

**MICHIGAN SURVEILLANCE AND RESPONSE PLAN FOR
CHRONIC WASTING DISEASE OF FREE-RANGING AND
PRIVATELY-OWNED/CAPTIVE CERVIDS**

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Animal Industry Division, Michigan Department of Agriculture**



photo: Beth Williams, Univ. of Wyoming

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Chronic Wasting Disease (CWD) poses a serious threat to the health of Michigan's deer and elk populations, both free-ranging and privately-owned (PO)/captive², and to their long-term management. In PO/captive herds, CWD infections, and the quarantines that follow, limit 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, when available, constitutes a substantial economic burden for governments. Infection of free-ranging cervid populations may establish long-term foci of infection that may make cervid farming economically infeasible in those areas. Moreover, the negative impact of herd infection on the lives of cervid farmers cannot be overlooked. Implications of CWD for free-ranging cervid populations may be even more dire. While the long-term effects on the dynamics of these populations are not known, modeling suggests they could be dramatically negative. Surveillance and control programs necessitated by CWD are demanding of both monetary and personnel resources of wildlife management agencies, which are often quite limited. Perhaps most ominously, public and agency concerns about potential human health risks associated with CWD, while thus far groundless, may nevertheless undermine participation in hunting, with potentially marked effects on local and state economies, habitat degradation, and the ability of wildlife agencies to manage free-ranging cervid herds.

Rationale: This document proposes a broad outline of activities to be undertaken by the Wildlife Division, Michigan Department of Natural Resources (MDNR), and the Animal Industry Division, Michigan Department of Agriculture (MDA), to:

- Determine whether or not CWD currently exists in PO/captive and free-ranging deer and elk, and its geographic extent, if present;
- Provide a framework for ongoing surveillance to detect introduction of CWD into PO/captive and free-ranging cervid populations in the future, assuming the disease is not already present;
- Act promptly to kill infected and exposed animals if the disease is present, with the intent of limiting further transmission of the disease, and ultimately eradicating CWD from PO/captive and free-ranging populations.

The MDNR and MDA activities can be broadly divided into two categories: Surveillance and Response. Communications and education activities will change tone and direction depending on circumstance, but are active, ongoing functions related to both surveillance and response modes. Most media accounts work to draw basic public understanding of the disease by linking it with Bovine Spongiform Encephalopathy (BSE, "Mad Cow Disease"). Continual communication and education activities, directed at lawmakers, key constituency groups, the media, and the general public will raise public awareness of CWD, increase understanding of the disease, and help ensure broad-based public support in the event that the state moves from a surveillance mode to a response mode.

¹ Animals of deer family such as deer and elk.

² Under Michigan law, farmed deer and elk are referred to as "privately-owned," and not the more common term of "captive."

I. Introduction³

- A. The agent: Chronic Wasting Disease is one of a group of diseases called transmissible spongiform encephalopathies (TSEs) or prion diseases. These diseases are believed to be caused by infectious, self-propagating “prion” proteins. Prions are normal cell proteins whose shape has been transformed in such a way that they can cause disease. Much of their biology is poorly understood. Chronic Wasting Disease is closely related to, but different than, other TSEs in other species, including Scrapie in sheep, Bovine Spongiform Encephalopathy (BSE) in cattle, and Creutzfeldt-Jakob Disease (CJD) and new variant Creutzfeldt-Jakob Disease (nvCJD) in humans.
- B. History: It is quite plausible that CWD arose in PO/captive and/or free-ranging cervids 40 or more years ago. Chronic Wasting Disease was first recognized as a disease in 1967 in captive mule deer at a wildlife research facility in Fort Collins, Colorado (CO). In 1977, CWD was determined to be a TSE. The disease was first diagnosed in free-ranging elk, mule deer, and white-tailed deer in CO and Wyoming (WY) in 1981, 1985, and 1990, respectively. The first diagnosis of CWD in PO/captive elk was made in Saskatchewan (SK) in 1996. Canadian investigations have suggested that infected elk were apparently imported into Canada from South Dakota (SD) in the late 1980s, if not earlier. To date, CWD has been diagnosed in PO/captive cervid facilities in Alberta, CO, Kansas, Montana, Nebraska (NE), Oklahoma, SK, and SD, and in free-ranging cervids in CO, NE, New Mexico (NM), SD, SK, Wisconsin, and WY. The connection between CWD in PO/captive cervids and free-ranging cervids is inconclusive.
- C. Species susceptibility: Moose, 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 it is injected directly into their brains, but the epidemiologic significance of this route of infection is questionable. No cases of human disease have been epidemiologically 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. As a precaution, the WHO recommends no part of a deer or elk diagnosed with CWD be eaten by people or other animals.
- D. Transmission: Although CWD is clearly infectious, details of transmission have not been determined. Available evidence suggests transmission of CWD is via 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.

