



**Surveillance and Management Plan
for Chronic Wasting Disease
2011-2012**

**Virginia Department of Game and Inland Fisheries
July 2011**

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INTRODUCTION

Chronic wasting disease (CWD) is a fatal progressive brain and nervous system disease found in North American deer, elk, and moose. Species naturally infected include elk, mule deer, white-tailed deer, black-tailed deer, and moose. There is strong evidence to suggest that abnormally shaped infectious proteins called prions are responsible for the disease. While there is currently no evidence that CWD has been transmitted to humans, the disease is a serious long-term threat to Virginia's deer populations.

The goals of the Virginia Department of Game and Inland Fisheries (VDGIF) Chronic Wasting Disease Surveillance and Management Plan are to:

- (1) Detect the disease, as early as possible, where it has not yet been found;
- (2) Obtain the necessary number of samples to monitor disease prevalence and geographic distribution within the CWD Containment Area, as required by the Response Plan; and
- (3) Apply management actions outlined in the CWD Response Plan and CWD Management Actions document to prevent and control the spread of the disease. It is our belief that early detection and rapid response will increase the probability that the disease can be successfully controlled or contained.

BACKGROUND

Since 2002, VDGIF has tested over 5,400 samples for CWD from wild white-tailed deer, captive deer of several species, and elk, with the large majority of samples coming from free-ranging white-tailed deer (Table 1). A few elk dispersing from Kentucky's restoration area were tested beginning in 2001. In both 2002 and 2007, VDGIF tested samples from free-ranging white-tailed deer that were killed by hunters or vehicles from across Virginia. Beginning in 2005, when CWD was first detected in Hampshire County, West Virginia, VDGIF has focused CWD surveillance in adjacent counties. Virginia's first case of CWD was confirmed January 19, 2010 in a 2.5 year old female white-tailed deer harvested by a hunter on November 14, 2009 in western Frederick County, Virginia (Figure 1). An additional positive was discovered in a 1.5 year old male white-tailed deer harvested by a hunter on November 13, 2010 in western Frederick County, Virginia (Figure 1).

Table 1. Summary of CWD samples collected statewide in Virginia by year.

Year	Pending	Valid Detected	Valid Not Detected	Invalid Test	Not Tested	Total
2011 (as of 7/1/2011)	10	0	18	0	0	28
2010	0	1	591	0	2	597
2009	0	1	285	0	7	293
2008	0	0	433	4	6	443
2007	0	0	1098	4	26	1128
2006	0	0	899	0	28	927
2005	0	0	700	11	38	749
2004	0	0	90	7	0	97
2003	0	0	32	10	0	42
2002	0	0	1112	17	0	1129
2001	0	0	0	3	0	3
Total	10	2	5258	56	107	5436

Following discovery of CWD in Wisconsin in 2002, VDGIF developed surveillance and response plans for the disease (current versions are available online at <http://www.dgif.virginia.gov/wildlife/diseases/cwd/>). VDGIF commenced CWD surveillance in 2002, and surveillance strategies included statewide active surveillance of hunter-harvested white-tailed deer, targeted surveillance of CWD clinical suspect deer, testing of free-ranging elk, and mandatory testing of captive cervid mortalities. During 2003 and 2004 targeted surveillance was continued as well as the testing of elk and captive cervids.

In 2005 the Department conducted a CWD qualitative risk assessment as a tool to spatially target active surveillance. The risk assessment was based on the assumption that areas of Virginia in proximity to concentrations of farmed or captive deer or elk were at the highest risk for introduction of CWD into the free-ranging white-tailed deer population. All captive cervid facilities within Virginia and the neighboring states (Kentucky, Maryland, North Carolina, Tennessee, and West Virginia) were designated a CWD risk category based on species present, movement histories and the state's CWD surveillance program for captive cervid facilities. Based on a concentration of high risk facilities, we identified a region of northwestern Virginia at higher risk for exposure to CWD. Subsequent to this risk assessment, West Virginia reported its first CWD-positive case close to Slanesville, Hampshire County, adjacent to the previously defined high risk surveillance area.

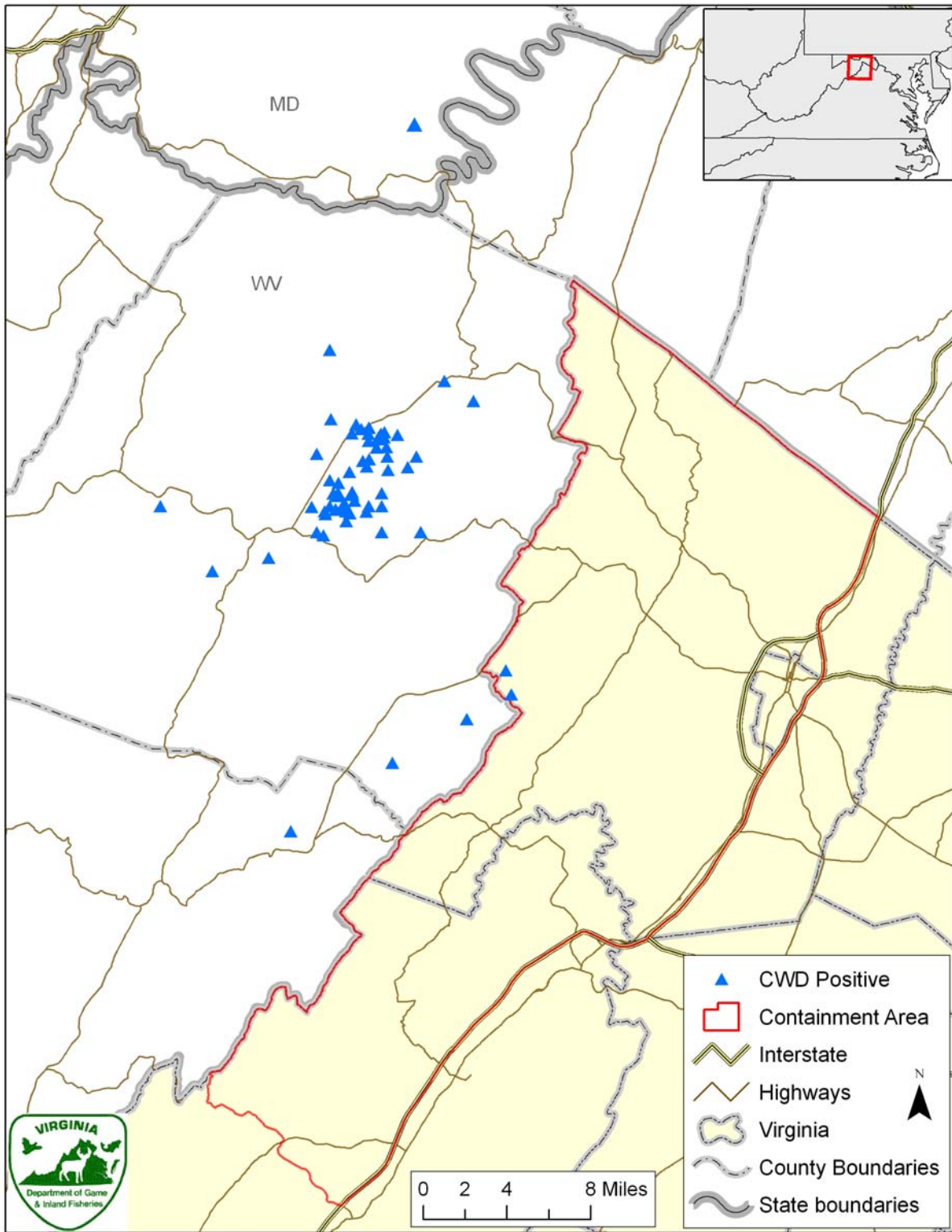
Due to the discovery of CWD within 50 miles of Virginia's border in September 2005, the CWD Response Plan was partially activated. This resulted in the establishment of an Active Surveillance Area that consisted of approximately 1,000 square miles of the western and northern portions of Shenandoah, Frederick, Clarke, and Loudoun counties. This area was again used for active surveillance in 2006.

