Requirements for Movement of Farmed Cervids from Canada and the United States into the Province of Alberta

Fifteen pages total

DEFINITIONS:

Acceptable surveillance for Chronic Wasting Disease in farmed cervids in a defined zone: All animals 12 months of age and older that die on farms for any reason, including slaughter, must be tested for Chronic Wasting Disease using an approved diagnostic test.

Acceptable surveillance for Chronic Wasting Disease (CWD) in farmed cervids in a herd: The herd must be on a CWD surveillance program equivalent to the CFIA CWD Herd Certification Program for a minimum of three (3) years using an approved diagnostic test for CWD.

Acceptable surveillance for Chronic Wasting Disease in free-ranging cervids: The zone must test enough free-ranging cervids annually to demonstrate with 95% confidence that the prevalence of Chronic Wasting Disease is less than 1% (see Appendix A) using an approved diagnostic test for CWD.

Approved Diagnostic Test for CWD: Testing for the disease can take any form approved and accepted for CWD diagnostics by the Canadian Food Inspection Agency (CFIA).

Clinical signs in cervids suggestive of Johne's disease: Elk or deer of all ages show weight loss over a period of a few months, diarrhea. Young deer fail to thrive and are in poor body condition, often with a scruffy haircoat. There is low morbidity but high mortality.

Clinical signs consistent with neurological disease: Progressive central neurologic disease characterized by posterior ataxia, knuckling, loss of proprioception, hyperextention of the fetlocks, with progression to complete posterior and anterior paresis.

Disease Response Protocol: A protocol at least equivalent to the current Chronic Wasting Disease Response Program of the Canadian Food Inspection Agency, including quarantine, traceback, trace-forward and depopulation. This protocol is implemented following any diagnosis of Chronic Wasting Disease in farmed cervids within or originating in the zone.

Zone: A state, province, territory, or subunit thereof where farmed cervid movement in and out is controlled by a legislated, regulatory body

Enzootic zone: A zone in which a parasite or disease agent is naturally maintained in a local free-ranging animal population.

Herd: A group of animals managed as a separate and discrete unit not commingled with other groups of susceptible species. All cervids on two or more geographically separated premises under the same management, but on which animals have been interchanged within one year preceding the application to import or where there has been physical contact of animals between the premises, is considered one herd. Contact of animals between separated premises under common management is assumed to have occurred unless complete

separation and biosecurity measures between premises can be established by the herd owner or manager. Fencing around the herd must be adequate to prevent ingress and egress of cervids.

Herd of origin: The immediate herd from which the animal is being imported.

This protocol is based on the current status of cervid issues and concerns as outlined in the following documents: Risk Assessment and Risk Management Suggestions for the Importation of Elk into Alberta from within Canada and the United States (RAAC 2004), Risk Assessment and Risk Management Suggestions for the Importation of White-tailed Deer into Alberta from within Canada and the United States (RAAC 2004), and [Risk Assessment and Risk Management Suggestions for the Importation of Mule Deer into Alberta from within Canada and the United States (RAAC 2000)] as well as Recommended Policy for the Importation of Farmed Cervids from Canada and the United States into the Province of Alberta" (April 28, 2004).

The protocol may be revised as appropriate or terminated by Alberta Government officials, following consultation with representatives of appropriate cervid associations.

Conditions for Import:

- The original or faxed copy of the Import Permit issued by the Government of Alberta and a Canadian Transportation Authorization Permit issued by the Canadian Food Inspection Agency (CFIA) and any other necessary documentation pertaining to the movement of live farmed cervid animals must be provided for inspection at the location and to the official specified in the Import Permit.
- 2. For the purposes of these conditions, only white- tailed deer, (mule deer) and elk species and sub-species as listed in the Alberta Livestock Industry Diversification Act are eligible for importation.
- The animal(s) being proposed for import must be certified in writing by the owner of the herd of
 origin as captive animals. The animal(s) must have been born and raised in captivity and, so far
 as can be determined, must not have had exposure to wild animals other than fence line
 contact.
- 4. A negative result using an approved genetic test for red deer genes performed by a laboratory approved by the Government of Alberta is required for all live elk, donors of elk semen, and the sire and dam of all embryos imported into Alberta. All progeny resulting from the imported semen and embryos may be tested for red deer genes by one year of age using an approved test at a laboratory approved by the Government of Alberta. Live elk, embryos and semen may be imported without testing for red deer genes if evidence is provided that the herd of origin has certification equivalent to Alberta's Pure Herd Status.
- 5. Historical documentation of all animals in the herd of origin, as required in this document, must be verified in writing by the appropriate CFIA or Provincial/Territorial/State official.
- 6. From time of birth or prior to any movement from the premises where the animal was born, the animal must have been uniquely identified with an approved tag and have a continuous record of its' identification and movement. Such records must have been verified in writing by the appropriate provincial, federal or state official and presented to designated officials of the Government of Alberta for examination prior to the date of import.

- 7. Each animal must be uniquely identified with two clearly readable tamper proof dangle tags, one in each ear. If the jurisdiction of origin does not require such a tag, the animal(s) proposed for import must be tagged with appropriate tags purchased from AAFRD. These tags must be applied before the animal(s) depart from the herd of origin.
- 8. In the case of semen or embryos collected from donor cervids, a Certificate of Health and a statement signed by the collecting veterinarian certifying that the semen and/or embryos were collected in accordance with CFIA requirements must be provided.
- 9. Any change to an import permit by a person, other than an authorized Government of Alberta representative, will render the permit invalid.
- 10. A written statement verifying the freedom of the herd of origin from visible evidence of contagious or infectious diseases in general, and from the specific concerns listed below, signed by the manager of the herd of origin, the owner of the animal(s) proposed for import and the veterinarian familiar with the herd and its health history must accompany the application for an Alberta Import Permit..
- 11. Animals may be imported provided the following criteria have been met (see Appendix B.):

11.1 Chronic Wasting Disease

Alberta will require documentation of the risk of the herd and zone as outlined in the categories identified in the "Risk Assessment and Risk Management Suggestions for the Importation of Elk (or White-tailed Deer) into Alberta from within Canada and the United States" (March 8, 2004) and decisions will be made within the context of the document entitled "Recommended Policy for the Importation of Farmed Cervids from Canada and the United States into the Province of Alberta" (April 27, 2004). The documentation must be acceptable to the Government of Alberta and include verifiable records of the movement of all animals in a herd for the last five years preceding the application for import.

Elk and White-tailed Deer:

High risk zone – a zone which meets the following criteria:

- a) The zone has not had acceptable surveillance for Chronic Wasting
 Disease in free-ranging cervids for at least the previous three (3) years,
 or
- b) The zone has not had acceptable surveillance for Chronic Wasting Disease in farmed cervids for at least the previous three (3) years, **or**
- c) The zone has not had an acceptable disease response protocol in place for at least the previous three (3) years.

The importation of live cervids or embryos from zones considered high risk for Chronic Wasting Disease is prohibited.

Medium risk zone – a zone where Chronic Wasting Disease is enzootic in free-ranging cervids and which meets the following criteria:

a) The zone has had acceptable surveillance for Chronic Wasting Disease in **both** free-ranging and farmed cervids for at least the previous three

- (3) years, and
- b) The zone has had an acceptable disease response protocol in place for at least the previous three (3) years, **and**
- c) The zone has not imported live cervids or embryos from high risk zones in the previous three (3) years.

Given current science and the uncertainty of the incubation period of Chronic Wasting Disease, especially with low dose exposure, three (3) years of surveillance at the herd level is considered necessary from zones of low risk. Five (5) years of surveillance at the herd level from zones of medium risk will provide additional assurance that farmed cervid herds are not incubating CWD. No imports are allowed from zones of high risk.