³ Some of the following material is drawn from a synopsis of the scientific literature presented by Dr. M. Miller, Colorado Division of Wildlife, to the U. S. House of Representatives in testimony given May 16, 2002, and from Williams, E. S. and Miller, M. W. (2002), Chronic wasting disease in deer and elk in North America, Rev. Sci. Tech. O. I. E. 21(2):305-316.

Prion contaminated environments likely play a role in epidemics and the recurrence of CWD. In some cases, the CWD agent apparently persisted in heavily contaminated environments for years after all infected cervids had been removed. Transmission appears more likely where cervids are crowded or congregate at supplemental feed stations.

- E. Epidemiology: 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 in elk but not deer. Chronic Wasting Disease appears to be maintained naturally in both PO/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 PO/captive herds, CWD can reach high prevalence and result in high mortality; in one study, more than 90% of mule deer living on an infected premise for >2 years either died or were euthanized due to CWD. In free-ranging deer and elk populations, epidemic models available to date indicate that CWD may lead to total local extinctions of those populations.
- F. Symptoms and course of infection: Cervids with natural CWD infections are generally infected for 20-30 months before they show obvious 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, due to predation and the inability to forage effectively. No antibody response to the CWD agent has been detected. Chronic Wasting Disease is inevitably fatal once symptoms appear. No treatment or vaccine is available.
- G. Diagnosis: 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 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.

II. Surveillance Plan:

- A. For Free-Ranging Cervids. The MDNR will conduct surveillance (i.e. testing of animals to determine the presence/absence and extent of disease) of free-ranging cervids which will consist of two types:
 1. Targeted surveillance: Continuation of current Division activities to identify and test free-ranging cervids statewide that have been observed by the public or Division staff as showing symptoms consistent with CWD (emaciation, abnormal behavior/nervous system symptoms, excessive salivation, etc.). These animals will be collected by Division staff and transported to the Rose Lake Wildlife Disease Laboratory (RLWDL) for sampling. Testing will proceed as outlined in

points 2.f.i-iii., below. Disposal of specimens from targeted surveillance will be via incineration at the Diagnostic Center for Population and Animal Health (DCPAH) at Michigan State University (MSU).

2. Active surveillance: Testing of outwardly healthy cervids harvested by hunters during normal seasons, harvested via crop damage permits, or killed by vehicle collisions.
 - a. For administrative convenience and public understanding, surveillance will be carried out on a county basis.
 - b. Because the monetary and personnel resources available for testing are limited, not all counties will be sampled in one year. Counties targeted for earliest sampling will be determined by:
 - i. The number of PO/captive cervid facilities present in the county;
 - ii. The presence of cervid research facilities;
 - iii. Geographic location.

Counties scheduled for sampling beginning autumn 2002 are shown in Figure 1.

