through June 1, 2003, importation of cervids from CWD infected herds, or CWD endemic areas as defined by the State Board of Animal Health are prohibited. Cervids from other areas may be imported only if they have been in a herd that has been subject to State or provincial approved CWD monitoring for at least three years. Animals from herds or areas diagnosed with CWD not allowed. Elk only-herd of origin must be in a State recognized CWD surveillance program for one-year minimum. The State is in the process of developing an emergency outbreak plan. The State has voluntary testing; 167 game farms are enrolled. The Department of Natural Resources has increased CWD targeted surveillance efforts, and released guidelines to field staff for collecting suspect deer. Developing plans for sampling hunter-harvested deer this fall; the State expects to collect and test up to 4,000 deer this year.
Mississippi	Wildlife, Fisheries and Parks has jurisdiction over white-tailed deer; DOA has jurisdiction over exotics. No importation of white-tailed deer is allowed; permanent identification number is required. Wildlife, Fisheries and Parks and DOA met on June 3, 2002 and implemented a ban on the importation of all cervids for 120 days. No imports are allowed from geographic regions where CWD is endemic or diagnosed. Exporting herd must have participated in CWD monitoring program approved by Mississippi State veterinarian for at least 12 months or furnish documentation of the import cervid since birth. The State is in the process of increasing CWD regulations. The State has very few captive cervid facilities. Annual health checks are performed on wild cervids, there is minimal CWD testing.
Missouri	DOA regulates animal health and movement, exhibition, sales and elk for consumption or husbandry. Department of Conservation regulates hunting preserves and breeding facilities. On May 16, 2002, the State issued an Emergency Rule which effected a four-month moratorium on the importation of mule deer, white-tailed deer and elk over 16 months of age; transport of any live wild deer within the State has been halted. (Previous regulations: entry permit required). No cervids from endemic areas, or animals having been in an endemic area during last five years are allowed; if importing from a State with CWD but not an endemic area, herd of origin must be under surveillance for at least three years. The State is working to finalize a State CWD contingency plan. Voluntary CWD surveillance programs have been developed with a majority of enrollment scheduled to begin July 2002. Random testing was done during 2001 hunting season; a comprehensive program will be implemented during fall 2002.
Montana	Fish, Wildlife and Parks has jurisdiction and over licensing, reports, record keeping and exterior fencing, classification, unlawful capture, inspection and enforcement. Department of Livestock has authority over marking, inspection, transport, importation, quarantine, hold orders, interior facilities, health, and enforcement. Cervids must be imported to a game farm with an approved quarantine facility; official identification tag, trace back capabilities; no red, axis, rusa, sambar, sika or roe deer imports; white-tailed deer must originate west of the 100th meridian and be certified free of meningeal worm parasites and dorsal spine larvae; elk must be free of red deer genes; cervidae must be TB and Para TB free. The State is not licensing new captive facilities, no shooting of captive animals or transfer of existing licenses is allowed. Cervids must originate from a herd that has participated in an approved mandatory surveillance CWD program for at least 60 months prior to import; no cervidae have been added to exporting herd within last 60 months from a herd of lesser CWD status; if exporting State has any confirmed CWD, must have completed an epidemiological investigation and identified all CWD affected, exposed, or trace herds. Game Farm Regulation 32.4.1301, Sub-Chapter 13: Requires annual whole herd inspection, identification verification and inventory, must report all animal deaths within one working day of discovery and request inspection with CWD samples submitted for testing; test eligible age is 16 months and older. The State has tested almost 1,800 animals. The State has done statewide sampling since 1998, and has tested more than 1,300 animals. The State also tests deer or elk displaying clinical symptoms.

