

HOW TO USE BIOSECURITY TO PROTECT YOUR CERVID OPERATION AGAINST CWD

11/17/2022

The spread of an infectious disease like CWD requires: 1) an infectious agent (for CWD, infectious prion material shed from an infected cervid), 2) a transmission method, and 3) a susceptible cervid. Improved biosecurity can help you reduce or eliminate the various transmission routes threatening the health of your herd. While research is underway to evaluate the role of breeding to reduce genetic susceptibility to CWD, improving biosecurity is something cervid farmers can do today to reduce risk.

Completing our [biosecurity assessment worksheet](#) can help you identify the gaps in your farm's defenses against a CWD infection.

How are farmed cervids infected with CWD?

Direct transmission

- Through purchases of cervids from other farms later found infected.
- From infected wild deer through fencing breaches or through-the-fence contact.

Indirect transmission

- Sharing of contaminated equipment, feed or water from farms later found infected.
- From carcasses of infected deer brought into the farm from hunting or taxidermy.
- Contacts with infected wild deer through contaminated feed or water, mammalian and avian scavengers, and other vectors (potentially including ticks or insects) in areas near infected wild deer.



While any of these pathways are possible routes of infection, recent evidence from a study of white-tailed deer operations in MN, WI, and PA indicated two common sources of CWD infection are most frequent: 1) introduction of cervids from herds later detected as CWD-positive, and 2) indirect exposures through the environment from infected wild deer.

What can you do to prevent CWD on your cervid operation?

The University of Minnesota CWD [Biosecurity Assessment Worksheet](#) provides a systematic way for you to evaluate and prioritize the risks of introduction of CWD to your operation through different transmission pathways. This voluntary tool presents a series of questions about your operation and the biosecurity measures you currently use. Your answers create a customized roadmap for making your operation more secure. You can complete this assessment yourself or ask your veterinarian to complete this assessment with you, confidentially, for your operation.

Take action to reduce or eliminate CWD transmission routes

After you have identified the transmission pathways with the highest risk of CWD introduction for your operation, you can take steps to reduce your risk.



For more information, and to try out this assessment yourself, scan the QR code or go to z.umn.edu/CWDbiosecurity

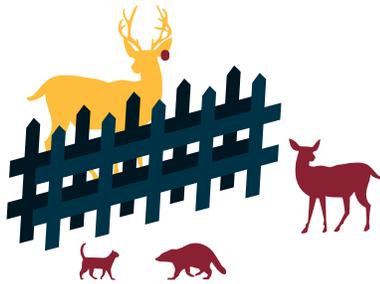
EXAMPLES CERVID OPERATIONS

The farm on the top was at highest risk through purchases of cervids from other operations, while the farm on the bottom was at highest risk through potential exposures to infected wild deer through indirect exposures.

Transmission pathway risk levels

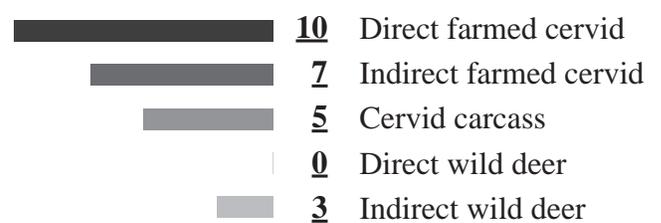
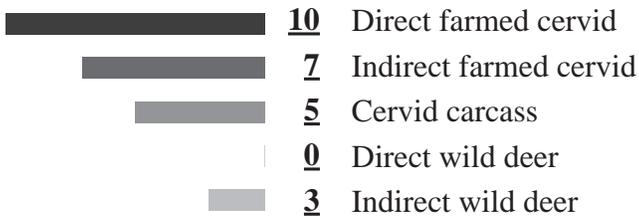
Farm 1

Highest risk
Indirect wild cervid



Farm 2

Highest risk
Direct farmed cervid



CWD Biosecurity Assessment and Herd Biosecurity Plan for Cervid Operations

11/17/2022

This CWD Biosecurity Assessment provides a systematic framework for you to evaluate and prioritize risks of introduction of CWD to your operation through potential transmission pathways.