- c. All 83 Michigan 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.
- d. Initially, approximately 50 deer will be tested from each of 40 counties. This sample size will provide sufficient statistical power to be 95% confident of detecting CWD if it is present in a county at a prevalence of at least 5%. In addition, 50 elk will also be tested annually.
- e. Heads of deer and elk will be collected by Division staff, uniquely identified with a numbered jaw tag (similar to those currently used for bovine tuberculosis [TB] testing), and transported to the RLWDL for testing. The importance of obtaining, and maintaining, fresh specimens will be emphasized, in order to maximize the effectiveness of diagnostic tests.
- f. Testing will consist of:
 - i. Removal of the brainstem and medial retropharyngeal lymph nodes (MRLN) from the head. A specific region of the brainstem (the obex) and the MRLN are the currently preferred anatomic sites for CWD testing.
 - ii. Data from each animal's jaw tag (e.g., number, age, sex, geographic location of sampling to the section level, and hunter contact information) will be recorded in a computerized database housed at the RLWDL. 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 section, below.

- iii. Tissues will be pooled for each animal, packaged individually in formalin, and shipped to DCPAH (or other U.S. Department of Agriculture [USDA]-certified laboratory) where sections will be made, stained by immunohistochemical methods, and screened for the presence of characteristic CWD prion protein. Other scientifically-validated methods may also be used in the future, as they become available. Suspects will be forwarded for confirmation to a second laboratory, the U.S. Department of Agriculture's (USDA) National Veterinary Services Laboratory (NVSL) in Ames, Iowa. After examination of the lymph nodes of the heads for TB, heads will be disposed of via landfill until such a time as CWD is identified in the state⁴.

⁴ Although this practice will entail a small risk of sending the head of a positive animal to a landfill, this risk will be far outweighed by the conservation of resources that would otherwise be spent on the unnecessary incineration of thousands of negative heads. Those resources can then be directed to additional surveillance, increasing the likelihood of detecting the disease if it is present. Should the disease be found at some point, the routine means of disposal will then become incineration at DCPAH.

2002 CWD Surveillance Plan for Free-ranging Deer and Elk



Figure 1. MDNR Wildlife Division’s CWD Surveillance Plan for Autumn 2002.

- B. For PO/captive cervid herds. The MDA will conduct surveillance on PO/captive herds. (NOTE: Michigan has 900 to about 1,000 PO/captive cervid operations with about 25,000 animals.)
1. Currently, no cervids can be imported into Michigan, based on a one-year moratorium established by MDA on April 27, 2002.
 2. Prior to this ban, MDA had:
 - a. Banned on all cervid imports from Wisconsin effective March 2002;
 - b. Required a prior entry permit;
 - Must identify point and area of origin and herd of destination;
 - Must inform MDA of health status of animal and herd of origin;
 - c. Prohibited animals to be imported from areas where CWD has been diagnosed;
 - d. Prohibited animals to be imported that have been exposed to CWD.
 3. Protocol for Michigan herds that received Wisconsin cervids 1999 through present
 - a. Identify Wisconsin herds of origin;
 - b. Identify Michigan facilities that received the animals;
 - c. Form a CWD surveillance team;
 - d. Purchase, remove, and test Wisconsin imported animals;
 - e. The trace will be considered completed if all tests are negative.
 4. CWD Mandatory Surveillance
 - a. Perimeter fence requirements;
 - b. Animals identified by two approved methods;
 - c. Mandatory death reporting;
 - d. Surveillance testing of animals over 16 months of age that die, are sick, and a percentage of culls and slaughter animals;
 - e. Positive diagnosis is based on testing proper segments of the brain at a certified lab;
 - f. Positive animals - quarantine herd until the herd can be depopulated.
 5. CWD Accreditation Program (Voluntary)
 - a. Fencing requirements;
 - b. Record keeping requirements;
 - c. Animal movement restrictions;
 - d. Surveillance testing of all animals over 16 months of age that die;
 - e. Annual verification of animal inventory by state veterinarian;
 - f. Mandatory death reporting;
 - g. Animals identified by two approved methods;
 - h. Positive diagnosis is based on testing proper segments of the brain at a certified lab;
 - i. Positive animals - quarantine herd until the herd can be depopulated;
 - j. Herd status based on years of surveillance;
 - k. This is a six-year plan to achieve CWD free accredited status for a herd.
 5. As an additional note, all PO cervid facilities are regulated under Public Act 190 of 2000. This requires:
 - a. Mandatory registration of all facilities;