Nebraska	DOA has jurisdiction. Transport prohibited if exposed, infected, or suspected to have an infectious, contagious, or transmissible disease; identification number required; cannot be moved through more than one concentration point in 90 days. Cervids cannot be moved out of endemic counties into non-endemic counties or out of State. CVI for elk or mule deer must verify: 1) the herd of origin has had no diagnosis or epidemiological evidence of CWD for the past five years; or 2) The herd has been enrolled five or more years in a State-approved CWD herd monitoring program and current status has been recorded on CVI. All captive cervids 16 months or older that die from illness, slaughter, hunting or any other cause shall be reported within 24 hours and submitted for CWD testing. Since 1997, the State has checked 2,491 hunter harvested deer and 131 hunter harvested elk. The State has tested 406 agency harvested deer and 42 animals exhibiting clinical signs. The State will collect statistically valid sample around any positive cervid facility. The State is in the process of developing region wide plans for deer and elk to address a reduction of CWD occurrence. Cervid import from any county or contiguous county that has a positive wild CWD case or from any game farm that has had a positive, exposed or trace animal in the past five years is not allowed.
Nevada	Only elk from a CWD monitored herd with no incidence of the disease in the past five years will be allowed import permits. No elk ranches exist in the State. 328 hunter harvested deer and elk have been tested the past two years. If the State is under quarantine, special provisions apply.
New Hampshire	Departments of Fish and Game and DOA have jurisdiction. On April 30, 2002, the State enacted an Emergency Rule which banned all cervid imports for 180 days. (Previous regulations: No cervidae shall enter the State from any premise where CWD was diagnosed or which has been received from a premise where CWD was diagnosed; permanent identification number). Department of Fish and Game and DOA will meet to discuss permanent regulations. The State has no CWD testing program for captive cervids or wildlife. The State is working with Northeast Deer Technical Committee to establish testing in white-tailed deer.
New Jersey	On April 15, 2002, the State banned all imports and exports of any member of the cervid family. USDA/APHIS/VS, New Jersey DOA will repeat the 1997-98 CWD survey including captive cervids. The State is developing surveillance for captive cervids. In 1997-98, the State conducted a survey using heads from 506 hunter-killed and road-killed deer.
New Mexico	Department of Fish and Game has jurisdiction. Cervids must be permanently and uniquely tattooed in at least one ear and tagged with a USDA metal ear tag; test negative for Johne's disease, and originate from monitored herd free of CWD for at least 60 months. Must have completed "Free of CWD Declaration" stating that cervid does not originate from a herd in which CWD has been diagnosed in the last 60 months, does not originate from a herd identified as a source herd for CWD, and the animal has no history or evidence of ever having been exposed to CWD. Importing party must also sign document stating that farm is disease free. The State has tested captive herd for two years, and performs testing on suspect animals. The State has been testing wild cervids for two years and will continue to test hunter killed deer and elk. The State banned importation from all States and Canada.
New York	Department of Environmental Conservation (DEC) regulates importation and possession of live white-tailed deer and issues licenses for possession, Department of Agriculture and Markets regulates importation with regards to disease testing, process health inspection information and represents "Deer and Elk Farmer" industry. On April 12, 2002, the State banned all imports of any member of the cervid family. (Previous regulations: negative anaplasmosis/blue-tongue test (within 30 days of import) if from State where disease is endemic). DEC, DOA, State Department of Health and USDA, APHIS, Wildlife Services are working on CWD MOU for responding to CWD. DEC is working with the DOA to develop a strategy for CWD testing of captive herds (they expect guidelines within one month from May 28, 2002). The State has a testing program for wildlife.
North Carolina	Locations to and from transport required, identification number required, inventory report required to obtain or renew a captive cervid license. The State has a testing program for wildlife. No cervids are allowed from any county or contiguous county where CWD has been diagnosed.
North Dakota	Board of Animal Health has jurisdiction. Captive cervids must meet standards of risk assessment and/or have health certificate. Elk-must be free of all contagious and infectious disease; genetic testing required in zones 1 and 2 in North Dakota; animal not infected with or exposed to Johne's disease. Importers must complete a CWD Risk Assessment Questionnaire and fax it to the Board of Animal Health prior to entry permit issuance; cervids and originating herds must have no history of emaciation, depression, excessive salivation or thirst, or neurological disease. If symptoms arise, diagnostic measures must be taken to rule out a TSE. Game and Fish Department is in process of developing a Prevention and Contingency Plan for CWD in free-ranging cervids. Board of Animal Health has conducted mandatory surveillance since 1998 and mandatory inventory since 1993 for captive elk, white-tailed deer, and mule deer over 12 months of age that die for any reason. Game and Fish Department has conducted Target Surveillance of free-ranging cervids since 1996. The State is in the process of developing voluntary surveillance program of hunter-killed cervids.