The importation of live cervids or embryos from zones considered medium risk for Chronic Wasting Disease may be permitted as long as the following mitigations have been put in place at the zone and at the farm level:

- Every herd/premises the animal has resided in/on in the previous five (5) years must have participated in a surveillance and control program. Surveillance can be accomplished by one of the methods set out below:
 - a. Five (5) years of surveillance completed in the exporting zone:
 - b. First three (3) years of surveillance completed in the exporting zone and remaining two (2) years in Alberta, OR first four (4) years of surveillance completed in the exporting zone and remaining one (1) year in Alberta, with the following mitigations:
 - i. The animal must be uniquely identified with an approved import tag; **and**
 - The imported animal must not be moved off the importing premises for the remaining year(s) of surveillance, except for slaughter/euthanasia, and
 - iii. In the case of death 100% of imports, regardless of age, are tested for CWD; **and**
 - iv. The importing premises must be fully compliant with Alberta's mandatory CWD surveillance program and Livestock Industry Diversification Act (LIDA), and
 - v. The importing premises may be re-inspected by Alberta Agriculture, Food and Rural Development staff in order to insure integrity of all fences before the import animals arrive, **and**
 - vi. The importing herd is subjected to periodic inspections to insure the import animals are present and not showing clinical signs consistent with neurological disease.
- 2. CWD must never have been diagnosed in any herd or premises where the animal proposed for import has resided at any time; and
- 3. The herd of origin must not contain or have contained any animal that has had contact with a herd diagnosed with CWD unless the contact animal tested negative for CWD by an approved diagnostic test, or 5

- (five) years have elapsed from the time of last contact with the CWD herd.
- 4. At the time of collection, donor animals of embryos must meet the same requirements as a live import.

Low risk zone – a zone where Chronic Wasting Disease is **not** enzootic in free-ranging cervids and which meets all the following criteria:

- a) The zone has had acceptable surveillance for Chronic Wasting Disease in **both** free-ranging and farmed cervids for at least the previous three (3) years; and
- b) The zone has had an acceptable disease response protocol in place for at least the previous three (3) years, **and**
- c) The zone has not imported live cervids or embryos from high or medium risk zones in the previous three (3) years.

The importation of live cervids or embryos from zones considered low risk for Chronic Wasting Disease may be permitted as long as the following mitigations have been put in place at the zone and at the farm level:

- 1. Every premises that the animal has ever resided on must have participated in an acceptable surveillance and control program for at least three (3) years prior to import; **and**
- 2. CWD has never been diagnosed in any herd or premises where the animal proposed for import has resided at any time; **and**
- 3. The herd of origin must not contain or have contained any animal that has had contact with a herd diagnosed with CWD unless the contact animal tested negative for CWD by an approved diagnostic test, or five (5) years have elapsed from the time of last contact with the CWD herd.
- 4. At the time of collection, donor animals of embryos must meet the same requirements as a live import.

11.2 Meningeal Worm - (Parelaphostrongylus tenuis)

Elk:

High risk zone – a zone where meningeal worm is enzootic in free-ranging cervids or has been diagnosed in farmed cervids.

Medium risk zone – a zone where meningeal worm is not enzootic in free-ranging cervids, but the zone has imported cervids from a high risk or another medium risk zone in the last ten (10) years without import mitigations equivalent to Alberta's.

There is no restriction in relation to *P. tenuis* on the import of elk semen or embryos from zones considered high or medium risk for *P. tenuis*.

The importation of live elk will be permitted from zones considered high or medium risk for *P. tenuis* if:

- The herd of origin is documented free of clinical signs consistent with neurologic disease for a period of ninety (90) days prior to import, OR documentation is provided that all cervids with neurological signs were tested with appropriate methods to detect meningeal worm and were found negative, and
- 2. Calves under the age of six (6) months at the time of importation received monthly injectable ivermectin treatments of 220 μ g/kg body weight OR were treated monthly with the pour on form of ivermectin at a dosage of 500 μ g/kg of body weight applied directly to the skin beginning within the first two weeks of life, **or**
- 3. The herd of origin has negative Baermann test results to a level of 95% confidence on faecal samples from all the elk on the same premises, collected and processed according to a procedure approved by the Government of Alberta. Testing must have been done within the previous three (3) years, and with no subsequent imports of animals from high or medium risk zones, or
- 4. Elk, regardless of age, were confined in a snail and slug-free environment for a minimum of 60 days immediately prior to importation and were tested at 30 day intervals for the presence of *P. tenuis* excretory/secretory antibodies as detected by an indirect enzyme linked immunosorbent assay(ES-ELISA) (Ogunremi et al, 2002) from a laboratory approved for the ES-ELISA by the Government of Alberta. The first test must be no less than 30 days after the start of confinement and the second test at least 30 days after the first test.
- 5. Calves were kept in a snail and slug free environment from two (2) days of birth until import into Alberta.