There are three parts to this CWD Biosecurity Assessment, which should be completed in order:

- Part A. Operation Information
- Part B. CWD Biosecurity Assessment
- Part C. CWD Herd Biosecurity Plan

Note: Your veterinarian can be a great resource to you as you complete this CWD Biosecurity Assessment and develop your CWD Herd Biosecurity Plan. For more information about reducing risks of CWD introduction to your operation, go to the website: cwdbiosecurity.umn.edu

PART A. OPERATION INFORMATION

This section provides background information to prepare for completing the Biosecurity Assessment.

1. Date of assessment: _____

2. Name of cervid operation

Address:

Contact information:

3. Number of cervids

a. As of today, how many cervids ≥ 12 months of age are on the premises?	
a. How many of these are females?	
b. How many of these are males?	
b. As of today, how many cervids < 12 months of age are on the premises?	
c. Total number of cervids	

4. Cervid species

a. How many are white-tailed deer?	
b. How many are elk?	
c. How many are other cervid species? (list species) _____	
d. Total number of cervids	

5. Which of the following describes your operation? (Select all that apply)

a. Breeding stock		b. Hunting preserve	
c. Meat/slaughter		d. Exhibition	
e. Antler/velvet production		f. Pets/pleasure	
g. Trophy bull/buck sales		h. Other (specify)	

Which of the above do you consider to be the primary operation type(s)? (Circle above)

6. What is the distance from your operation to the closest confirmed CWD-positive farmed cervid and the closest CWD-positive free-ranging cervid in miles? If unknown, your State animal health and natural resources agencies may be able to provide this information upon request.

	≤6 mi	7-25 mi	>25 mi
Distance to closest CWD-positive cervid farm			
Distance to closest CWD-positive free-ranging cervid			

7. It may be helpful to create a written **Site plan for your operation, identifying areas with cervid access, feeding and water locations, stored feeds, carcass disposal, crop fields and other surrounding land cover. Note: Use of a Google Earth photo may be helpful as the starting point for this site plan.**

PART B. CWD BIOSECURITY ASSESSMENT

This section is the actual assessment of the risk of introducing CWD to your operation. Risks are scored with numerical values, and higher numbers indicate higher risks of introduction of CWD to your operation. Use the highest scoring category for each section that most closely matches your operation situation. *You can use your judgment to use scores below the maximum for each category.*

Direct contact with infected farmed cervid

1. Number of farmed cervids introduced to operation in previous 5 years	Max Score	Farm Score
≥1 cervid introduced to operation from cervid operations later found to be CWD positive	30	
≥1 cervid introduced to operation from ≥5 other cervid operations (not CWD positive)	10	
≥1 cervid introduced to operation from <5 other cervid operations (not CWD positive)	5	
No cervids introduced to operation from other cervid operations	0	

Total Score (Question 1) - Direct contact with infected farmed cervid	/30
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Indirect contact with infected farmed cervid in previous 5 years

2. Shared use of vehicles/trailers/equipment/clothing (including reproductive)	Max Score	Farm Score
Vehicles/trailers/equipment/boots/clothing (including reproductive equipment) used for your cervids have been used on other cervid operations and without cleaning and disinfection following travel.	6	
Use of vehicles/trailers/equipment/boots/clothing that visited other cervid operations without cervid contact	2	
No use of vehicles/trailers/equipment/boots/clothing (including reproductive equipment) for your cervids that was also used on other operations	0	
3. Use of cervid semen samples for artificial insemination	Max Score	Farm Score
Use of semen samples from an outside source	2	
No use of semen samples or used semen samples from on-farm source	0	

	Closest CWD positive farmed cervid (mi)			Farm Score
	≤6	7-25	>25	
4. Mammalian or avian scavenger access to cervid pens and feed storage	≤6	7-25	>25	Farm Score
Evidence observed of scavengers inside or near outside of perimeter fence	2	0	0	
No evidence observed of scavengers inside or near outside of perimeter fence	1	0	0	
5. Management of resident cervid carcasses after death	≤6	7-25	>25	Farm Score
Cervid carcasses placed in compost, waste pile, or left in pens with potential access by scavengers	2	0	0	
Cervid carcasses removed from operation without any potential access by scavengers	0	0	0	