- b. Requirements for minimum fence heights and acceptable fence materials;
 - c. Mandatory fence inspection;
 - d. Mandatory yearly submission of fence inspection reports;
 - e. Mandatory record keeping;
 - Maintaining records of all additions to herd;
 - Maintaining records of all losses from the herd;
 - Maintaining records of all health certificates and test results;
 - All cervids must be officially and individually identified;
 - f. Mandatory yearly submission of animal inventories;
 - g. Recovery protocol for escaped cervidae;
 - h. MDA maintains a database of all cervid facilities with location, size, type, contact number, and number of animals present;
 - i. Instate movement restrictions based on registration class.
6. CWD is a reportable disease. Per 1998 PA 466, any owner, veterinarian, or member of the public who *suspects* CWD must report it to the MDA immediately. The MDA veterinarians trained in the diagnosis of the disease will be dispatched to do the follow-up on the report.
- C. Education/Outreach/Communications on Surveillance Activities – During the surveillance period, MDNR and MDA officials will focus on new ways to educate Michigan residents about CWD and Michigan’s plans for surveillance and response. All communicators should understand and be able to discuss CWD (basic pathogenesis and how it impacts wildlife), the testing procedure, Michigan’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 Michigan. Communication/Education activities should include:
- 1. Appropriate staff, designated by the MDNR and MDA, working at a regional level, attending local meetings of respective constituency groups to make presentations and answer questions.
 - 2. Natural Resources Commissioners and Agriculture Commissioners discussing the issue at public meetings and special events to raise support and awareness about the state’s surveillance efforts and prevention goals.
 - 3. MDNR/MDA raising public awareness and broad-based public support through guest editorials in daily newspapers, radio and television interviews, and other public speaking opportunities.
 - 4. MDNR/MDA staff have already presented an overview and update on CWD to the Michigan Legislature. These information updates should be an ongoing activity, to keep policy-makers informed of recent developments.
 - 5. Preparation of a CWD brochure/fact sheets for public distribution, publication of CWD information in the *Michigan Hunting and Trapping Guide*, and other publications.
 - 6. Continual, up-to-date information on MDNR/MDA web sites.

III. Response Plan:

The MDA/MDNR efforts are aimed at quick identification and response to limit further transmission of the disease and eradicate CWD from both PO/captive and free-ranging cervids. If CWD is diagnosed in the wild or in a PO/captive cervid facility, the Joint MDA/MDNR CWD Management Team will be activated. This Team will meet on a regular basis to coordinate the decision-making process of the MDNR and the MDA.

- 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 or lack of our response.

A. For Free-Ranging Cervids. The MDNR (Figure 2) CWD response 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:

1. Identification of an infected PO/captive cervid facility: The primary objective of Wildlife Division response efforts will be to determine if free-ranging cervids in the vicinity of the PO/captive herd are also infected with CWD and, if so, the magnitude and geographic extent of that infection. In the event an infected PO/captive cervid is identified, the following measures will be implemented as rapidly as possible:
 - a. Geographic Information Systems (GIS) methods will be used to map the location of the infected PO/captive cervid and herd (index case). A five-mile radius circle will be drawn around the index case, defining an ~79 mi² surveillance zone for free-ranging cervids.
 - b. Approximately 300 free-ranging deer ≥ 18 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:
 - i. Preferred: Landowners will be recruited to harvest deer from private land, with Wildlife Division staff available to assist landowners on request. Wildlife Division staff will harvest deer on public land.
 - ii. Alternative: Wildlife Division and MDNR management will expeditiously seek a Declaration of Emergency from the Governor in order to gain legal access to private lands of individuals choosing not to cooperate in surveillance. Subsequently, Wildlife Division staff will harvest deer on those lands.