Low risk zone – a zone where meningeal worm is not enzootic in free-ranging cervids, and the zone has not imported cervids from a high or medium risk zone without import mitigations equivalent to Alberta's.

There are no restrictions with regard to *P. tenuis* on importation of live elk or embryos from zones considered low risk for *P. tenuis*.

White-tailed Deer:

High risk zone – a zone where meningeal worm is enzootic in free-ranging cervids or has been diagnosed in farmed cervids.

Medium risk zone – a zone where meningeal worm is not enzootic in free-ranging cervids, but the zone has imported cervids from a high risk or another medium risk zone in the last ten (10) years without import mitigations equivalent to Alberta's.

There is no restriction with regard to *P. tenuis* on the import of white-tailed deer semen or embryos from zones considered high or medium risk for *P. tenuis*.

The importation of live white-tailed deer will be permitted from zones considered high or medium risk for *P. tenuis* if:

- Fawns under the age of six (6) months at the time of importation received monthly injectable ivermectin treatments of 220 μg/kg body weight OR were treated monthly with the pour on form of ivermectin at a dosage of 500μg/kg of body weight applied directly to the skin beginning within the first two weeks of life, or
- 2. The herd of origin has negative Baermann results to a level of 95% confidence on faecal samples from all the white-tailed deer on the same premises, collected and processed according to a procedure approved by the Government of Alberta. Testing must have been done within the previous three (3) years, and with no subsequent imports of animals from high or medium risk zones, **or**
- 3. White-tailed deer, regardless of age, were confined in a snail and slug-free environment for a minimum of 60 days immediately prior to importation and were tested at 30 day intervals for the presence of P. tenuis excretory/secretory antibodies as detected by an indirect enzyme linked immunosorbent assay.(ES-ELISA) (Ogunremi et al, 2002) from a laboratory approved for the ES-ELISA by the Government of Alberta. The first test must be no less than 30 days after the start of confinement and the second test at least 30 days after the first test.
- 4. Fawns were kept in a snail and slug free environment from 2 (two) days of birth until import into Alberta.

Low risk zone – an zone where meningeal worm is not enzootic in free-ranging cervids, and the zone has not imported cervids from a high or medium risk zone without import mitigations equivalent to Alberta's.

There are no restrictions with regard to *P. tenuis* on importation of live white-tailed deer, semen or embryos from zones considered low risk for *P. tenuis*.

11.3 Tissue Worm - (Elaphostrongylus cervi)

Elk:

High risk zone – a zone in which *E*. *cervi* is enzootic or established.

There are currently no zones considered high risk for *E. cervi* in Canada or the United States.

Medium risk zone – a zone that has imported red deer or elk from high risk zones.

There is no restriction in relation to *E. cervi* on the import of elk semen or embryos from zones considered medium risk for *E. cervi*.

The importation of live elk will be permitted from zones considered medium risk for *E. cervi* if:

- Calves under the age of six (6) months at the time of importation received monthly injectable ivermectin treatments of 220 μg/kg body weight OR were treated monthly with the pour on form of ivermectin at a dosage of 500μg/kg of body weight applied directly to the skin beginning within the first two weeks of life, or
- 2. The herd of origin has negative Baermann results to a level of 95% confidence on faecal samples from all the elk on the same premises, collected and processed according to a procedure approved by the Government of Alberta. Testing must have been done within the previous three (3) years, and with no subsequent imports of animals from high or medium risk zones, or
- 3. Elk, regardless of age, were confined in a snail and slug-free environment for a minimum of 60 days immediately prior to importation and were tested at 30 day intervals for the presence of *P. tenuis* excretory/secretory antibodies as detected by an indirect enzyme linked immunosorbent assay.(ES-ELISA) (Ogunremi *et al*, 2002) from a laboratory approved for the ES-ELISA by the Government of Alberta. The first test must be no less than 30 days after the start of confinement and the second test at least 30 days after the first test.

