THE CONVERSATION ON CHRONIC WASTING DISEASE

CONFERENCE REPORT

PREVENT. DETECT. RESPOND.
HUNTERS HAVE LONG KNOWN THAT CHRONIC WASTING DISEASE (CWD) POSES AN ENORMOUS THREAT TO CANADIANS. Unfortunately, recognition beyond the hunting community has been limited and government actions on CWD have not matched the level of threat we are facing. The 2019 Conversation on CWD Conference, hosted by the Ontario Federation of Anglers and Hunters (OFAH) in March of 2019 was intended to grow the understanding of CWD in Canada, and establish a diverse group of interests who can collaboratively advocate for broad and integrated action.

CWD is highly infectious, 100% fatal, has no cure or vaccine, no live-animal test, and is almost impossible to destroy. Dr. Evelyn Merrill of the University of Alberta described CWD as "a superwicked problem." CWD affects all members of the deer family (cervids), which includes Canada’s native white-tailed deer, mule deer, moose, elk, and caribou. CWD impacts cervid health leading to population declines, damages the economy through loss of wildlife-related income and the potential introduction of agricultural trade barriers, and affects the social and cultural well-being of Canadians tied to healthy cervid populations. Whether you are an avid hunter, enjoy seeing healthy wildlife, or make your living through agriculture or a wildlife-related industry, you could feel the impacts of this disease.

This report concludes with a suite of recommendations targeted at identifiable vulnerabilities where governments and stakeholders can have meaningful impact. The conference delivered a clear message – we need to ‘Prevent-Detect-Respond’ in order to protect cervid populations, human health, and wildlife- and agricultural-related economies. It highlighted the importance of public support and the need to ensure that the public has the information they need to make informed decisions about the risk posed by CWD. Attendees identified several opportunities to harness new and existing legislative and enforcement tools to address identified risk pathways, including the cervid farming industry.

A problem as complex as chronic wasting disease will require cooperation between multiple levels of government, an informed public, and strong advocacy from stakeholder groups. The OFAH invites all conference participants and any interested parties to join the Canadians Concerned About CWD collaborative, which was created as a result of this conference.

"CWD is a superwicked disease." --Dr. Evelyn Merrill, University of Alberta
THE 2019 CONVERSATION ON CWD WAS A SIGNIFICANT DEPARTURE FROM THE NORMAL OFAH CONFERENCE MODEL. The serious threat posed by CWD deserved special attention and warranted a full two-day conference to educate and chart a path forward. The OFAH, and the hunting community as a whole, have been advocating for more government action for decades, and the conference was intended to profile the threat of CWD to all Canadians. The need for this conference was heightened by the September 2018 CWD outbreak on a red deer farm in Quebec, only 15 kilometres from the border with eastern Ontario. Several other provinces and states have been dealing with CWD for many years prior and stakeholders from all areas agree that the time for action is long overdue.

"Wildlife are an important part of our identity. Whether you are a naturalist, hunter, photographer, outfitter or someone who simply wants to sustain healthy wildlife populations, we all need to work together to address this conservation threat."

--Angelo Lombardo, OFAH Executive Director
CWD IS A COMPLEX DISEASE AND TACKLING IT INVOLVES MANY DIFFERENT DISCIPLINES. The OFAH invited the top experts from natural resource management, ecology, molecular biology, human health, epidemiology, wildlife policy, psychology, sociology, economics, Indigenous perspectives, and veterinary medicine to help establish the need for an integrated approach to addressing the threats posed by CWD.

CWD is not solely a hunting issue and the OFAH sought to invite conference participants from a wide range of fields including tourism, agriculture, all levels of government, the outdoors industry, education, public health, cervid farming, and academia, as well as fish and wildlife conservation groups from across Canada and several U.S. states.

All told, conference attendees from over 50 different organizations brought a wide range of experiences, knowledge, and viewpoints on chronic wasting disease and left with a better understanding of the disease and a conviction to return to their respective organizations and share their knowledge.
WASTING DISEASE?

Even within a group of interested stakeholders, there continues to be a lack of understanding about CWD. This underscores the need for enhanced public education and outreach throughout broad and diverse networks of Canadians. The conference began with introductory information and background to help offer delegates a common understanding of CWD basics.