In addition to these animals, deer harvested by hunters in the surveillance zone will also be subject to mandatory testing.

- c. Heads of all deer will be tested for CWD by methods noted in point II. A.2.e-f., above.
- d. Disposal of all unused tissues will be via incineration at DCPAH.
- e. Two possible scenarios may result from sampling in the surveillance zone surrounding the index case:
 - i. No infected free-ranging cervids are found. In this event, sampling in the 79 mi² surveillance zone will be carried out as noted above. Long-term sampling will focus on deer/elk harvested by hunters during normal hunting seasons for a period to be determined by epidemiologic analyses of surveillance data and findings from the index PO/captive herd, but for not less than three years. Deer not harvested in the hunt will be tested opportunistically as they become available.
 - ii. Infected free-ranging cervids are found. In this event, full-scale disease response operations will commence, with the primary goal being to kill all free-ranging cervids within the 79 mi² area surrounding the index case.
 - A) Killing will be carried out by whatever means are deemed most effective.
 - B) Killing will be carried out by Wildlife Division staff, with the assistance of personnel from other agencies as needed. Assistance of Law Enforcement Division (LED) and the Michigan State Police (MSP) will be requested to restrict public access to, and provide security in and around, the depopulation area.
 - C) All animals ≥ 18 months of age will be tested for CWD by methods noted above.
 - D) It is recognized that even with the objective of killing all the deer in the depopulation area, approximately 5-10% of the free-ranging population will likely survive.
 - E) Two possible scenarios may result from testing animals killed in the depopulation zone:
 - 1) 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 mi²) will be established around the two index cases (infected PO/captive cervid herd and infected free-ranging cervid).
 - a) Within each of these new surveillance zones, checking of all hunter-harvested deer by Wildlife Division staff will be mandatory for a period of no less than three years.

- b) From that sample, approximately four cervids/section ≥ 18 months of age will be tested for CWD by the methods described above.
 - c) The tested sample will be representative of the sex ratio of cervids in the surveillance zone.
 - d) Composition of the tested sample may also reflect results of epidemiologic analyses.
 - e) Experience with CWD in Colorado has shown the disease may be persistent in the environment, and that its transmission involves some environmental component(s), although these are poorly defined at this time.
Recognizing this:
 - i) 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.
 - ii) 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.
 - iii) Habitat management in the surveillance zones will emphasize practices that discourage the presence and growth of cervid populations.
- 2) 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.
- a) Within each of these new depopulation zones, killing of all free-ranging cervids, followed by testing, will be carried out as described in points III.A.1.e.ii.A)-D), above.
 - b) Following depopulation:
 - i) If no additional infected free-ranging cervids are found, new 15-mile radius surveillance zones (each encompassing an area of $\sim 707 \text{ mi}^2$) will be established around the location from which each infected cervid was taken. Surveillance will

proceed as described in point III.A.1.e.ii.E)1), above.

- ii) If additional infected free-ranging cervids are found, control activities will proceed as described in point III.A.1.e.ii.E)2), until no additional infected free-ranging cervids are identified.
2. Identification of an infected free-ranging cervid: The primary objective of Wildlife Division response efforts will be to determine the magnitude and geographic extent of CWD infection in the free-ranging population. Response measures will be proceed as already described for the scenario of a PO/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. Killing of all free-ranging cervids (depopulation) will be triggered by the finding of a second CWD infected free-ranging cervid within that 79 mi² surveillance zone. If no additional infected free-ranging cervids are identified, surveillance will proceed as in point III.A.1.e.ii.E)1), above (i.e., 15-mile radius surveillance zone established around index case location, mandatory deer check for at least three years, etc.).
 3. The finding of a CWD infected index case (either a PO/captive cervid or a free-ranging cervid) will also trigger the following surveillance and control measures:
 - a. Heightened active surveillance in counties adjacent to the county in which the index case was found (index county). The number of free-ranging deer tested per county will increase to 300, with this quota being sampled from each county that shares any part of any border with the index county. This sample would provide sufficient statistical power to be 95% confident of detecting the disease if it is present in a county at a prevalence of at least 1%. The majority of samples will be obtained from hunter-harvested animals during regular hunting seasons, with non-hunter harvested animals tested opportunistically as they become available. This heightened surveillance will continue for a period of no less than five years.