In 2007, statewide active surveillance of road and hunter-killed deer was conducted with an emphasis on sampling deer from western Frederick County as well as statewide targeted surveillance. In 2008 and 2009, active surveillance was conducted in an area of western Frederick and Shenandoah Counties closest to the positive cases in West Virginia (Figure 1). As of June 15, 2010, CWD has been detected in 99 deer from West Virginia.

SURVEILLANCE PLAN

Three categories of cervids with different levels of risk for CWD exposure are specified in this plan. Each category has a different surveillance strategy.

- 1) Free-ranging white-tailed deer population.
- 2) Free-ranging elk that are part of a re-introduced herd from Kentucky.
- 3) Captive cervids (primarily exotic species such as axis deer, Chinese tufted deer, Eld's deer, fallow deer, muntjac, sika deer, white-tailed deer, and elk).



Sources: DCR, VDOT, Samples: VA DGIF, WV DNR, MD DNR

Map created 7/12/11- DGIF- KJR, GISP

Figure 1. The 2011-2012 Active Surveillance Area in Frederick and Shenandoah counties, Virginia, and locations of deer detected with CWD since 2005 in Virginia (n = 2), West Virginia (n = 99 through 2010 hunting season and staff collections), and Maryland (n = 1).

Free-Ranging White-Tailed Deer

Active Surveillance - Statewide

Statewide active surveillance was last conducted during 2007. According to the report, *Surveillance Strategies for Detecting Chronic Wasting Disease in Free-Ranging Deer and Elk* (CWD Surveillance Workshop. 2002. USGS National Health Center, Madison, Wisconsin. 40pp.), the frequency of follow-up random active CWD surveillance to detect CWD should depend on the risk for the disease occurring. Random sampling in low-risk areas was suggested to be done at 3- to 5-year intervals.

Statewide active surveillance of the free-ranging white-tailed deer population will be conducted during 2011. The sample size for each county has been calculated using a population density index and is listed in Appendix 5, and is estimated to be 1000 samples statewide. Based on probability detection models, this sample size is large enough to provide a 99% confidence level of detecting the disease at 1% prevalence or more. Any combination of hunter-harvested or road-killed deer as well as deer collected using other legal means such as kill-permits can be used to achieve the sample size. It is the responsibility of each region to determine what samples will be collected; however, regions are encouraged to focus sampling on older male deer, when possible, as published reports indicate that this demographic group has a higher prevalence of CWD. It will be the responsibility of each Biologist to enter the samples they have collected into the CWD database; they will also be required to ensure the timely delivery of all samples (with data cards) to the Verona office to the attention of "CWD." In addition, the regions are encouraged to sample deer from as many different regions of each county as possible to increase the geographic areas from which deer are tested for CWD. Samples may be obtained as early as October 1, 2011 and all samples must be received in the Verona office no later than **January 15, 2012**.

Road-killed deer may be collected in cooperation with the local Virginia Department of Transportation office (VDOT). VDOT staff should place a tag on the ear of the deer collected that will indicate the date and location of the collection (road number, mile marker, junction, etc.) as well as contact information. VDGIF staff can then meet VDOT staff at a designated location to collect the heads for tissue sampling. Hunter-harvested deer can be collected at check stations or at meat processing plants as well as working with hunt-clubs and DMAP cooperators.

Active Surveillance – Containment Area

During 2011-2012, VDGIF will conduct intensive active surveillance of white-tailed deer in the Containment Area of Frederick and Shenandoah Counties (Figure 2). This is the same area designated as the Active Surveillance Area during 2008 and 2009 (Figure 1). Sampling of deer harvested by hunters within the Containment Area deer will be mandatory on November 19, 26, and December 3, 2011. A hunter who harvests a deer in the Containment Area on these dates will be required to bring the deer to one of the 7 sampling stations (Figure 2): Cather's Market, Crossroads Grocery, Gore Grocery, State Line Store, and T&R Processing in Frederick County, and Larkin's Store and Graden's Supermarket in Shenandoah County. Hunters can still check

their deer via telephone or Internet, but they must also bring the deer to a designated CWD sampling station on these specified dates.

Active sampling will focus on hunter-harvested deer collected at check stations (November 2011) and at self-service drop stations (October-December 2011). Road-killed deer (October 2011 – January 2012) and deer killed on special permits (ongoing) will also be used as long as collection is essentially random. We anticipate collecting 500 samples from the Containment Area, which would be sufficient to further detect CWD at a prevalence of $< 1\%$ with a $> 95\%$ confidence. Active samples will also be collected opportunistically from the remaining portions of Frederick and Shenandoah counties, as well as from neighboring Clarke and Warren counties.

