



A Pan-Canadian Approach to Wildlife Health

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Federal, Provincial, and Territorial Governments of Canada

Notes on this Document

A Pan-Canadian Approach to Wildlife Health is designed to adapt to changing needs and new knowledge. It aims to develop, support, and sustain capacities and activities rather than focus on specific diseases or threats. It is concerned both with threats to wildlife as well as the values and risks wildlife health present to Canadians. While Québec has its own Wildlife Health Strategy, it wishes to maintain and develop collaborations with the other provinces and the federal government on wildlife health issues of identified concern.

Acknowledgments

This document represents the collective efforts of several federal, provincial, and territorial government departments and agencies along with the Canadian Wildlife Health Cooperative.

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Definitions

Country foods: Food derived from wild animals and plants, including traditional diets of Indigenous peoples and wild food harvested for recreational or subsistence purposes.

Disease: An abnormality of physiological function or structure that leads to poor health. Disease can have many causes including infection, genetics, immune function, contaminants, cancers, and others.

Harmonization: Convergence in standards and practices across jurisdictions, agencies and portfolios.

Health intelligence: The process of generating, collecting, and analyzing a variety of information to foster collaboration and consultation through innovation in surveillance, information exchange, research, and response to protect, promote, and support decisions affecting wildlife health and its associated social values.

Human-animal-environmental interface: A shared place in space and/or time where people, animals and the environment interact.

Indigenous Knowledge: Defined in many ways, but founded on experiential knowledge of the environment, knowledge of past and present use of the environment by Indigenous people.

Natural capital: The world's stocks of natural assets which include geology, soil, air, water and all living things. It is from natural capital that humans derive a wide range of services, often called ecosystem services, which make human life possible.

Pathogen: An organism, agent, factor capable of causing disease.

Pollutant: Undesirable matter in air, water, or food that is toxic or may have adverse effects on health.

Situational awareness: Being aware of the current state of events, and being able to put those events in the context so one can understand what they mean, and be able to understand what is likely to occur in the near future given current events.

Spill over: Situation where a pathogen is transmitted from a reservoir population (i.e., the population of organisms in which a pathogen commonly lives and reproduces, or upon which it primarily depends for its survival) to a different population where the pathogen may or may not be further transmitted.

Surveillance: Systematic and continuous collection, analysis, and interpretation of data, closely integrated with the timely sharing of the results and assessment to those who have the right to know so that action can be taken.

Wildlife: Undomesticated fauna native to Canada including mammals, birds, fish, reptiles and amphibians.

EXECUTIVE SUMMARY

The purpose of *A Pan-Canadian Approach to Wildlife Health* is to support strong, shared, leadership to protect and promote wildlife health and the values it brings Canadians. It achieves this goal by enabling, sustaining and integrating infrastructure and expertise in Canada. Its aims are to: protect and conserve native fauna from harm due to pollutants and emerging pathogens, as well as the ecological and economic services provided by wildlife; provide assurance to Canadians that depend upon healthy wildlife for sustenance and livelihood; enable Canada to meet its national and international obligations for disease surveillance in relation public health, agriculture and trade; and reduce surprises from emerging threats, particularly those anticipated with climate change. ***A Pan-Canadian Approach to Wildlife Health* presents a vision for wildlife health, identifies challenges and opportunities, and provides actions to achieve a shared mission.**

Global trends, new technologies and changes to organizational capacities warrant a fresh approach. *A Pan-Canadian Approach to Wildlife Health* facilitates a national focus for wildlife health policy and planning and strengthens capacity to share information and expertise across jurisdictions by building on opportunities and capacities in existing national and jurisdictional programs and maximizing collaboration while respecting their roles. It promotes a coordinated, efficient, equitable, cross-portfolio approach to wildlife health.

A Pan-Canadian Approach to Wildlife Health was **developed to address three principle challenges:**

- (1) How to anticipate emerging and changing threats from globalization, climate change, landscape changes and other factors before conservation, public health, agriculture or other social values are harmed.
- (2) How, across a very large country, to provide Canadians and trading partners assurances on the disease status of wildlife to enable trade and on the safe use of wildlife as food, for recreational purposes, and in cultural practices.
- (3) How to assess, monitor and manage wildlife health across agencies and jurisdictions in a more effective and cost-efficient manner.