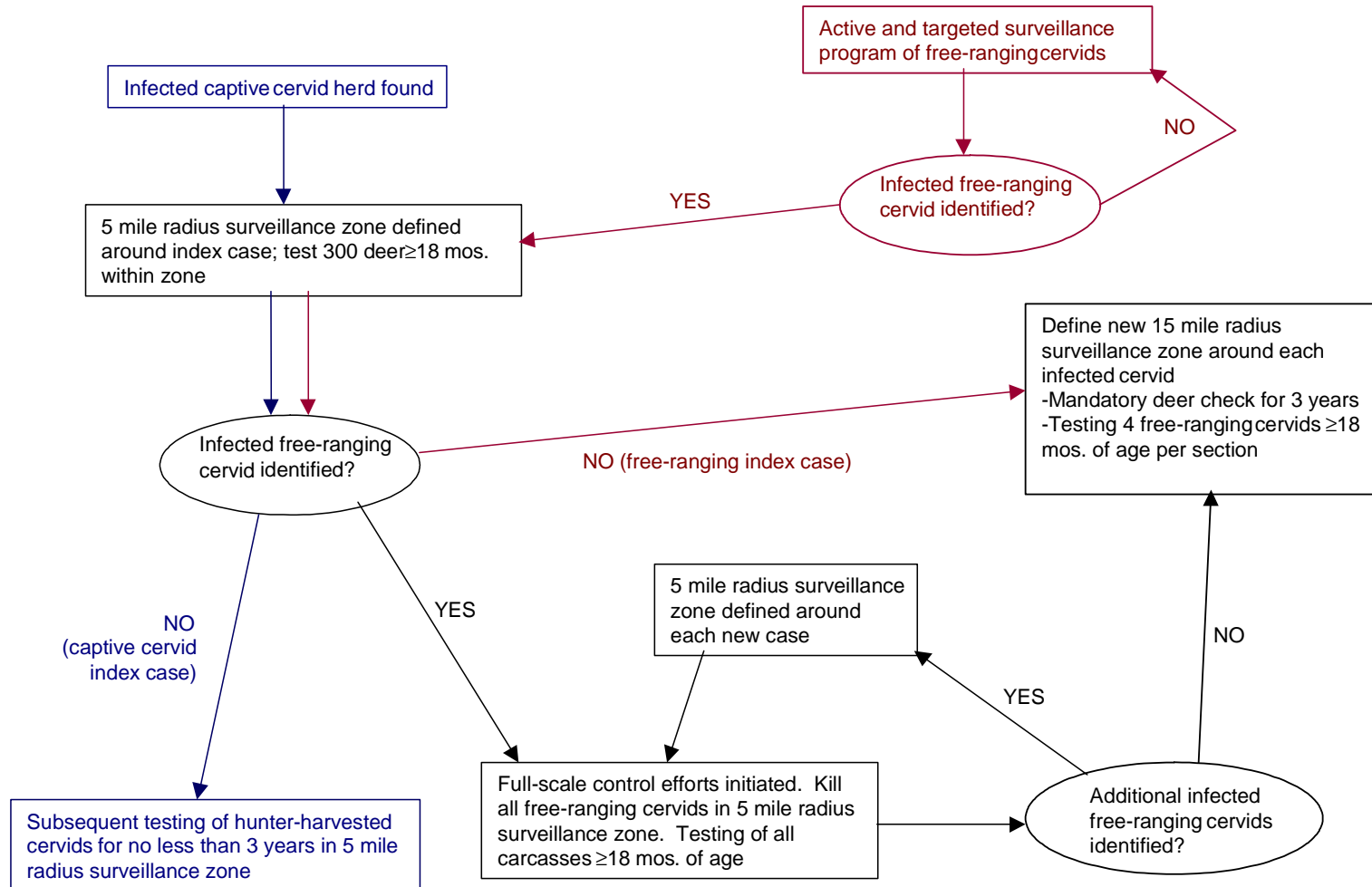
In the event one or more of the 15-mile radius surveillance zones noted in points III.A.1. and III.A.2., above, crosses county lines into a county adjacent to the index county, the 300 deer testing quota will be drawn from animals harvested in the remainder of the adjacent county not falling in that 15-mile radius zone.