Sampling near the CWD outbreak along the Virginia-West Virginia border is an important component of active surveillance. The CWD Response Plan calls for the creation of an interstate management/surveillance area when the disease is found within 5 mi of the state border. This area encompasses 5 mi radii around all known CWD positives that are within 5 mi of the VA/WV line (denoted by the 7 bold circles in Figure 3). The CWD prevalence for this entire interstate surveillance area is estimated at 1.84% (SE = 0.65) based on a stratified analysis of all samples taken in Virginia and West Virginia during the 2010-2011 hunting season. More importantly from Virginia's perspective, the prevalence for the southern 5 circles aggregated is estimated at 0.94% (SE = 0.67).

The CWD Response Plan calls for annual sample sizes sufficient to estimate prevalence with an error of $\pm 2\%$ at 90% confidence, if feasible. Using the 2010 prevalence estimate for the southern area (0.94%), the minimum sample size needed for this area in 2011 will be 66 (20 in VA and 46 in WV). It is likely that this minimum sample size will be greatly exceeded, as it was during the 2010-2011 season, when 216 samples were taken in this area of VA and WV. This sample provided an error estimate of $\pm 1.3\%$ at 95% confidence. We assume that West Virginia will continue to collect a similar density of hunter-killed samples this coming fall as in previous years. Additional deer may be collected by staff after the end of deer season if the aggregate hunter-killed sample is inadequate.

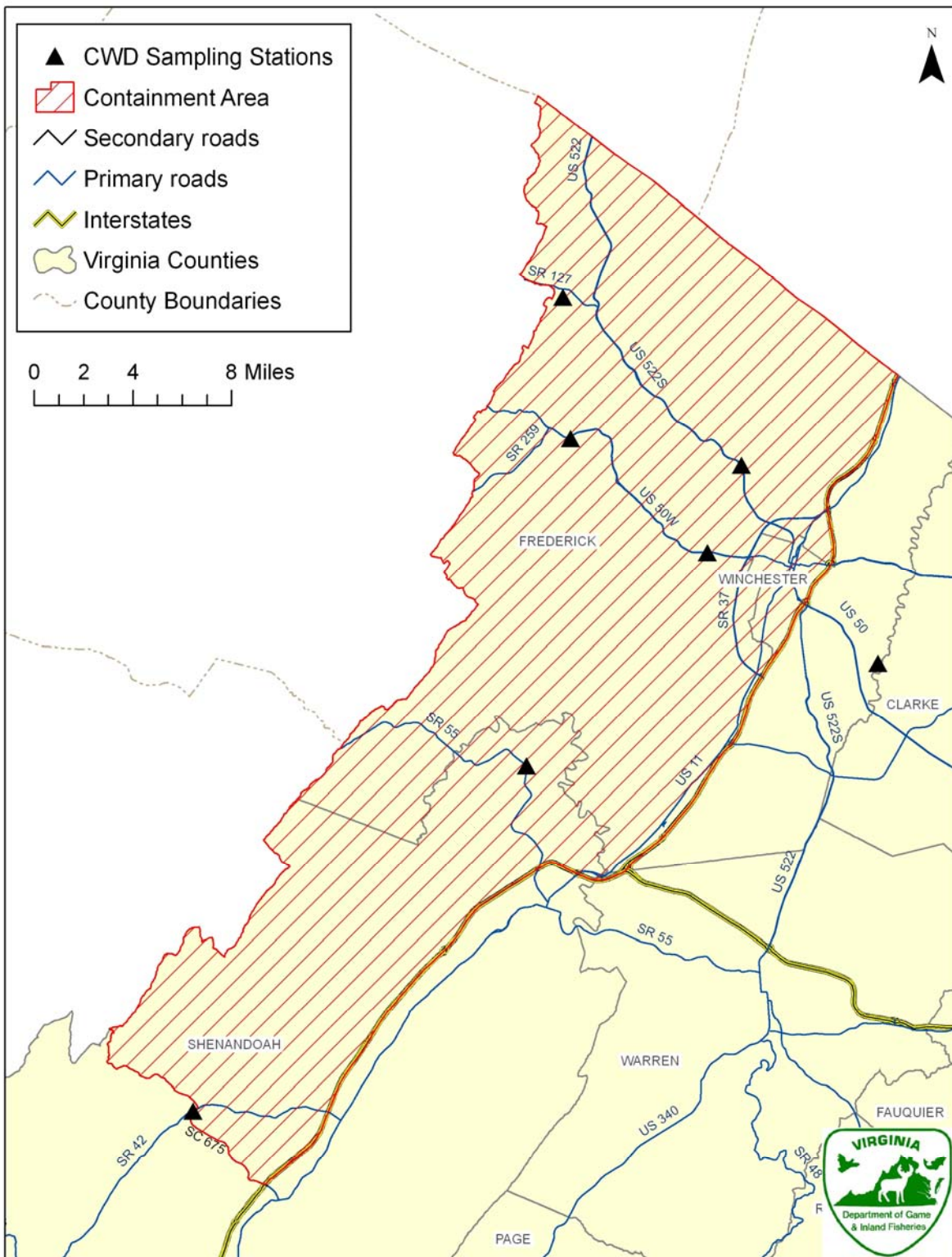


Figure 2. The 2011 CWD Containment Area showing designated sampling stations.