Goals of *A Pan-Canadian Approach to Wildlife Health*:

- (1) Strengthen Canada's capacity to identify and reduce wildlife health threats that put conservation, public health, or economic and cultural opportunities at risk.
- (2) Develop, implement, and assess programs and policies to reduce disparities and differences in wildlife health capacity across the country.
- (3) Support wildlife management through research, policy and planning to better enable wildlife to cope with rapidly increasing anthropogenic and environmental changes, and thus protect or enhance the ecological, cultural, and economic value of wildlife and the services provided by wildlife.
- (4) Improve efficiency and effectiveness of programs by building linkages between federal, provincial and territorial governments, universities, and other stakeholders.

Outcomes of *A Pan-Canadian Approach to Wildlife Health*:

- (1) Improved preparedness and situational awareness through better information gathering, analysis and sharing.
- (2) Improved readiness through coordinated identification of risks and combining risk management with health protection policies and programs.
- (3) Pan-Canadian equivalence in the capacity of wildlife health programs to deliver upon critical needs.
- (4) More efficient and effective public service through collaboration across jurisdictions and portfolios.

This pan-Canadian approach helps the Government of Canada meet domestic and international obligations pertaining to wildlife health that are shared with provinces and territories and spread across multiple departmental or agency portfolios. Coordinating and sharing expertise and information increases timeliness and flexibility in responding to emergencies and emerging issues. It enables longer-term planning to anticipate risks and communicate vulnerabilities in advance of harms. Key areas of focus include Health Intelligence, Stewardship, Innovation, and Governance.

The essential structures and arrangements necessary to implement *A Pan-Canadian Approach to Wildlife Health* are in place; however, they require coordination, resources and dedicated leadership. Direction is provided by the Ministries represented on the Conservation, Wildlife and Biodiversity Steering Group (CWBSG) and the Federal Partners in Wildlife Health (FPWH) Committee. The Approach designates a Wildlife Health Advisory Committee to exchange information and coordinate activities across federal, provincial, and territorial government departments, and key non-governmental partners. The Canadian Wildlife Health Cooperative (CWHC), which is a network of wildlife health professionals that includes Canada's five veterinary colleges and the British Columbia Animal Health Centre, plays a key role, offering expertise and working in collaboration with government to implement wildlife health programs and initiatives. Rights holders, stakeholders, and other essential partners are engaged in all aspects the Approach and represented on the Wildlife Health Advisory Committee. Sustaining and supplementing CWHC's core capacities and ensuring a governance structure is in place that meets the needs of key partners is a cornerstone to advancing Canada's wildlife health agenda.

National Approach to Wildlife Health in Canada recommends the development of mechanisms to produce and support 5-year strategic plans and associated priority actions to: (1) concentrate and focus resources to enhance government's ability to leverage and coordinate cross-agency funding and reduce duplications; (2) promote a pan-Canadian network of information and capacity sharing to guide investment and improve situational awareness; and (3) improve performance outcomes by creating greater uniformity and consistency in wildlife health across Canada, shortening the time from knowledge generation to action and maximizing geographic representation and harmonization of activities.

THE NEED FOR MODERNIZING OUR APPROACH TO WILDLIFE HEALTH

Canada's approach to wildlife health is internationally well-respected, serving as a model for many other countries. Global trends, emerging technology and reductions in resources suggest that it is time to modernize wildlife health to better prepare Canada for the socioeconomic, cultural, and ecological impacts associated with wildlife health problems. Canada is obliged by the Constitution and a variety of international agreements to monitor and protect wildlife health. Demands for wildlife health services and expertise are growing beyond current capacity because of the needs for assurances for trading partners, the expectation to manage for uncertainty and the increase in emerging diseases threatening public health, conservation and agriculture.

The current approach to addressing wildlife health issues is often reactive and follows a 'disease-by-disease' sequence. As a consequence, problems are rarely addressed in their early stages and response options may be few. There is a need for greater focus on early warning, prevention, and preparedness, which will depend on improved knowledge of risks, better surveillance for early warning, improved coordination, and integrated response capability.