If a positive CWD case is identified in any county adjacent to the index county, the 300 deer surveillance quota will also apply to any county sharing any part of any border with the county adjacent to the index county.

- b. 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 83 Michigan counties not subject to a heightened surveillance for adjacent counties described in point III.A.3.a., above. The majority of samples will be obtained from hunter-harvested animals during regular hunting seasons, with non-hunter harvested animals tested opportunistically as they become available.

- c. 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.
 - d. Rehabilitation of free-ranging cervids will become illegal statewide, as will transport of live free-ranging cervids anywhere in the state. Assistance of LED and MSP will be sought for vigorous enforcement.
 - e. With the cooperation of local county road commissions, collection of road-killed cervids will be coordinated and carried out by Wildlife 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 DCPAH for incineration.
4. In the event CWD is documented within Michigan or within 50 miles of Michigan's border with another state or Canadian province, the MDNR Director shall issue an interim order banning the use of bait and banning the feeding of deer and elk within the peninsula adjacent to the adjoining state or province with CWD or containing CWD.

Figure 2. Flowchart of Chronic Wasting Disease response activities to be undertaken by Wildlife Division on free-ranging Michigan Cervids.



- B. For PO/captive cervid herds. The MDA CWD response efforts will entail:
1. If CWD is diagnosed in the wild or PO/captive cervids, the state veterinarian will set up an MDA CWD response team. The team will consist of the following:
 - A veterinarian based in the Lansing office will be the team leader. This veterinarian will assist the state veterinarian as follows:
 - Coordinate response between MDNR and MDA;
 - Coordinate with USDA and other state veterinarians;
 - Coordinate response of private veterinarians;
 - Coordinate response with MSU College of Veterinary Medicine and PCPAH;
 - Keep the state veterinarian informed of all CWD team actions;
 - Work with the field leader.
 - A veterinarian that will be a field leader for the field veterinarians. Duties as follows:
 - Coordinate work load of staff;
 - Coordinate supplies and equipment;
 - Monitor bio-security measures being used to protect staff;
 - Be available to solve problems in the field;
 - Keep field veterinarians informed;
 - Keep team leader informed;
 - Ensure a sufficient number of field veterinarians to initiate and carry out the CWD response.
 2. CWD diagnosed in free-ranging cervid (one positive animal in 15-mile radius)
 - a. Define a 15-mile radius around each positive case and identify all PO/captive cervids.
 - b. Biannual herd inspection by state or federal personnel with removal and testing of any suspect animals for CWD. Indemnity will be paid for these animals if available.
 - i. CWD testing of all death losses of animals 16 months and older.
 - ii. Surveillance will continue for 60 months.
 3. CWD diagnosed in free-ranging cervids (two or more positive animals within a 15-mile radius)
 - a. Define 5-mile radius surveillance zone around each positive case and identify all PO/captive cervids.
 - i. If feasible depopulate, with indemnity if available, all PO/captive cervids over 16 months of age and test for CWD.
 - ii. Do epidemiological investigation to determine possible exposure of PO/captive cervids to infection.
 - iii. If depopulation is not possible due to economics or the number of positive cases:
 - A) Quarantine facility.
 - B) Do epidemiological investigation to determine possible exposure of PO/captive cervids to CWD.
 - C) Monthly herd inspection by state or federal personnel with removal and testing of any suspect animals for CWD. Indemnity will be paid for these animals if available.