CWD is a member of a group of diseases that also includes mad cow disease in cattle, scrapie in sheep, and Creutzfeldt-Jakob disease in humans. Despite recent claims to the contrary, the scientific evidence indicates that CWD is caused by misfolded proteins known as prions (“pree-ons”). When a deer, moose, caribou, or elk is infected by CWD, the prions cause the animal’s own proteins to misfold into prions. The prions accumulate into plaques which damage nervous and brain tissue, and invariably leads to the death of the animal. The visible symptoms of CWD include drastic weight loss, stumbling, a lack of coordination, listlessness, drooping of the ears and head, excessive thirst or urination, drooling, and a lack of fear of people. These symptoms are typically only present in the later stages of the disease. Animals can be infected and infectious while showing no visible symptoms and appearing completely healthy. Prions are significantly different from other disease-causing agents such as bacteria and viruses and, as a result, are incredibly hard to destroy. Prions are resistant to chemicals, radiation, freezing, and even incineration at more than 600°C. There is currently no vaccine or cure, although research is ongoing on that front.

CWD is highly infectious among cervids with no individuals to date showing full resistance. Infected animals shed prions through saliva, urine, feces, and other bodily secretions. These prions can be passed to other animals through direct contact or indirectly through the environment. Prions can persist in the soil or on hard surfaces and remain infectious for years. The closely related scrapie prion can remain infectious after 16 years outside of an animal. CWD prions can be taken up by plants and potentially infect animals that consume them. Prions build up in the environment, especially at places used by high numbers of deer such as cervid farms, natural mineral licks, water sources, and both intentional (i.e. feeding) and accidental (i.e. agricultural spillage) food sources. Even if all CWD-positive animals are removed from an area, animals could be infected from these environmental sources.

In a post-conference survey, only 44% of delegates (excluding the expert speakers) indicated they felt well informed about CWD prior to attending the conference.
CWD IS SPREADING RAPIDLY AND HAS NOW BEEN DETECTED IN 26 STATES, THREE PROVINCES, FINLAND, NORWAY, AND SOUTH KOREA, AS OF SPRING 2019. Some of this spread has resulted from natural animal movements such as migration or dispersal, but conference speakers agreed that humans have played a major role in spreading CWD. Repeatedly, people have transported CWD-positive animals to new areas, resulting in fresh outbreaks. The two main pathways of concern are the movement of live cervids by the cervid farming industry and hunter-harvested cervids.

The movement of live animals by the cervid farming industry has repeatedly spread CWD. Cervid farming was introduced across Canada in the 1980s and 1990s as an agricultural diversification initiative and created near-perfect conditions for spreading CWD. There are no tools available to cervid farmers to ensure they are not transporting or receiving CWD-positive animals. Infectious animals can show no symptoms and there is no reliable live animal test for CWD. Once a CWD-positive animal arrives on a farm, the confinement and high density of animals increases the spread of the prions. CWD was first detected in Canada when CWD-positive elk were imported in the late 1980s to Lloydminster, Saskatchewan from a farm in South Dakota. From there, animals were shipped to more than 30 cervid farms across the province. The disease subsequently crossed the fence, resulting in the first detection in wild mule deer in 2000.

Whether between countries, provinces, or within jurisdictions, the transport of hunter-harvested carcasses poses a significant risk of spreading CWD. Most jurisdictions have comprehensive and robust regulations to restrict/prohibit importation of carcass parts with the highest prion levels, such as the head, spine, and internal organs. However, enforcement can be challenging, especially when the movement is across provincial rather than international borders and in these cases, there is heavy reliance on hunters knowing and complying with the regulations.

"[We know that] the biggest vector that moves this disease around is a truck."

-- Harvey Petracek, Canadian Cervid Alliance
THE DEVASTATING IMPACTS OF CWD:
BAD FOR CERVIDS.
BAD FOR THE ECONOMY.
BAD FOR PEOPLE.

PREVENT. DETECT. RESPOND.
Infection rates and longevity differ between male and female deer but the end result is a population with fewer and younger males, and fewer mature females. This loss of mature reproductive deer can lead to declining populations. Population impacts (either population decline or lack of growth despite favourable conditions) have been documented in mule deer, elk, and white-tailed deer. This has serious implications for biodiversity and the management of species at risk such as caribou, which are susceptible to CWD.

Eradicating CWD requires the depopulation (killing) of the local deer population. Given the seriousness of CWD and the danger of prions accumulating in the environment, these responses are justified but still have a significant negative impact on the local deer population.

These response measures significantly drain the already limited resources and budgets of fish and wildlife agencies.
The detection of a single case of mad cow disease in Alberta resulted in multiple countries banning the import of Canadian beef and cost our economy billions of dollars. While bans targeted at mad cow specifically limited the importation of beef, similar bans targeted at CWD could encompass a much wider range of agricultural products. In addition to products from cervid farms, trade restrictions could include plant-based products as CWD prions can contaminate plants.