Four factors drive demand for a new approach; (1) diseases are a more frequent cause of declines in wildlife abundance and extinctions; (2) wildlife have been the source of numerous emerging infectious diseases of public health, agriculture or conservation concern; (3) social license and public demand require capacity to measure and monitor wildlife health; (4) climate change, resource extraction and landscape change are increasing, with increasing impact on wildlife populations.

Wildlife health programs face several challenges including: 1) resources must be distributed over a very large variety of species and populations; 2) strengthening programs is complicated due to multi-jurisdictional roles and interests; and 3) sustainability is challenging as wildlife health lacks a single responsible authority. **This pan-Canadian approach to wildlife health presents a vision for wildlife health, identifies challenges and opportunities, and provides actions to achieve a shared mission.**

Needs

A 2016 survey of provincial and territorial agencies identified needs shared across jurisdictions and ministries/ departments including:

- 1) reliable information upon which to base decisions and actions, preferably in coordination with partners;
- 2) monitoring, surveillance, and assessment that allows for early detection of threats and promotes a preventive approach;
- 3) capacity to assess the significance of surveillance and monitoring outcomes as an indicator of changing risks; and
- 4) capacity to anticipate and prepare for effects of climate change.

Seven federal departments with an interest in wildlife health concluded, following a workshop in 2016, that a pan-Canadian approach to wildlife health must be able to provide information to support policy, planning and practice decisions by:

- providing information on the distribution and risks posed from infectious diseases and environmental contaminants;
- contributing information to support indigenous and rural people's health and welfare;
- providing insights into changing habitat condition and quality; and
- giving foresight into the impacts of climate change.

A COORDINATED AND HARMONIZED PAN-CANADIAN APPROACH IS NEEDED AS FAILURES IN WILDLIFE HEALTH WITHIN ONE JURISDICTION HAVE THE POTENTIAL TO ADVERSELY IMPACT CITIZENS OR SPECIES IN ANOTHER JURISDICTION

Wildlife health information was also seen to contribute insights into natural capital accounts. Federal, provincial, and territorial jurisdictions agreed that successful action will depend on collaboration, must be based on the best available science, make use of insights and observations gathered by land and water stewards that depend on wildlife for sustenance and livelihood, including Indigenous Knowledge, and have a plan for strategic investment and adaptive management.

Challenges

Crossing Boundaries

Wildlife health is a shared provincial/territorial-federal responsibility. Unlike public health and domestic animal health, which are the mandates of specific government agencies with direct budget allocations, wildlife health falls across multiple agencies at several levels of government. There are few mechanisms to work across portfolio boundaries to achieve shared wildlife health goals and integrate government resources. Wildlife health overlaps the mandates of many departments and agencies at each level of government. At the federal level, these include the Canadian Food Inspection Agency, Parks Canada Agency, Public Health Agency of Canada, Agriculture and AgriFood Canada, Environment and Climate Change Canada, Indigenous and Northern Affairs Canada, and Fisheries and Oceans Canada. Other federal government departments such as, Natural Resources Canada, Health Canada, Transport Canada, and National Defense also have interests and activities that can benefit from and contribute to a pan-Canadian approach to wildlife health. In the provinces and territories, Ministries responsible for the environment, agriculture, public health, indigenous affairs and more have interests in wildlife health. The Canadian Wildlife Directors Committee, which reports to the CWBSG provides a venue to address wildlife health issues on an issue-by-issue basis. Despite the concurrent jurisdictions and mandates, there is no regulatory or policy framework guiding federal-provincial/territorial cooperation or federal coordination on wildlife health.

The success of past collaborations (e.g., avian influenza, white nose syndrome of bats, concerns for impacts of natural resource development on country foods) is driving demand for more regular and systematic mechanisms to share capacity and information across programs and personnel¹. A more

¹ Canadian Wildlife Health Cooperative (CWHC) Annual Report 2016-2017 (available: <http://2016-2017.cwhc-rcsf.ca/>)

formal system for coordinating capacity and funding is needed to improve the timeliness, effectiveness, and efficiency of such collaborations.

The United Nations' Goals for Sustainable Development recognize that prosperity and well-being require attention to policy dilemmas at human-animal-environmental interfaces². Problems at these interfaces require an all-of-government approach, but the gulf between departmental and jurisdictional mandates seems exceptionally wide for wildlife health. *A Pan-Canadian Approach to Wildlife Health* outlines an innovative public management model with the flexibility to deliver and integrate roles across Ministries, governments, and the private sectors. It bridges Ministries, disciplines, and knowledge to address policy needs and international obligations. This pan-Canadian approach provides a distinct, sustainable interagency approach needed to provide Canadians and our international partners the confidence that wildlife health is equitably managed across Canada.