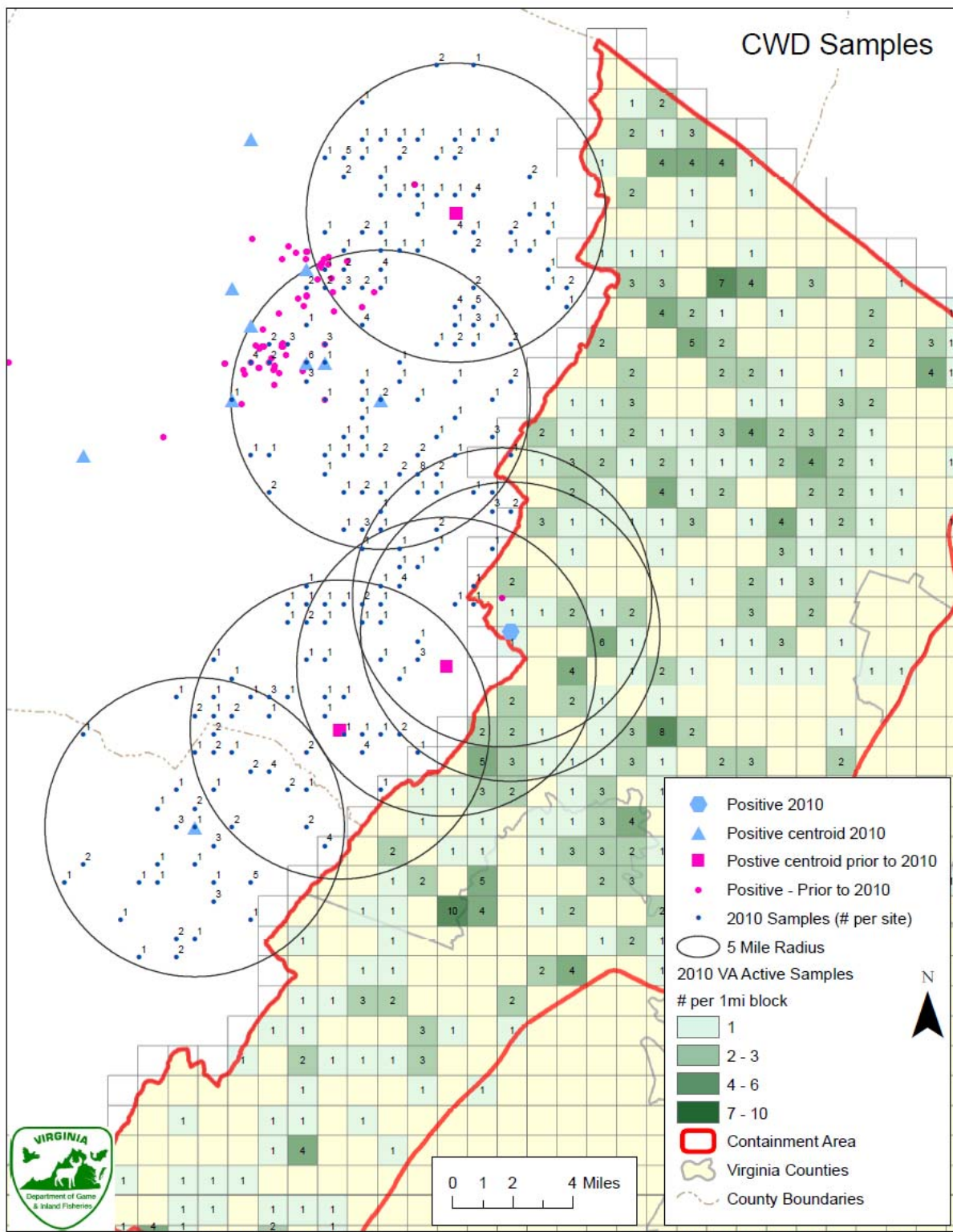


Figure 3. 5 mi radii around CWD positives along the Virginia/West Virginia boundary, with bolded circles representing those that intersect the state boundary and which collectively form the Virginia-West Virginia interstate surveillance area.

Targeted Surveillance of Clinical Suspects

Statewide targeted surveillance of CWD clinical suspects will be performed as they are reported and become available. CWD clinical suspect deer are defined as deer that are 6 months or older, that are emaciated, and that have neurological signs consistent with CWD including, but not limited to, abnormal behavior, increased salivation, tremors, stumbling, ataxia, difficulty swallowing, excessive thirst and excessive urination. Regional staff are encouraged to respond to all calls regarding these deer, and information campaigns for the general public and hunters should be conducted to encourage the reporting of deer with clinical signs consistent with CWD. Brochures and posters are available from the Department's wildlife division that can be used for this purpose.

Free-Ranging Elk

VDGIF considers translocated elk to be a target population, and active surveillance of road and hunter-killed elk as well as targeted surveillance of clinical suspects (see definition above) will continue. Consequently, all elk mortalities should be tested for CWD.

Captive Cervids

The Department currently considers all cervid species to be potentially susceptible to CWD. Therefore, all captive cervid mortalities over 6 months of age shall be tested for CWD (see Figure 4 for location of captive cervid facilities). The cervid owner must submit the head to VDGIF staff or a Virginia Department of Agriculture and Consumer Services laboratory within 48 hours of death. In addition, cervid owners are required to inform VDGIF of any animals showing clinical signs consistent with CWD (see definition above). In consultation with a VDGIF Deer Project Coordinator or other Wildlife Division staff, these animals will be euthanized and tested for CWD. The one fallow deer farm in Shenandoah County will be required to annually test 10% of the herd, or 30 animals, whichever is less.

Any wild white-tailed deer that intrude into a captive facility and that cannot be easily and quickly returned to the wild within 24 hours will be euthanized and tested. Any cervids that escape from a captive facility that cannot be retrieved by the owner will also be euthanized and tested by VDGIF staff, as appropriate. Illegally imported and/or possessed cervids and cervids within illegal facilities or operations will be euthanized and tested, as appropriate.

There are 4 registered white-tailed deer hunting enclosures in Virginia (see Figure 4). These "grandfathered" facilities enclosed free-ranging native white-tailed deer prior to a 2001 moratorium on such facilities. These facilities are managed pursuant to Department guidelines and annual inspections. While CWD risk associated with these facilities is presumably low, facilities are required to submit for testing all non-hunting mortalities that occur within the enclosures. These facilities have also been requested to submit a small sample of hunter-killed deer for CWD testing, so appropriate regional staff should continue to coordinate with these facilities for such submissions.