This is already happening. In 2018, Norway banned the import of straw and hay from any Canadian province or American state with CWD. A single case of CWD in humans is guaranteed to magnify and expand these trade restrictions.

"I went to the best ag economists and international trade experts in the world trying to find out what would happen if we suffered these trade barriers... and they said that the consequences would be worse than I said and I was saying it would push us into recession and we wouldn’t know how to shut it off."

-- Darrel Rowledge, Alliance For Public Wildlife
CWD could lead to lower participation rates in activities such as hunting, tourism, or wildlife viewing, due to declining health and abundance of cervids, and the high degree of uncertainty and misinformation around the disease. Research is ongoing and work conducted in Alberta by Dr. Vic Adamowicz and colleagues indicates that, at least in the case of hunters, participation can remain high. This is encouraging as continued participation in wildlife-based activities and investment in wildlife is essential to effectively combating CWD.

CWD threatens the cultural identity and food security of many Indigenous peoples. Declining cervid populations will have direct impacts on subsistence hunters and wildlife is inextricably linked to Indigenous cultural practices. Brian Jackson, Band Councillor with the Piikani First Nation in Alberta, spoke passionately about how CWD threatens his people’s “Old Ways.” Through this potential loss of food security, cultural identity, and economic prosperity, CWD threatens Canada’s fiduciary obligation to Indigenous peoples.

CWD has the potential to impact human health. While there is currently no direct scientific evidence that CWD can affect humans, new research has suggested the potential for non-human primates to contract CWD through the consumption of CWD-positive meat. Furthermore, there is no scientific basis for human immunity to CWD and prion diseases have been shown to cross species barriers in the past with mad cow disease being the best-known example.

The Canadian Food Inspection Agency recommends against consuming meat from CWD-positive animals and in the opinion of Dr. Michael Coulthart, efforts should be taken to keep CWD-positive meat out of the human food chain. Failure to do so could have human health impacts and lead to the contamination of Canada’s blood supply as current practices are not capable of removing prions from donated blood.

Keeping CWD out of the food chain is a major challenge. Thousands of CWD-positive animals are harvested by hunters annually. There is currently no field test for CWD and long delays in receiving testing results, a lack of education, and hunter apathy have led to many of those animals being consumed. Many jurisdictions, including Ontario, do not have any mandatory CWD testing requirements for the cervid farming industry, raising the potential for CWD-positive meat from that industry to find its way into the human and pet food chains.

"...these songs and these ceremonies that mean so much to us, that gave us a way of life, are being impacted as a result of the threat of CWD." -- Brian Jackson, Band Councillor, Piikani First Nation
WHAT CAN WE DO ABOUT CHRONIC WASTING DISEASE?
The steps needed to halt the spread of CWD and reduce the risk to both wildlife and human health are well known.

None of the following recommendations are novel. The single most important thing is for all Canadians to advocate with a single united voice for action at all levels of government. Bryan Richards and Dr. Iga Stasiak both referenced the words of the late Dr. Elizabeth S. Williams, a leading CWD scientist: “You’ll have to be aggressive; remove all sources and all potential movement. Cut wider and deeper than you ever think necessary. The deer will come back; but you’ll get one chance. If CWD gets established, you’ll have it for a very long time.”

While Dr. Williams was speaking specifically about the steps that need to be taken when CWD is detected, her words apply to all aspects of CWD. This disease is not a bell that can be unrung and, for this reason, the focus must be on prevention. EVERYTHING ELSE IS TOO LATE.

RECOMMENDATIONS

The following recommendations were generated by the presentations and discussions of the conference, as well as the ongoing advocacy work of many of the attending organizations.

Based on the overarching principle that prevention is key, government must:

PREVENT – DETECT – RESPOND in order to control the spread of CWD.
In a post-conference survey, attendees ranked 'LACK OF PUBLIC AWARENESS' as the second greatest barrier to meaningful action on CWD.

COMMUNICATE & EDUCATE

ACHIEVING MEANINGFUL ACTION IS NOT FEASIBLE WITHOUT AN INFORMED PUBLIC. THESE RECOMMENDATIONS APPLY TO BOTH GOVERNMENT AND INVESTED PARTIES SEEKING ACTION ON CHRONIC WASTING DISEASE.

- Communicate on CWD at a level necessary to engage the general public so they understand the importance of the issue and support calls for action.
- Combat misinformation. A clear understanding of CWD and its impacts is essential for public buy-in.
- Promote deer hunting and the consumption of CWD-negative venison. More hunters means more pressure on government to prevent the spread of CWD.