- D) CWD testing of all death losses of animals 16 months and older.
 - E) Surveillance will continue for 60 months.
- b. Define a 15-mile radius around each positive case and identify all PO/captive cervids between the 5-mile radius and the 15-mile radius.
- i. Do epidemiological investigation to determine possible exposure of PO/captive cervids to CWD.
 - ii. Biannual herd inspection by state or federal personnel with removal and testing of any suspect animals for CWD. Indemnity will be paid for these animals if available.
 - iii. CWD testing of all death losses of animals 16 months and older.
 - iv. Surveillance will continue for 60 months.
4. CWD diagnosed in PO/captive cervid herd
- a. The state veterinarian shall conduct a complete epidemiological investigation to determine the specific cause, source of disease, population exposed, and population infected.
 - b. Depopulate the herd with indemnity if available.
 - i. Quarantine the facility
 - ii. CWD test all animals 16 months of age and older
 - iii. Incinerate all carcasses
 - iv. The positive herd premises shall be cleaned and disinfected according to directions prescribed by the state veterinarian that are designed to minimize the spread of CWD. The facility will be released from quarantine and repopulation will be allowed when the state veterinarian determines that the re-infection of animals with CWD is no longer likely.
 - c. Trace forward of exposed animals
 - i. Remove exposed animal, with indemnity if available, and test for CWD
 - ii. If the exposed animal is positive, the entire herd is positive
 - iii. If the exposed animal is negative, routine CWD surveillance (testing of death losses over 16 months of age) will continue.
 - d. Trace back of exposed animals
 - i. Quarantine the herd for 60 months from the last case traced back to the herd
 - ii. Monthly inspection of the herd by state or federal personnel with euthanasia and testing of any suspect animals. Indemnity will be paid for these animals if available. Disposal of animals must follow a protocol set by the state veterinarian.
 - iii. Surveillance (testing all death losses over 16 months of age) will continue for 60 months.
 - e. Biosecurity Measures.
 - i. Animal health biosecurity issues will be addressed using the latest information available and consulting with the MDA Biosecurity Committee.
 - ii. Staff Biosecurity, Required Apparel
 - A) Masks
 - B) Gloves
 - C) Coveralls
 - D) Boots

- C. Education/Outreach/Communications on Response Activities – In the event of a CWD confirmation in Michigan, 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 MDNR and MDA will designate limited knowledgeable 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 PO/captive cervid population, confirmation of a CWD infection in Michigan will involve MDA and MDNR 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 MDNR and MDA 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:

1. Security: Notification will take place upon official laboratory confirmation of CWD-positive test results.
2. 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 Commission of Agriculture; and the Director, Department of Community Health.
3. A meeting of key representatives from MDNR, MDA, the Governor's office, the NRC, and the Commission of Agriculture will be arranged as soon as possible to arrange a public announcement of the discovery and implement disease response strategies.
4. A media advisory will be issued following the meeting to announce a press conference. The press conference will be held in Lansing at one of the state buildings (Capitol, Romney, Mason, Constitution Hall).
5. Agency directors or designees will make calls to key constituency/stakeholder groups, including counterparts in other Great Lakes 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.
6. The MDNR and MDA Directors, and possibly the Governor, will confirm the presence of CWD in Michigan and outline the state's response plan. The press conference will include media packets providing reporters with background information on CWD, a history of Michigan's surveillance efforts, and other materials as deemed needed or appropriate.
7. 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 availabilities 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.

8. Within 10 business days of the initial confirmation announcement, each agency will reactivate the communication teams employed in the surveillance plan to continue working as needed with local constituencies, facilitating communications, answering questions, and providing updates on Michigan's progress.
9. Each agency's press 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.

MICHIGAN DEPARTMENT OF AGRICULTURE

Signed

8/26/02

Dan Wyant, Director

Date

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Signed

8/26/02

K. L. Cool, Director

Date