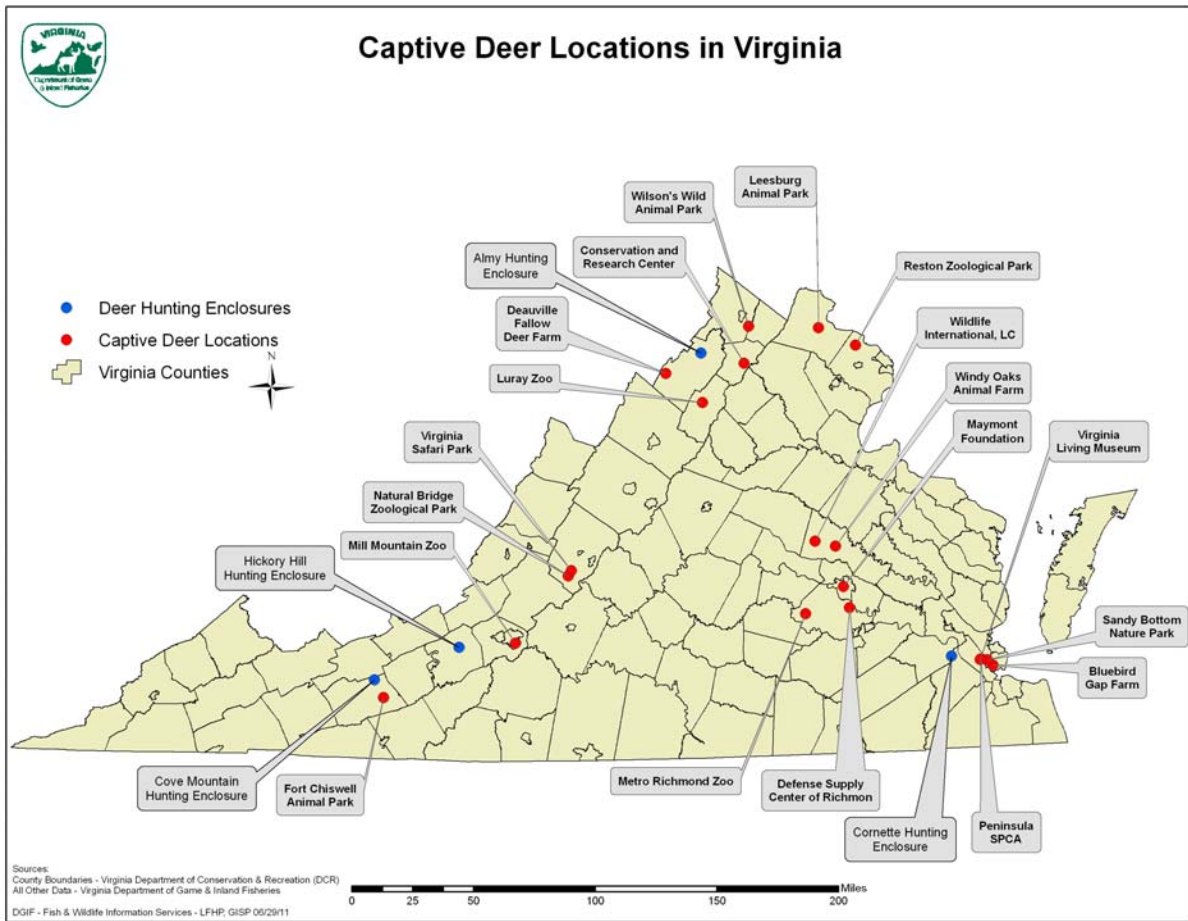


Figure 4. Captive cervid facilities in Virginia

DIAGNOSTIC SAMPLE COLLECTION

For active surveillance, only adult deer over *16 months* should be sampled. For targeted surveillance of clinical suspect and captive deer – including tame or illegally-held white-tailed deer - all animals over *6 months* of age should be sampled.

Heads do not have to be removed from deer sampled during hunting season at designated sampling stations, as retropharyngeal lymph nodes can be obtained through an incision in the neck. When heads must be removed, use a knife and loppers, leaving about 2-4 inches of the neck. The head should be put in a large Ziploc bag, the air squeezed out, and sealed. This bag containing the head should be put inside a second large Ziploc bag, and sealed (all heads will be double bagged if possible). The data card (inserted and sealed in a Ziploc sandwich bag) should be placed in between these two large bags to keep it dry.

This package (head bagged with the completed data card in a sandwich bag inside) should be refrigerated or put on ice as soon as possible. Refrigerators are located at 10 locations: Region 1, Hog Island and Rice Center; Region 2, Farmville and Forest; Region 3, Blacksburg and Marion; Region 4, Edinburg and Verona; and Region 5, Ashland and Fredericksburg. The heads should be taken to the most convenient location. As long as the head is refrigerated or kept on ice, then

the required samples can often be collected as many as 4-5 days later; however, any unnecessary delay should be avoided as sample quality can be compromised.

Make sure to get permission from the hunter before sampling a harvested buck. The antlers can be cut off individually through the pedicel using the loppers or saw. The antlers with the skullcap may also be removed with a saw as long as the brain left below the saw cut is not disturbed. If it is a buck that is going to be mounted at a taxidermist, the head can still be used after it has been caped out and the skullcap has been removed.

SAMPLING PROTOCOL

For convenience, Appendix 1 can be printed separately and kept as a reference sheet. Medial retropharyngeal lymph nodes (RLN) and the obex are the 2 organs needed for CWD sampling: (1) both organs should be collected from target cervids, including captive cervids and clinical suspects, and (2) only RLNs need to be collected during active surveillance of road-killed deer, hunter-killed deer, etc. Detailed explanation on the procedure to remove samples can be viewed on the video entitled *Chronic Wasting Disease* made by Wyoming Game and Fish Department.

Once removed the tissues should be divided as follows:

- a) Obex in 10% buffered neutral formalin (keep trimmings in whirl pack only for captive deer).
- b) Cut both retropharyngeal lymph nodes (RLN) longitudinally and place half from each RLN in the same buffered neutral formalin as the obex, if taken.
- c) Place the remaining ½ RLNs in a whirl pack for freezing (if a captive deer, these should be placed in formalin for TB testing).

All containers and whirl packs should be labeled appropriately along with a completed data card (Appendix 2). Record the tag number if the cervid is from a captive facility. For captive deer, the ear with the tag still attached should be submitted along with the sample. The ear should be frozen after being placed in a Ziploc bag within an outer bag containing brain trimmings (in the whirl pack) that is clearly marked with the sample identification number and date. Tissues in whirl packs should be frozen as soon as possible. **Once the samples have been collected, deliver them, along with the data cards, to the Verona office to the attention of “CWD.”** Supplies needed to perform sampling are listed in Appendix 3.

It is imperative that samples are collected and labeled appropriately. If the source of the sample cannot be traced, it will markedly delay our CWD control efforts.

Archived samples **must be maintained for 1 year**. These frozen tissues will be stored in regional VDGIF freezers, under the custody of regional wildlife division staff. After 1 year, archived samples may be discarded, along with other biohazards or unneeded chemicals (e.g., expired formalin), at VDACS laboratories.

PERSONAL PROTECTION

- 1) Gloves will be worn at all times when collecting and handling tissue samples.
- 2) The use of goggles or face shields is encouraged.
- 3) Do not sample any cervid showing clinical signs compatible with rabies, or if the animal is a rabid suspect. Take the deer head to the nearest VDACS laboratory for sampling.