Low risk zone – a zone that has not imported red deer or elk from high risk zones.

There are no restrictions with regard to *E. cervi* on importation of live elk, semen or embryos from zones considered low risk for *E. cervi*.

White-tailed Deer: Not a known host therefore no restrictions.

11.4 Arterial (Carotid) Worm - (Elaeophora schneideri)

Elk:

High risk zone – a zone where clinical signs consistent with *E. schneideri* infection are present in farmed or free-ranging elk.

 To import elk from a high risk zone, the herd of origin must be documented free of clinical signs consistent with arterial worm infections for a period of at least one year preceding an application for import.

Elk semen and embryos may be imported from zones considered high risk for E. schneideri.

Medium risk zone – a zone which has imported mule deer or white-tailed deer from a high risk zone.

Low risk region – a zone which has not imported mule deer or white-tailed deer from a high risk zone.

There are no restrictions with regard to *E. schneideri* on importation of live elk or embryos from zones considered medium or low risk for *E. schneideri*.

White-tailed Deer:

High risk zone – a zone where arterial worm is enzootic in free-ranging deer.

Only white-tailed deer embryos may be imported from zones considered high risk for *E. schneideri*.

Medium risk zone – a zone which has imported mule deer or white-tailed deer from a high risk zone

White-tailed deer from herds that do NOT contain deer from an enzootic zone can be imported from zones considered medium risk for *E. schneideri*.

Low risk zone – a zone which has not imported mule deer or white-tailed deer from a high risk zone.

There are no restrictions with regard to *E. schneideri* on importation of live white-tailed deer embryos from zones considered low risk for *E. schneideri*.

11.5 Muscle Worm - (Parelaphostrongylus andersoni)

Elk: Not a known host, therefore no restrictions.

White-tailed Deer:

High risk zone – a zone where muscle worm is enzootic in free-ranging white-tailed deer or caribou.

There are no restrictions with regard to *P. andersoni* on importation of white-tailed deer semen or embryos from zones considered high risk for *P. andersoni*.

The importation of live white-tailed deer will be permitted from zones considered high risk for *P. andersoni* if:

- Fawns under the age of six (6) months at the time of importation received monthly injectable ivermectin treatments of 220 μg/kg body weight OR were treated monthly with the pour on form of ivermectin at a dosage of 500μg/kg of body weight applied directly to the skin beginning within the first two weeks of life.
- 2. Individuals test negative to an approved diagnostic test, should one become available.

Medium risk zone – a zone where muscle worm is not enzootic in free-ranging white-tailed deer or caribou, but the area has imported deer or caribou from a high risk or another medium risk zone

The importation of live white-tailed deer will be permitted from zones considered medium risk for *P. andersoni* if:

- 1. Fawns under the age of six (6) months at the time of importation received monthly injectable ivermectin treatments of 220 μg/kg body weight OR were treated monthly with the pour on form of ivermectin at a dosage of 500μg/kg of body weight applied directly to the skin beginning within the first two weeks of life.
- 2. The herd of origin has negative Baermann results to a level of 95% confidence on faecal samples from all the white-tailed deer on the same premises, collected and processed according to a procedure approved by the Government of Alberta. Testing must have been done within the previous three (3) years, and with no subsequent imports of animals from high or medium risk areas.
- 3. Individuals test negative to an approved diagnostic test, should one become available.

Low risk zone – an zone where lung worm is not enzootic in free-ranging white-tailed deer, and the zone has not imported deer or caribou from a high or medium risk zone.

There are no restrictions with regard to *P. andersoni* on importation of live white-tailed deer, semen or embryos from zones considered low risk for *P. andersoni*.