COMMUNICATION is key in ALL stages in the fight against Chronic Wasting Disease.
PREVENT

THE BEST OPTION IS TO NEVER GET CWD IN THE FIRST PLACE. TO ACCOMPLISH THIS THE POTENTIAL PATHWAYS FOR CWD TO SPREAD MUST BE IDENTIFIED AND ADDRESSED.

GENERAL
- **Identify pathways** for CWD to enter a new jurisdiction and enact legislation to address these pathways. If the legislative authority to address a pathway does not exist, create that authority.
- **Have a plan** that includes a fixed, mandatory review timeline to ensure it is up to date and feasible.
- **Increase funding** and tools for enforcement of CWD-related regulations such as the inter-provincial movement of hunter-harvested carcasses.

MOVEMENT OF LIVE CERVIDS, CARCASSES AND PRODUCTS
- **Halt the transport** of live cervids.
- **Ban the import** of hunter-harvested carcasses from CWD-affected areas unless testing shows the animal to be CWD-negative.
- **Increase regulation** of live captive cervids and hunter-harvested carcasses.
- **Track intra- and inter-provincial movement** of live captive cervids and hunter-harvested carcasses to understand potential pathway of spread if it is detected within a jurisdiction.
- **Ban the possession** and use of natural attractants for all purposes.

CAPTIVE CERVIDS
- **Phase out the cervid farming industry** with adequate compensation to farmers.
- **Expand the ability to trace the origin and destination of products from CWD-positive farms** by including products such as urine and velvet.
- **Place the onus on the government** and the cervid farming industry to prove the safety of current practices related to CWD (e.g. fencing specifications, biosecurity, etc.).
- **Increase regulation** and reporting requirements for animal rehabilitators that treat and house cervids.

BIOSECURITY AND ESCAPED FARmed CERVIDs
- **Put in place mandatory biosecurity and escape reporting requirements** for cervid farms with increased fines for escapes and charges for failing to report.
- **Enable legislation and staff capacity within fish and wildlife agencies** to quickly respond to escaped farmed cervids to ensure they do not become established on the landscape.
- **Remove all non-native cervids from the landscape and test for CWD.**

HUMAN HEALTH
- **Enact stringent measures** to ensure untested meat from hunter harvest in endemic areas and cervid farms is not distributed.
- **Provide the necessary information to hunters** to prevent exposure to CWD.
- **Develop a preparedness plan** for the possible emergence of human CWD in Canada, including any impacts to our blood supply.

"...the risk of human CWD infection, albeit probably low, cannot be completely dismissed and because human CWD could have very serious consequences..."

--- Dr. Michael Coulthart, Public Health Agency of Canada
DETECT

AS A BACKSTOP TO A THOROUGH PREVENTION STRATEGY, A RIGOROUS SURVEILLANCE PROGRAM IS NEEDED TO DETECT ANY CASES OF CWD IN WILD CERVIDS, FARmed CERVIDS, AND HUMANS, AS EARLY AS POSSIBLE.

GENERAL
- Fund wildlife and human health agencies to support the staffing, training, equipment, and testing to ensure that surveillance can be conducted at the level needed to detect CWD if it presents in cervids or humans.

RESEARCH
- Support the development of rapid in-field tests for hunters and live tests for cervid producers.
- Fund research on how CWD may present in humans in order to better inform human prion disease surveillance.
- Support further research on animal models to determine risk of human exposure.

CERVID SURVEILLANCE
- Mandate and implement convenient cost-free, rapid testing of all animals harvested by hunters in CWD-affected areas.
- Enact mandatory testing of all farmed cervids sent to slaughter and on all farm deaths, regardless of the cause.
- Make testing of hunter-harvested cervids mandatory in areas surrounding positive CWD cases.
- Where testing is not mandatory, develop incentives to increase the submission of heads/samples to CWD surveillance programs by hunters.

HUMAN SURVEILLANCE
- Maintain and strengthen the current federal program of human prion disease surveillance.

SURVEILLANCE AND RESPONSE PLANNING ranked #2 in where conference delegates thought CWD advocacy efforts should be focused.
IF CWD IS DETECTED IN A JURISDICTION, A SWIFT AND ALL-ENCOMPASSING RESPONSE IS NEEDED. TO BE EFFECTIVE THE RESPONSE PLAN MUST ALREADY BE FORMULATED AND ALL THE PROCEDURES, STAFFING, AND EQUIPMENT PREPARED IN ADVANCE. DECISIONS MADE IN THE FACE OF CRISIS ARE NEVER AS EFFECTIVE AS THOSE PREPARED IN ADVANCE.