Total Score: (Add Farm Scores from questions 2 through 5) - Indirect contact with infected farmed cervid in previous 5 years	/12
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Indirect contact with infected cervid carcass or body part

6. Cervid carcasses brought to farm in past 5 years from hunting or taxidermy purposes	In area defined by state as CWD affected	Not in area defined as CWD affected	Farm Score
≥1 cervid carcass brought to farm with access by farmed cervid	10	5	
≥1 cervid carcass brought to farm without access by farmed cervid and not processed in defined area easily cleaned and disinfected	6	2	
≥1 cervid carcass brought to farm without access by farmed cervid and processed in defined area easily cleaned and disinfected	3	0	
No cervid carcasses brought to farm	0	0	
7. Contaminated soil and other environmental materials brought to farm in past 5 years from <u>hunting purposes</u> *including hunting clients	In area defined by state as CWD affected	Not in area defined as CWD affected	Farm Score
Vehicle(s), trailer(s), boots, or clothing brought on operation without cleaning and disinfection following travel.	5	2	
Vehicle(s), trailer(s), boots, or clothing brought on operation after cleaning and disinfection following travel.	3	1	
No vehicle(s), trailer(s), boots, or clothing brought on operation following travel	0	0	

Total Score (Add Farm Scores from questions 6 through 7) - Indirect contact with infected cervid carcass or body parts	/15
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Direct contact with infected free-ranging cervid

	Closest CWD-positive free-ranging cervid (mi)			Farm Score
	≤6	7-25	>25	
8. Breach of perimeter fence in past 5 years	≤6	7-25	>25	
Breach allowed free-ranging cervid entry or farmed cervid escape with re-entry	20	10	2	
Fencing breach without known free-ranging cervid entry or farmed cervid escape with re-entry	5	1	0	
9. Perimeter fencing	≤6	7-25	>25	Farm Score
Single perimeter fencing	4	2	1	
Double perimeter fencing; area between fencing used for temporary movement of cervids	1	0	0	
Double perimeter fencing with no use of area between fencing for movement of cervids	0	0	0	

Total Score (Add Farm Score from questions 8 through 9) - Direct contact with infected free-ranging cervid	/24
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Indirect contact with infected free-ranging cervid

	Closest CWD positive free ranging cervid (mi)			Farm Score
	≤6	7-25	>25	
10. Landscape immediately outside of perimeter fencing	≤6	7-25	>25	
Forest or shrub predominant OR water source crosses fenceline or shared with free-ranging cervids	3	2	1	
No forest or shrub predominant OR no water source crosses fenceline or shared with free-ranging cervids	0	0	0	
11. Mammalian and avian scavengers near perimeter fence	≤6	7-25	>25	
Evidence of scavengers observed near perimeter fence or inside pens	3	2	1	
No evidence of scavengers observed near	0	0	0	

perimeter fence or inside pens				
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12. Cervid water and feeder location	≤6	7-25	>25	
Cervid water source and/or feeder located ≤3 ft from perimeter fence	3	2	1	
Cervid water source and/or feeder is located >3 ft from perimeter fence	0	0	0	
13. Cervid feed and storage	≤6	7-25	>25	
Cervid feed and bedding stored with potential access by free-ranging cervids or scavengers (Use maximum score if unknown)	3	2	1	
Cervid feed and bedding stored without access by scavengers or free-ranging cervids	0	0	0	
14. Management of resident cervid carcass after death in past 5 years	≤6	7-25	>25	
Cervid carcasses placed in compost, waste pile, or left in pens with potential access by scavengers	3	1	0	
Cervid carcasses buried or removed from operation without any potential access by scavengers	0	0	0	
15. Human personnel/hunting clients with access to cervid pens	≤6	7-25	>25	
≥3 people with access; without use of boots and outerwear specifically only used on this farm	1	0	0	
<3 people with access; with use of boots and outerwear specifically only used on this farm	1	0	0	

	Closest CWD-positive free ranging cervid (mi)			Farm Score
16. Cervid feed source	≤6	7-25	>25	
<u>Distance from field</u> cervid feed harvested to closest CWD-positive free-ranging cervid (Use maximum score if unknown)	3	2	0	

Total Score (Add Farm Scores from questions 10 through 16) - Indirect contact with infected free-ranging cervid	/19
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End of Biosecurity Assessment