11.6 Lyme Disease Vector (<u>Ixodes</u> <u>scapularis</u>, <u>Ixodes</u> <u>pacificus</u>) Elk and White-tailed Deer

High risk zone -Where the tick vector is established

All other zones are considered low risk

All animals proposed for import must be treated with a suitable acaricide and anthelmintic within 48 hours prior to export and again 28-42 days after arrival at the destination farm in Alberta. The application of the treatment must be verified by a licensed veterinarian.

- 12. The animal(s), donor animal(s) or semen or embryo(s) being presented for importation must not come into **contact** with any animals, products or equipment of a lesser zoosanitary health status during the periods of residency, isolation, storage and transportation required before arrival at the premises of destination in Alberta.
- 13. The **importer is responsible for all costs** incurred or associated with approval of the **Import** Permit and subsequent inspection.
- 14. The issuance of an Alberta Import Permit does not relieve the owner or the transporter of the obligation to comply with any other relevant federal, provincial or municipal legislation or requirement that may otherwise apply.
- 15. Failure to comply with the conditions contained in the Alberta Import Permit or the provisions of the Livestock Industry Diversification Act and Regulations and/or the Health of Animals Act and Regulations may result in the cancellation of the permit and the seizure of the animals, semen or embryos involved and subsequent forfeiture to the Crown or the removal of the animal(s), semen or embryos from Alberta, without compensation and at the expense of the importer.

APPENDIX A - Sample Size Required for Detecting CWD with Random Sampling

For probability of detecting one positive = 95% and prevalence = 1%

Population	Number sampled
Size	
10	10
50	50
100	96
150	130
200	156
300	190
400	211
500	225
1,000	259
1,500	271
2,000	278
2,500	282
3,000	285
3,500	287
4,000	288
4,500	289
5,000	290
6,000	292
7,000	293
8,000	294
9,000	294
10,000	295
50,000	298
100,000	298
Infinite	299

This table is adapted from the approximation to the hypergeometric distribution provided by Roe and Cannon (1982, p. 30).

Appendix B

	Areas			
Hazard	High Risk Zone	Medium Risk Zone	Low Risk Zone	
Hazard Chronic Wasting Disease (CWD)	High Risk Zone • Import is prohibited		Low Risk Zone Same as for Medium Risk Zone, except 3 years of acceptable surveillance completed in the exporting zone.	
		any animal that has had contact within the past five (5) years with an animal from a herd diagnosed with CWD unless the animal it had		
		contact with tested negative for CWD; • At the time of collection, donor		
		animals of embryos must meet the same requirements as a live import.		

Meningeal Worm - (Parelaphostrongylus tenuis)	 Treated calves/fawns under 6 mos old; Negative Baermann results to 95% confidence within previous 3 years with no subsequent imports from high or medium risk area; Negative serology test. Calves/fawns kept in a snail and slug free environment from two (2) days of birth until import into Alberta. Elk only: no clinical signs for 90 days 	As for High Risk Zone	No restrictions
Tissue Worm - (Elaphostrongylus cervi)	Not applicable	Treated calves/fawns under 6 mos old; Negative Baermann results to 95% confidence within previous 3 years with no subsequent imports from high or medium risk area; Negative serology test. WTD: no restrictions	No restrictions
Arterial (Carotid) Worm - (Elaeophora schneideri)	Elk: • No clinical signs for 1 year WTD:	Elk: • No restrictions WTD:	No restrictions
	 Semen and embryos only 	 No herd contact with enzootic area 	

Muscle Worm - (Parelaphostrongylus andersoni)	Elk: • No restrictions	Elk: • No restrictions	No restrictions
	 WTD: Treated fawns under 6 mos old; Approved test if available 	 WTD: Treated fawns under 6 mos old; Negative Baermann results to 95% confidence within previous 3 years with no subsequent imports from high or medium risk area; Approved test if available 	
Lyme Disease Vector (Ixodes scapularis, Ixodes pacificus)	Suitable treatment before and after arrival.	Suitable treatment before and after arrival.	 Suitable treatment before and after arrival.