Coping with Change

The world is more complex. There are new challenges due to rapidly changing social and environmental conditions. With changing landscapes and climates, and global transport of people and goods, new avenues are being created for the movement of pathogens and pollutants into and within the Canadian environment.

These changes are creating new risks for conservation, public health, and economic activities. As we increase our understanding of the relationship between wildlife, domestic animals, and people co-existing in shared environments, we also recognise the complexity of these relationships and the need for a new approach to better anticipate, prepare for and cope with change.

Wild animal surveillance provides cost-effective early warning needed to protect Canadian's health, industries and environments. Most recently emerged infections of people and many in agriculture originated as wildlife diseases. Their large economic consequences have impacted trade, travel, tourism, agriculture, and health care. When the economic impacts have been measured, they reach the billions of dollars. Estimates of global economic losses due to trade sanctions or pandemics that may arise when wildlife diseases spill over into people or domestic animals climb to the trillions of dollars. Wildlife health surveillance has inspired legislation that has reduced human exposure to contaminants and improved Canada's ability to design, manufacture, use and dispose of chemicals in a safe and efficient manner. Wildlife health continues to be a 'canary in the coal mine' that helps us to identify environmental threats in advance of human illness or economic impacts. Wildlife surveillance supports economic activities when an absence of infection or other types of harm can be demonstrated; however, surveillance resources have declined over the past decade, threatening the reliability of Canada's situational awareness and preparedness.

WILDLIFE HEALTH SURVEILLANCE IS A WIDELY-ACCEPTED TOOL TO FOREWARN OF CHANGING INFECTIOUS DISEASE THREATS AND PROVIDE TRADING PARTNERS ASSURANCES OF CANADA'S ANIMAL HEALTH STATUS.

² UN Sustainable Development Goals Report 2017 (available: <https://unstats.un.org/sdgs/files/report/2017/TheSustainableDevelopmentGoalsReport2017.pdf>)

Correlations between animal production, human influence on the environment, climate change and emerging risks involve mechanisms of very great complexity, making them extremely difficult to measure and the value of any forecasts most uncertain. To be ready for change, it is important to not only know what is happening now but also predict what the future may bring. The problem for decision makers, when planning for change, is to identify priority threats in an era of information overload, or put another way, how to separate the signal from noise. *A Pan-Canadian Approach to Wildlife Health* could enhance preparedness and adaptation to climate change through biologically meaningful early warning of impending threats to conservation, public health, agriculture, and resource development. It helps identify priorities for research, action, and planning.

Providing Assurance

Assurances that our activities are not negatively affecting wildlife health, or that wildlife health is not a risk to us are critical for confident use of wildlife, market access and social license for natural resource use. A critical challenge to providing assurance is fostering the capacity and coordination necessary to find signals of changing risks across multiple species in the world's second largest country, when efforts and investment vary and few formal mechanisms exist to share and make best use of observations.

Canada must be able to make credible and verifiable assurance claims for wildlife health to meet its international and national obligations. The World Organisation for Animal Health (OIE) and World Health Organisation (WHO) require that countries maintain capabilities that can immediately detect and respond to any unusual or unforeseen event that may become a significant human or animal health threat. The Convention on Biological Diversity and Rio Declaration similarly requires signatories be able



OUR PAN-CANADIAN APPROACH EMBODIES THE SPIRIT OF ONE HEALTH WHICH ENCOURAGES COLLABORATION AND COOPERATION ACROSS THE HUMAN, ANIMAL AND ENVIRONMENTAL SECTORS TO ACHIEVE SHARED BENEFITS.

to identify and monitor circumstances likely to adversely impact conservation and sustainable use of biological diversity. Canada's Constitution affirms the rights of First Nations, Métis and Inuit peoples to hunt, fish, and consume wild foods. The implementation of *A Pan-Canadian Approach to Wildlife Health* would contribute to the fiduciary obligations owed to First Nations, Métis and Inuit peoples as well as provide a strong response to our international obligations.