Ohio	DOA has jurisdiction. Cervids entering the State must be free of symptoms of CWD. No importations are allowed from quarantine premises or area. On May 6, 2002, the State banned the importation of all cervids from Wisconsin. If entering cervids tested negative but were exposed to the disease, they might be allowed entry. No importation from quarantine premises or area is allowed. The State is in the process of developing legislation requiring all cervid imports be from CWD accredited herds and implementing an emergency rule on the importation of cervids from areas where CWD has been diagnosed. The State is in the process of developing a monitoring program for captive cervids. The State plans to include CWD in 2002 hunting season deer gun TB survey. No cervid imports from Wisconsin are allowed.
Oklahoma	Department of Wildlife Conservation and DOA have jurisdiction. Cervids must originate from a premises where TB and brucellosis have not been diagnosed in the last 12 months; a permanent identification number is required. On May 21, 2002, the DOA suspended the import of cervids from all States and provinces where CWD has been identified in free-ranging cervid populations. Additionally, all other cervid imports require the source herd to participate in a State and Federal CWD monitoring program as of January 1, 2001. On June 3, 3002, the Department of Wildlife Conservation passed rules which coincide with rules of the DOA. The State has voluntary surveillance in participating herds requires testing all captive cervids over 16 months of age that die, perimeter fencing prevent ingress/egress of cervids, annual herd inventory by an accredited veterinarian, designation of herd status, herd additions allowed from herd of equal or greater status, each animal shall have a minimum of two approved unique identifiers. 393 hunter-harvested animals have been tested since 1999, including 376 white-tailed deer, 8 mule deer and 9 elk.
Oregon	The State requires detailed herd history and elk negative for red-deer hybridization will only import fallow deer, reindeer and elk. The State prohibits importation if animal has ever been in or is from Manitoba or any Canadian province east of Manitoba, Minnesota, Iowa, Missouri, Oklahoma, or Texas.
Pennsylvania	Game Commission and DOA have jurisdiction. Cervids are exempt if moved to hunting preserve for purpose of being shot; an identification number is required. Agricultural Code (3 Pa.CSA 2322d, effective January 5, 2002 - January 4, 2003): Cervids must originate from a State where CWD is not known to exist, and the animal may not originate or have resided at anytime in a State in which CWD is known to exist. Cervid must be from a farm/herd enrolled in a State approved CWD monitoring program for at least five years. The State tests all captive cervids over 16 months that die (including slaughter), require perimeter fencing preventing ingress/egress of cervids, annual herd inventory, designation of herd status, must report herd additions. The State has a testing program for wildlife.
Rhode Island	Cervids must originate from a Federally accredited TB free herd; negative anaplasmosis/blue-tongue test (within 30 days of import). The State requires proof that there is no current or past history of contact with or exposure to any potential CWD animals or States affected by CWD. The State plans to incorporate CWD permanently into regulations as soon as possible.
South Carolina	DNR has ultimate control over importation and possession of captive cervids. Clemson University Livestock and Poultry Health also provides permit if and only if the Department of Natural Resources has previously permitted importation of the cervid. Other than an occasional permit for temporary exhibition (like reindeer at Christmas shows) and one dated permit for a small number of privately held fallow deer, importation of cervids has not been permitted (SC Code Section 50-11-1920). As of May 2002, no more permits for temporary exhibition. Since 1998, the State has participated in CWD surveillance with Southeast Cooperative Wildlife Disease Study.
South Dakota	DOA has jurisdiction. Negative anaplasmosis/blue-tongue test (within 30 days of import) and individual identification number are required. Owners must complete Elk Herd Demographics and Risk Assessment form. Cervids must originate from a herd in which all cervidae have been kept for at least one year or into which they were born. No exposure to or additions from any other source in the past year are allowed. No diagnosis, signs or epidemiological evidence of CWD in this herd for the past year are allowed. Movement will be allowed if animals originate from a herd determined to have a certified CWD cervid herd status by the Animal Health Official of South Dakota. Documentation must also state that no animal in the herd has originated from, or ever been a member of, a herd where CWD has been diagnosed, or have been a member of a CWD trace-back or trace-forward herd by an epidemiological investigation in the past five years. No new regulations are being discussed. The State monitors the occurrence and distribution of CWD; captive cervid farms are required to keep inventory and report any additions, disappearances or illnesses which may be submitted for diagnosis. The State tested 881 hunter harvested animals (368 elk, 251 white-tailed deer, 101 mule deer) in 1998-99, emphasis for testing is on elk and deer near quarantined herds, Department of Fish and Game will take unhealthy animals for evaluation.