Final score: Add the scores written in the Total Score boxes above for each section in the table below

Summary of Scores from Farm Biosecurity Assessment

Potential CWD Transmission Pathway	Max Risk Score	Farm Risk Score
Direct contact with infected farmed cervid	30	
Indirect contact with infected farmed cervid	12	
Indirect contact with infected cervid carcass or body part	15	
Direct contact with infected free-ranging cervid	24	
Indirect contact with infected free-ranging cervid	19	
Total	100	

PART C. CWD HERD BIOSECURITY PLAN

This section provides guidelines for you to consider when using this CWD Biosecurity Assessment to develop herd biosecurity management practices to reduce risk of CWD transmission on your operation. From the **Summary of Scores from Biosecurity Assessment** above, identify the potential CWD transmission pathways with the highest **Farm Risk** scores.

Potential CWD Transmission Pathways with highest Farm Risk scores on your operation (from Summary of Scores from Biosecurity Assessment above):

1.
 - a. Biosecurity practice to reduce this risk:

2.
 - a. Biosecurity practice to reduce this risk:

3.
 - a. Biosecurity practice to reduce this risk:



For more information about CWD biosecurity, scan the QR code or visit our website at z.umn.edu/CWDbiosecurity

Consider the guidelines provided below, categorized by CWD transmission pathway, to address CWD risks posed by the potential CWD transmission pathways you identified.

1. Direct contact with infected farmed cervid

- a. Minimize the introduction of cervids from other operations.
- b. If you need to introduce cervids, consider introducing cervids from low-risk cervid farms, defined as:
 - i. Herds closed to new purchased additions in the past 5 years, or
 - ii. Herds with CWD herd biosecurity practices in place and under surveillance testing as part of the USDA APHIS CWD Voluntary Herd Certification Program (including 100% testing of cervids that die for any cause).

2. Indirect contact with infected farmed cervid

- a. Prevent CWD transmission through shared use of vehicles, trailers, equipment, veterinary supplies, boots, or clothing with other cervid operations.
- b. If you need to share, remove all organic matter, and [disinfect vehicles, trailers, shared equipment, vehicles, and supplies to minimize contamination.](https://www.aphis.usda.gov/animal_health/animal_diseases/cwd/downloads/cwd-program_standards.pdf)
(https://www.aphis.usda.gov/animal_health/animal_diseases/cwd/downloads/cwd-program_standards.pdf)

3. Indirect contact with infected cervid carcass or body part

- a. Prevent CWD introduction to your operation related to the introduction of cervid carcasses or body parts, especially from locations not known to be free of CWD.
- b. Remove/clean organic matter from vehicle, clothing, and boots after hunting, especially if in areas with CWD.
- c. Do not use the same hunting clothing, boots, or equipment within cervid pens.
 - i. Require hunting clientele to use a boot bath or clean boots before entering hunting areas.
- d. Dispose of carcasses and processing waste in a manner not accessible by scavengers or other animals.

4. Direct contact with infected free-ranging cervid

- a. Inspect perimeter fences on an ongoing basis to ensure integrity of the fences.
- b. If fencing breaches do occur, close breach immediately and do not allow escaped cervids that may have contacted other cervids re-entry to cervid pens. Consider all free-ranging cervids to be potentially CWD-infected.
- c. Minimize nose-to-nose contacts through single perimeter fences through use of:
 - i. Exclusionary fencing (including double perimeter fencing or mesh/plastic fencing).
 - ii. Creation of a cleared buffer area outside of perimeter fencing to minimize use by free-ranging animals.

5. Indirect contact with infected free-ranging cervid

- a. Place the water source and feeding areas for farmed cervids away from the perimeter fence line.
- b. Create a cleared buffer area outside the perimeter fencing to reduce interactions with wild animals.
- c. Minimize access by domestic cats to cervid pens or their feed.
- d. Consider allowing access by dogs to cervid pens or their feed to discourage access by scavengers. To minimize stress to cervids, first properly introduce dogs to cervids.
- e. Dispose of resident cervid carcasses in a manner to minimize potential access by scavengers.
- f. Source feeds (including hay and grains) from locations not by infected free-ranging cervids.