As the Canadian population grows, interactions between people, domestic animals and wild animals are expected to increase. As we become increasingly urbanized, adverse human-wildlife interactions will become more common as urban wildlife populations

expand while peoples' experience with how to safely interact with wildlife decreases. In rural Canada, growing concern over the safety and availability of wildlife as food are affecting rural and northern food security. Providing assurances of safety by properly characterizing the risks to Canadians from wildlife will not only help people feel safe, and thus access the benefits of nature-related activities and services, but also will help to prioritize natural resource use by the public and private sector interests.

Meeting Growing Demands

Increased reliance on *ad hoc* programs without sustainable or predictable resources is creating a deficit that is diminishing services and capabilities. This threatens the ability to anticipate emerging needs, provide nationally representative situational awareness, invest in prevention and preparedness, harmonize an equitable program across Canada, and plan beyond an annual cycle.

Wildlife diseases and their effects are expected to increase with climate change, urbanization, and increased natural resource development. Growing demands for cumulative effects management are creating new expectations to measure, monitor and maintain wildlife population health. A new approach is needed to: (1) harmonize capacity across Canada; (2) more efficiently use shared platforms, infrastructure and expertise; and (3) bolster the ability to quickly detect emerging threats while promoting new partnerships and systems to anticipate problems and sustain healthy populations in advance of harm. **A partnered approach to wildlife health will ensure that investment of any one agency is levered by the capacity, infrastructure and expertise developed through the total investment of all partners.**



THE GROWING INTEREST, OPPORTUNITIES AND ISSUES ASSOCIATED WITH WILDLIFE HEALTH ARE OVERWHELMING CAPACITY, RISKING DELAYS IN RESPONSE, INEFFICIENCIES, AND GAPS IN CAPACITY TO DETECT AND MANAGE RISK IN A TIMELY FASHION.

A PATH FORWARD

A modernized pan-Canadian approach that emphasizes risk assessment/management and adaptable capacities within key areas of focus (health intelligence, stewardship, innovation and effective governance) will enable governments to adapt and respond effectively to up-and-coming threats to conservation, public health, and economies from climate change, emerging diseases, globalization and changes to organizational capacities.

Vision A nationally connected network of wildlife health expertise, information and capacity that optimizes risk prevention, wildlife health promotion and communication

Mission To ensure strong, consistent stewardship to protect wildlife health and the values that wildlife health brings Canadians by promoting, sustaining, coordinating, and integrating infrastructure and expertise in Canada.

Guiding Principles

A Pan-Canadian Approach to Wildlife Health will:

- provide a shared vision and objectives for a pan-Canadian network of wildlife health expertise and authorities that maximizes collaboration and respects roles;
- set priorities and directions that emphasize prevention and preparedness while maintaining capacity to confidently detect and attest to the disease status of Canadian wildlife;
- build upon and coordinate the efforts and expertise found across jurisdictions to maximize strategic investment and the best use of public resources;
- empower the stewards of land and water resources (i.e., those who depend on wildlife for sustenance and livelihood and are often the first to notice changes) by making them an integral part of wildlife health surveillance and response efforts; and
- use the best available scientific data, Indigenous Knowledge, and other sources of information to identify short and long-term priorities for wildlife health investment and action to evolve the pan-Canadian approach with changing risks, needs, and capacities.

Strategic Goals

1. Strengthen Canada's capacity to identify and reduce wild animal health threats and determinants that put conservation, public health, and cultural or economic opportunities at risk.
2. Develop, implement, and assess programs and policies intended to sustain healthy wild animals and the positive contributions they make to Canada by reducing disparities and differences in capacity and information across the country.
3. Encourage strategies that improve anticipation of wildlife health policy and practice needs in the face of rapidly changing social and environmental conditions.
4. Improve efficiency and effectiveness of public services by working together towards the goal of sustainable wildlife health.