Tennessee	DOA has jurisdiction. No cervids are allowed from geographic areas where CWD diagnosed; CVI must state importing cervid originates from herd in CWD surveillance program for at least 18 months. On May 3, 2002, DOA enacted an Emergency Rule which banned the importation of cervids from geographic areas where CWD diagnosed; risk assessment based on proximity of cervid to positive CWD geographic areas is required; CVI must state importing cervid originates from herd in CWD surveillance program for at least 18 months, herd diagnosed with CWD, nor identified as a CWD trace-back or trace-forward herd, any additions to herd must originate from a herd that has participated in a CWD surveillance program for at least 18 months. Surveillance on captive cervids is performed on a voluntary basis. Testing is done on animals displaying symptoms of CWD. The State plans to increase surveillance in 2002 to include testing of wild deer near captive cervid facilities.
Texas	Animal Health Commission and Wildlife Commission have jurisdiction. On March 20, 2002, the Texas Animal Health Commission and Texas Parks and Wildlife Commission issued separate orders to prohibit the entry of all elk, white-tailed deer, black-tailed deer and mule deer into Texas. The State has had voluntary surveillance since 1999; in participating herds, it requires submission of samples from all cases of mortality in animals over 16 months of age.
Utah	CVI must state that cervid is not infected with Johne's, CWD, or malignant catarrhal fever and may have never been east of the 100 degree meridian. Animals must have all internal and external parasites treated. Cervids must originate from a State or province that requires all suspected/confirmed cases of CWD to be reported, State must have the authority to quarantine. Elk must originate from States with implemented programs for surveillance, controls and eradication of CWD in domestic elk. No elk from herd, trace-back herd or adjacent herd diagnosed with CWD or elk exposed to or positive for CWD allowed for import. The State has mandatory cervid farm testing, must report any suspect or finding of CWD and must submit any elk over 16 months of age that dies for any reason for testing, captive hunting facilities must submit samples from 50percent of all elk that are killed, slaughtered or destroyed. The State began wildlife surveillance in 1998, tested 761 deer and elk 1998-1999, and now has program targeting deer and elk exhibiting symptoms of CWD.
Vermont	DOA and Fisheries and Wildlife Department have jurisdiction. In May 2002, DOA and Fish and Wildlife Department issued a moratorium on the importation of cervids (this will be reviewed in six months). (Previous regulations: Animals must also test negative for anaplasmosis/blue tongue and vesicular stomatitis exposure. Reindeer and red deer must be free of nematodes of subfamily *Elaphostranigylinaee* at the time of importation).
Virginia	Department of Fish and Game has jurisdiction. No white-tailed deer farming is allowed; two to three fallow deer farms exist; no other cervids are allowed. The State is in the process of implementing a ban on all cervids and of developing mandatory surveillance. The State tested wild elk from 2001 hunting season, and is in the process of making elk testing mandatory.
Washington	The State requires a permanent identification number, origin of shipment, *Elaphostrongylinae* test (meningeal and muscle worm). No deer or elk may be imported, only fallow deer and reindeer. Veterinarian must report any signs of CWD by the next working day; farm owners must do monthly reporting when required by veterinarian. The State has conducted target surveillance sampling since 1995 from wild cervids with CWD symptoms, and will substantially increase surveillance for 2002 hunting season. In 2001, expanded surveillance is to include locker room checks of meat processors handling wild game.
West Virginia	DNR and DOA jointly issue import permits. Cervids must originate from TB Accredited herd; must complete application for importation; may not originate from any State diagnosed with CWD or TB. No cervids from States with CWD are allowed. The State has a CWD testing program for wildlife.
Wisconsin	Department of Agriculture, Trade and Consumer Protection regulates the importation of all cervids and registers farmed non-native cervids. DNR licenses white-tailed deer farms. The State has an embargo on cervids from any State where CWD has been found, no imports of elk or deer are allowed unless they come from herds that have been monitored and free of CWD for at least five years. The State is gathering comments on the draft of a permanent rule to tighten restrictions of import and intrastate movements of deer or elk and to require farmed raised deer and elk to be tested when they die or go to slaughter. Rule public hearings are scheduled for June 2002. The State has mandatory enrollment of all herds shipping live animals requires official identification, inventory, reporting of transactions, sampling of all mortalities of animals 16 months or older. The State has mandatory testing on all other carcasses of cervids 16 months and older if any part of the carcass leaves the farm. The State has tested more than 1,000 wild deer since 1999, and plans to expand voluntary testing of hunter harvested animals. The State will cull all deer in the eradication zone and reduce the deer population in adjacent management units to 50 percent of over-winter goals.
Wyoming	Game and Fish Commission has jurisdiction. Cervid ranching is not allowed; one elk ranch (which is not in the CWD endemic area and has opted not to import any cervids) was given an exemption. The State conducts continual statewide targeted animal survey; annual hunter surveys in endemic area, and tests more than 1,000 animals per year.

Appendix II List of Working Group Members

Task Force Members

Bobby Acord	U.S. Department of Agriculture (task force co-chair)
Steven A. Williams	U.S. Fish and Wildlife Service (task force co-chair)
A. Gordon Brown	U.S. Department of the Interior
Larry Bryant	U.S. Department of Agriculture
Bill Clay	U.S. Department of Agriculture
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W. Ron DeHaven	U.S. Department of Agriculture
Dennis B. Fenn	U.S. Geological Survey
John Fischer	Southeastern Cooperative Wildlife Disease Study
Gary Rankle	Bureau of Indian Affairs
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Randy Jones	National Park Service
Bruce Morrison	Nebraska Game and Parks Commission
Frank Quimby	U.S. Department of the Interior
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CWD Task Force Working Groups

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David Morris	U.S. Department of Agriculture
Joseph Spence	U.S. Department of Agriculture
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