DATA COLLECTION

Legibly record as much information on the data card (Appendix 3) as possible, including name of tissue sampler (not the person who collects the head, if different), date of sampling, species, age, sex of the animal, tag number (if any) and captive facility (if any). Most of the data needed is self explanatory. It is important to make sure that the Deer ID number on the card corresponds with the samples by using the stickers provided on the card.

The following definitions describe the *origin* and *sample type* to be recorded on the data card:

Active-Hunter killed:	Deer and elk that have been collected as part of random active surveillance that have been killed by hunters.
Active-Road killed:	Deer and elk that have been collected as part of random active surveillance that have been killed by motor vehicles.
Active-Other:	Deer and elk that have been collected as part of random active surveillance that have been killed by other means; for example, kill permits.
Targeted-Clinical suspect:	Cervids that are clinically ill displaying signs consistent with CWD (see definition on page 9)
Targeted-Other:	Clinically normal cervids that are considered high risk such as captive cervids, intrusions into captive facilities, illegally possessed animals, and etc.

Specific location of the deer - in particular, road mile markers and junctions - will be recorded in addition to geographic coordinates (latitude/longitude preferred). Also, the predetermined 1 square mile grid numbers should be recorded on the data card (Appendix 4). *Otherwise, the grid numbers blank should not be used.* Comments concerning anything that is unusual or unclear should also be recorded. If the deer is hunter-killed, as much contact information about the hunter as possible should be recorded on the reverse of the card. Hunters should be given one of the CWD Q&A pamphlets when they submit a deer head. The bottom part of the data card should be removed along the perforation and given to the hunter. Hunters should be advised that they will be able to check the results on the VDGIF Web site (www3.dgif.virginia.gov/web/cwdresults/) using their initials and one of the following: the Sample ID, big game license number, or check card/confirmation number.

Once data has been entered in the online CWD database (see next page), please send the data card and tissue samples to the Verona office to the attention of “CWD.”

LABORATORY ANALYSIS

Immunohistochemistry (IHC) or enzyme-linked immunosorbent assay (ELISA) testing will be conducted at a laboratory approved by US Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS) on (1) medial retropharyngeal lymph nodes (RLN) from free-ranging white-tailed deer collected under active surveillance, and on (2) both the RLN and obex for clinical suspect white-tailed deer, hunting enclosures, captive cervids, and all other deer collected under targeted surveillance. If a test result is positive then the back up samples will be sent to the National Veterinary Services Laboratory (NVSL), Ames, Iowa for confirmatory testing.

Good tests *for white-tailed deer* will be defined as adequate sampling and testing of either RLNs or obex. *For all other species*, both the RLNs and obex must be adequately sampled and tested for it to be considered a good test. All animals that are not adequately sampled and tested will be classified as no test or invalid test.

DATABASE AND REPORTING RESULTS

All data recorded will be maintained on a web-based SQL server database. VDGIF staff will be granted access to the database as necessary. *Regional staff should enter data into the database before sending the data cards and tissue samples to the Verona office.* The database can be located at <http://dgifinternal1/cwd/>, and staff can obtain access to the database by contacting the Department's Information and Management Services. A manual on how to use the database is available upon request. In order to track submitted samples, information from the data card will be entered into the database directly after collection and given a status of "pending." Upon receipt, conclusive results will be entered, and the status of that sample will change to a good test. Samples not submitted to the laboratory, for whatever reason, will also be tracked and the reason for rejection will be recorded in the database. Inconclusive results will also be noted and tracked. Using the coordinates or grid number provided, a GIS dataset will be created. This will allow tracking of surveillance efforts and the appropriate response to a positive test result. Updates to this spatial dataset will be delayed by any errors in data recorded or entered, as well as samples that do not contain coordinates or grid numbers.

CWD MANAGEMENT

Due to the detection of CWD in Frederick County in 2009 and 2010, VDGIF implemented a number of measures to protect Virginia's deer herd, effective April 2010. The following measures will be taken to help slow and contain the spread of CWD. All measures outlined below will apply to the CWD Containment Area (Figure 2). Hunting season changes and a year-round ban on deer feeding also apply to surrounding areas (including Clarke, Frederick, Shenandoah, and Warren counties). These actions can be implemented under the Director's authority per 4VAC-15-20-220 and will not require changes to regulations.

- 1) Designate an area west of I-81 in Frederick County and the City of Winchester and west of I-81 and north of State Route 675 in Shenandoah County as the CWD Containment Area (CA).

- 2) Require mandatory CWD testing of deer harvested in the CA at designated stations on the first 3 Saturdays of the general firearms season (i.e., November 19, 26, and December 3 2011)
- 3) Prohibit feeding of deer year-round in Frederick, Shenandoah, Clarke, and Warren counties, and the City of Winchester. Consider a prohibition statewide during the next regulation cycle.
- 4) Prohibit transport of any deer carcass or deer part that originates within the CA out of the CA, except those parts currently allowed under the carcass importation regulation (4VAC15-90-293) and those carcasses or parts being transported to lined landfills, meat processors, or taxidermists within Frederick or Shenandoah counties. Require meat processors, taxidermists, road-kill pickup crews, and waste management service contractors to dispose of all deer wastes from the CA in a lined landfill in Frederick or Shenandoah counties. Promote/encourage disposal of all unused portions of hunter-killed and permit-killed deer carcasses from the CA in a lined landfill within Frederick or Shenandoah counties or in dumpsters provided by VDGIF or county waste collection sites. Encourage commercial meat processors in Frederick and Shenandoah counties to process deer individually and keep accurate records.
- 5) Prohibit rehabilitation and release of any deer from the CA. Rehabilitated deer in Frederick or Shenandoah counties from outside the CA can only be released in the county of origin.
- 6) In an attempt to reduce the deer population within/near the CA, (a) increase the daily bag limit to 2 either-sex deer during all seasons on private lands in Frederick, Shenandoah, Clarke, and Warren counties, and in the City of Winchester (maintain antlered buck limit of 2 per season), (b) employ the Earn-A-Buck requirement (as currently used in 8 other counties) on private lands in these 4 counties and city, and (c) establish all muzzleloading deer seasons as full season either-sex on private lands in these 4 counties. No changes are currently proposed for the antler rule in Shenandoah County or for public lands in any county. A research project is being contracted to conduct distance sampling and landowner surveys within the CA to determine changes in hunting intensity and deer densities before and after management efforts are put in place.
- 7) Implement a communication plan to target key stakeholders and the public to help them understand basic elements of the disease, support the VDGIF's efforts to contain it, remain calm, continue to hunt, and help with surveillance and population reduction. Communication, education, and outreach are probably the most critical components of a successful, sustained CWD management effort.