PREPARATION (PRE-DETECTION)
• Before CWD is detected, earmark funding for response measures in fish and wildlife agency budgets in order to ensure they have sufficient resources for the duration of the required response.
• Develop and maintain the capacity in terms of both trained staff and equipment within fish and wildlife agencies to increase flexibility and rapidity of CWD response.
• Conduct CWD risk assessment surveys to identify potential areas that may have higher risk of CWD infection and transmission if CWD is detected in the jurisdiction.

RESPONSE (POST-DETECTION)
• When CWD is detected, enact drastic but necessary response measures which may include depopulation of wild and farmed cervids, restrictions on hunting and baiting, mandatory testing, and restrictions on the movement of animals.
• Target specific communication at groups that will be directly affected by the disease and response operations, such as hunters, landowners, and Indigenous communities, and those expected to oppose it, such as animal rights groups.
• Communicate to build support for concrete actions rather than general concepts (i.e. “depopulation with sharpshooters” rather than “preventing the spread of CWD”).

"You'll have to be aggressive; remove all sources and all potential movement. Cut wider and deeper than you ever think necessary. The deer will come back; but you’ll get one chance. If CWD gets established, you’ll have it for a very long time.”

-- the late Dr. Elizabeth S. Williams, a leading CWD scientist
Chronic Wasting Disease can affect all Canadians through a variety of different mechanisms; however, the root solutions are the same: effective communication, thorough prevention, rigorous surveillance, and swift response. To get government to take this action, we need to Participate – Engage – Advocate by participating in discussions around CWD, engaging our fellow Canadians, and advocating for meaningful action with a single unified voice.

Therefore, our best hope to safeguard our wildlife, culture, health, and economy from CWD is by speaking with a single unified voice. The OFAH invites all conference participants and any interested parties to join the CANADIANS CONCERNED ABOUT CWD (CCAC), a collaborative created as a result of this conference.

Based on the CWD National Plan in the United States, the intent of this group is to maximize the effectiveness of CWD advocacy by reducing duplication while drawing on the specific strengths of its members to enact the recommendations listed above.

The OFAH will work to coordinate the efforts of the CCAC to ensure we efficiently lobby all levels of government to stop the spread of CWD while effectively communicating the threat of CWD to all Canadians.

An overwhelming 96% of conference participants believe there is a role for them or their organization in helping to prevent the spread of CWD.

What are we doing? How can you help? Read more on the CANADIANS CONCERNED ABOUT CWD online at www.ofah.org/ccac
The OFAH was pleased to bring stakeholders from across North America to Ontario for the conference. Thank you to Fitzsimons Financial Group Inc. for serving as title sponsor for the event.

Confrence Participants from Across North America

- Alberta Fish & Game Association
- Alberta Prion Research Institute
- Alliance for Public Wildlife
- ALUS Canada
- **American Income Life Canada**
- Beef Farmers of Ontario
- Bloodwatch.org
- British Columbia Wildlife Federation
- **BrokerLink**
- Canada Border Services Agency
- Canadian Cervid Alliance
- Canadian Federation of Outfitter Associations
- **Canadian National Sportsmen's Shows**
- **Canadian Wildlife Federation**
- Canadian Wildlife Health Cooperative
- Carleton University
- Christian Farmers Federation of Ontario
- Fédération Québécoise des Chasseurs et Pêcheurs
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- Great Lakes Fishery Commission
- Halton Sportsmen Association
- **Lanark and District Fish and Game Conservation Club**
- Manitoba Sustainable Development
- Mark's Commercial
- Michigan Department of Natural Resources
- Ontario Ministry of Natural Resources and Forestry
- Minnesota Deer Hunters Association
- **National Deer Alliance**
- National Farmers' Union of Ontario
- New York Department of Environmental Conservation
- Nature and Outdoor Tourism Ontario
- Ontario Federation of Anglers and Hunters
- **OFAH Zones**
- Ontario Hawking Club
- Ontario OUT of DOORS Magazine
- Ontario Power Generation
- Ontario Sheep Farmers
- Osgoode Township Fish & Game Conservation Club
- Oxford County
- Piikani First Nation
- Port Colborne and District Conservation Club
- Public Health Agency of Canada
- QDMA Rideau-St. Lawrence
- Royal Botanical Gardens
- Rack Stacker Inc.
- Saskatchewan Ministry of the Environment
- **Stoeger**
- The Professional Edge
- Toronto Zoo
- Trent University
- United States Department of Agriculture Animal and Plant Health Inspection Service Wildlife Services
- United States Geological Survey
- University of Alberta
- University of Guelph
- Wikwemikong Department of Lands and Natural Resources

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