CONTACT INFORMATION

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APPENDIX 1: Sampling Procedures for Active and Target Deer

(1) Active-Hunter killed, Active-Road killed, and Active-Other Samples

- a) Remove and cut both retropharyngeal lymph nodes (RLN) longitudinally and place half from each RLN in 10% buffered neutral formalin. *Send to Verona office with data card.*
- b) Place the remaining ½ RLNs in a Whirl Pak for freezing. *Archive in region.*


(2) Clinical Samples

- a) Remove the obex and place in 10% buffered neutral formalin.
- b) Remove and cut both RLNs longitudinally and place half from each RLN in the same 10% buffered neutral formalin as the obex. *Send to Verona office with data card.*
- c) Place the remaining ½ RLNs in a Whirl Pak for freezing. *Archive in region.*

(3) Captive Samples (including tame or illegally-possessed white-tailed deer)

- a) Remove the obex and place in 10% buffered neutral formalin.
- b) Place the brain trimmings in a Whirl Pak for freezing.
- c) Remove and cut both RLNs longitudinally and place half from each RLN in the same 10% buffered neutral formalin as the obex. *Send to Verona office with data card.*
- d) Place the remaining ½ RLNs in a separate formalin container for TB testing. *Send to Verona office with data card.*
- e) If tagged, remove ear with tag and place in a Whirl Pak for freezing. Place along with brain trimmings Whirl Pak in a sandwich bag. *Archive in region.*

APPENDIX 2: Example Data Card

 DEER ID: A03382		CWD SURVEILLANCE DATA CARD DEPARTMENT USE ONLY		SAMPLE LABELS DEPARTMENT USE ONLY	
SAMPLE DATE		DATE OF DEATH		SAMPLE COLLECTOR	
ORIGIN (CHECK BOX) <input type="checkbox"/> FREE-RANGING <input type="checkbox"/> ENCLOSURE <input type="checkbox"/> CAPTIVE <input type="checkbox"/> OTHER		SAMPLE (CHECK BOX) <input type="checkbox"/> ACTIVE-HUNTER KILLED <input type="checkbox"/> ACTIVE-OTHER <input type="checkbox"/> ACTIVE-ROAD KILLED <input type="checkbox"/> TARGETED-CLINICAL SUSPECT <input type="checkbox"/> TARGETED-OTHER		1 A03382	
SPECIES (CHECK BOX) <input type="checkbox"/> WHITE-TAILED DEER <input type="checkbox"/> OTHER (SPECIFY HERE)		SEX (CHECK BOX) <input type="checkbox"/> MALE <input type="checkbox"/> UNKNOWN <input type="checkbox"/> AGE (YEARS) <input type="checkbox"/> FEMALE		2 A03382	
LOCATION DESCRIPTION _____ _____ _____		COUNTY/CITY OF DEATH MAP GRID NO.		3 A03382	
CAPTIVE FACILITY EAR TAG NO.		UTM NAD 83 UTM 17 <input type="checkbox"/> LAT/LONG. E: N: <input type="checkbox"/> UTM 18 <input type="checkbox"/> OTHER (SPECIFY BELOW)		4 A03382	
CAPTIVE FACILITY EAR TAG NO.		UTM NAD 83 UTM 17 <input type="checkbox"/> LAT/LONG. E: N: <input type="checkbox"/> UTM 18 <input type="checkbox"/> OTHER (SPECIFY BELOW)		5 A03382	
LOCATION COORDINATES LATITUDE/LONGITUDE (DECIMAL DEGREES) X: Y:		COORDINATE SYSTEM <input type="checkbox"/> UTM 17 <input type="checkbox"/> LAT/LONG. <input type="checkbox"/> UTM 18 <input type="checkbox"/> OTHER (SPECIFY BELOW)		PLEASE PLACE LABELS ON SAMPLES AS LISTED BELOW Place 1 label on top of formalin container(s) and 1 label on side. Use 1 label per whirlpack. Also write # with permanent marker.	
SAMPLE REJECTED? <input type="checkbox"/> NO <input type="checkbox"/> YES WHY? <input type="checkbox"/> INSUFFICIENT LOCATION <input type="checkbox"/> INSUFFICIENT CONTACT <input type="checkbox"/> INADEQUATE SAMPLE TISSUE <input type="checkbox"/> OTHER					

VIRGINIA DEPARTMENT OF GAME & INLAND FISHERIES CWD SURVEILLANCE DEER ID NO.: A03382

		CWD SURVEILLANCE HUNTER INFORMATION PLEASE COMPLETE BELOW	
FIRST NAME		MI	LAST NAME
ADDRESS			
CITY		STATE	ZIP
CONTACT PHONE ()			
CHECK STATION NO. OR PROCESSING FACILITY		CHECK CARD OR PHONE CONFIRMATION NO.	OR BIG GAME LICENSE NO.
DATE OF DEATH	COUNTY/CITY OF DEATH	MAP GRID NO.	
PLEASE NOTE GPS COORDINATES, INTERSECTION, MILE MARKER, WATER FEATURE, ETC.			
SPECIFIC LOCATION WHERE BEEN KILLED			

12010 (5/06) 664195-3/1 **BOLD ITEMS ARE REQUIRED**

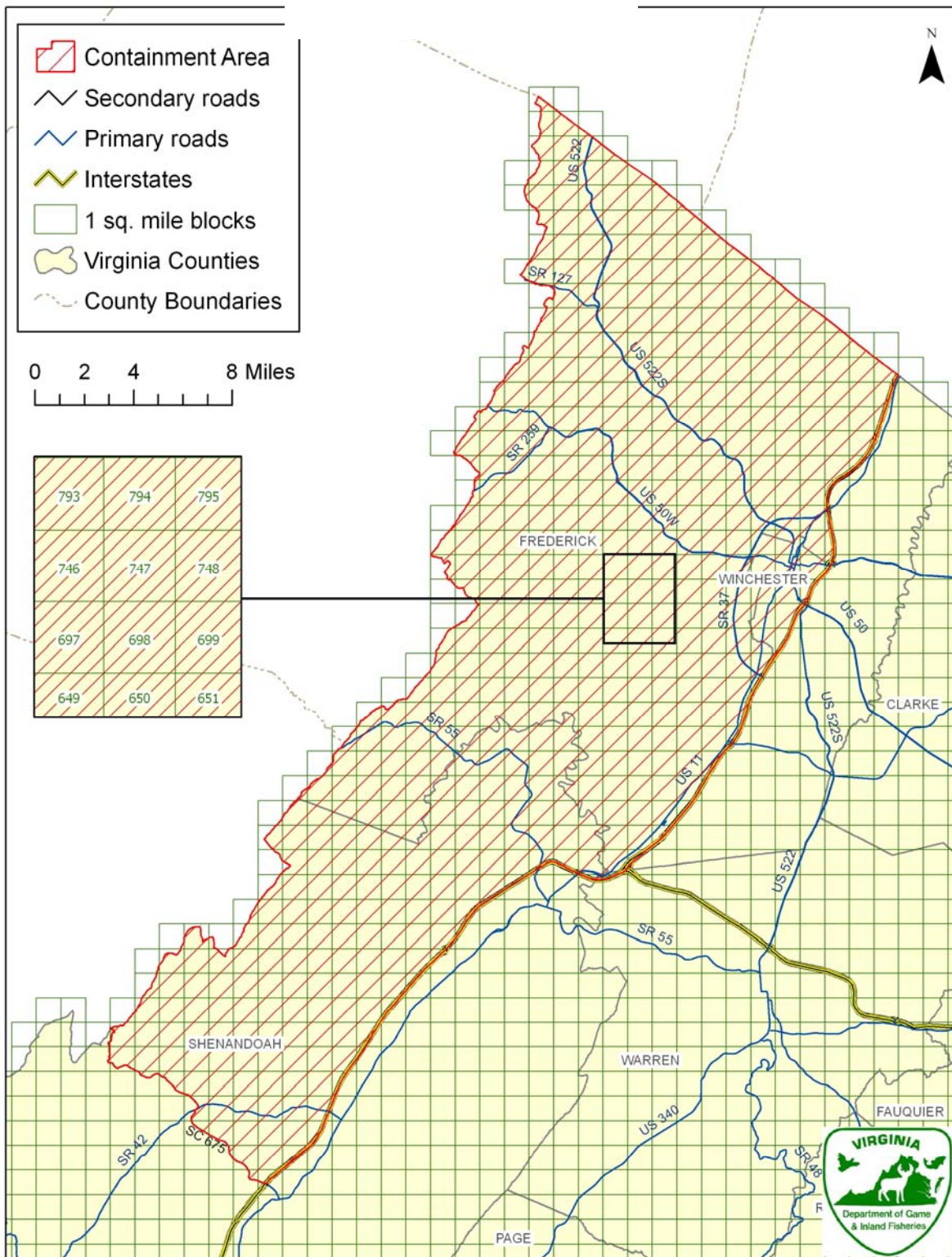
PLEASE KEEP THIS SECTION FOR YOUR RECORDS

To obtain for CWD test results please check the Department of Game and Inland Fisheries website at www.dgif.virginia.gov/cwd and use the ID number on back and your **first and last initials** to look for the results. Initials must match name on the data card: **First** _____ **Last** _____

APPENDIX 3: Equipment and Supplies for CWD sampling

- 1 container to hold and store all supplies and/or to keep deer heads cool, as needed
- 1 knife and 1 brush lopper for cutting off the deer heads
- Cutting board to protect table/tailgate, as appropriate
- Disposable latex gloves
- Large plastic Ziploc bags for heads
- Ziploc sandwich bags (for the data card)
- Data cards
- Permanent markers
- Bucket, disinfectant, and brush for cleaning the knife and loppers. For deer collected in the CWD Containment Area, a 20% bleach:water solution should be used to clean equipment. Elsewhere, disinfectants such as Lifeguard and Cidex can be used. The mixture rate is 2 ounces per gallon of water. Wear gloves when using any of these substances.
- WD40 to keep the knife and loppers from rusting after being washed
- Shop towels for cleaning up equipment
- Metal pans for cleaning and rinsing
- Scalpel blades and handle
- Needlenose pliers for removing scalpel blades
- Used blade disposal container
- Forceps
- Formalin and formalin containers
- CWD brochures for the hunters and public
- Instructions for submitting trophy heads through taxidermists
- Grid map if sampling in the Containment Area

- **APPENDIX 4. Map Grid Numbers**



Sources: DCR, VDOT, DGIF

Map created 7/12/11 DGIF- KJR, GISP

APPENDIX 5. Statewide CWD sample allocation among counties in Virginia, 2011.

County	CWD Samples Needed
Accomack	11
Albemarle	9
Alleghany	7
Amelia	14
Amherst	11
Appomattox	7
Augusta	8
Bath	8
Bedford	16
Bland	8
Botetourt	11
Brunswick	9
Buchanan	3
Buckingham	8
Campbell	8
Caroline	12
Carroll	7
Charles City	18
Charlotte	8
Chesapeake (City of)	5
Chesterfield	10
Clarke	14
Craig	11
Culpeper	12
Cumberland	14
Dickenson	6
Dinwiddie	8
Essex	11
Fairfax	10
Fauquier	12
Floyd	10
Fluvanna	9
Franklin	11
Frederick	14
Giles	12
Gloucester	10

Goochland	12
Grayson	14
Greene	8
Greensville	10
Halifax	8
Hanover	9
Henrico	14
Henry	8
Highland	9
Isle of Wight	11
James City	13
King & Queen	12
King George	15
King William	12
Lancaster	16
Lee	6
Loudoun	19
Louisa	8
Lunenburg	7
Madison	10
Mathews	9
Mecklenburg	7
Middlesex	10
Montgomery	11
Nelson	9
New Kent	15
Newport News (City of)	6
Northampton	10
Northumberland	12
Nottoway	11
Orange	12
Page	7
Patrick	7
Pittsylvania	10
Powhatan	14
Prince Edward	10
Prince George	14
Prince William	10
Pulaski	10
Rappahannock	12
Richmond	13
Roanoke	11

Rockbridge	8
Rockingham	8
Russell	6
Scott	11
Shenandoah	11
Smyth	8
Southampton	14
Spotsylvania	8
Stafford	10
Suffolk (City of)	9
Surry	15
Sussex	10
Tazewell	8
Virginia Beach (City of)	5
Warren	12
Washington	6
Westmoreland	12
Wise	4
Wythe	8
York	16
	1000