KEY AREAS OF FOCUS

A Pan-Canadian Approach to Wildlife Health cultivates and sustains multi-jurisdictional relationships, partnerships, expertise and capacity to ensure Canadians and international partners have confidence in declarations on the state of wildlife health in Canada and can be assured that actions are taken to protect wildlife health and the values they bring Canada by focussing its efforts on: **Health Intelligence, Stewardship, Innovation and Governance**

Health Intelligence: *Linking information to document the wildlife health situation in Canada including signals of emerging risks and changes in vulnerability*

Health intelligence is the process of generating, collecting, and analyzing a variety of information to foster collaboration and consultation through innovation in surveillance, information exchange, research, and response to protect, promote, and support decisions affecting wildlife health and its associated social values.

Role 1: Ensure equitable access to diagnostic and investigative capacity to track trends in mortality and disease in wildlife and assess their significance for conservation, public health, and economic activities

Action 1.1: Support and connect regional centres of expertise distributed throughout Canada's distinct regions

Action 1.2: Support harmonized capacity and approaches to wildlife health surveillance across jurisdictions by improving capacity in regions where it is currently lacking

Action 1.3: Build from pre-existing partners and infrastructure to sustain cooperative agreements that maximize economic efficiency in program delivery

Role 2: Provide coordinated analytical capacity to assess, interpret and communicate surveillance outputs.

Action 2.1: Enable a sustainable pan-Canadian information management system that is sufficiently resourced to adapt capacity and methods to meet evolving health intelligence needs and provide an electronic archive to document wildlife health status.

Action 2.2: Ensure adequate human resources for rapid assessment and communication of wildlife health information and that those resources are able to respond to the unique needs of Indigenous communities.

Action 2.3: Cultivate and sustain relationships and information sharing on the determinants and drivers of wildlife health to identify circumstances that increase wild animal vulnerability in advance of harm.

Stewardship: *Provide coordinated and responsible management of a pan-Canadian network of expertise and capacity, providing independent advice, and helping achieve policy goals that address shared values linked to wildlife health*

Wildlife health stewardship is achieved by managing shared assets and information to support timely planning and action to protect and sustain healthy wild animal populations.

Role 3: Maintain a national secretariat responsible for planning and managing capacities and functions needed to provide a pan-Canadian perspective on wildlife health.

Action 3. Establish clear roles and responsibilities for a national secretariat and ensure adequate resources and/or collaborations to deliver on these expectations

Role 4: Regularly assemble a pan-Canadian perspective of the state of wildlife health and ensure timely sharing of policy-relevant knowledge arising from the pan-Canadian perspective

Action 4.1: Ensure adequate human resources and communications capacity to generate regular State of Wildlife Health reports that identify emerging policy needs

Action 4.2: Work with federal, provincial, territorial, and Indigenous governments to strengthen information exchange to improve situational awareness and increase efficiency of program delivery by creating mechanisms for sharing of knowledge, needs and capacities.

Action 4.3: Identify and address policy gaps that allow significant wildlife health issues to go unmet owing to narrow interpretation of jurisdictional mandates.

Innovation: *Ensuring Canada maintains its ability to protect wildlife health and society in a rapidly changing world*

Innovation in wildlife health supports research, development and knowledge transfer leading to innovative public policy to forecast ways to prevent adverse wildlife health outcomes and sustain confidence and access to the services wildlife provide Canadians.

Role 5: Formalize and support agreements with academic and other partners that form a pan-Canadian wildlife health network

Action 5.1: Ensure integration of activities with academic partners and indigenous communities with access to infrastructure and support for research and development that is linked to and enabled by their participation as a regional centre

Action 5.2: Encourage and enable interchanges between academic and government personnel affiliated or working with the pan-Canadian wild animal health program

Role 6: Institutionalize central capacity to translate and mobilize surveillance and research evidence into practice

Action 6.1: Develop and support partnerships and expertise in knowledge mobilization

Governance: *Translating policy goals and social expectations into program performance*

Good governance in wildlife health promotes openness, transparency and integrity; facilitates effective collaboration; and promotes performance orientation in program delivery

Role 7: Create a forum for leadership, strategy and policy development, and inter-jurisdictional cooperation

Action 7.1: Assemble an advisory committee to provide a forum for inter-jurisdictional cooperation and the development of management and policy recommendations for implementation of *A Pan-Canadian Approach for Wildlife Health*

Action 7.2: Develop mechanisms to produce and support 5-year strategic plans and goals for pan-Canadian wildlife health activities

OUTCOMES

Assurance

A Pan-Canadian Approach to Wildlife Health provides public confidence that ensures fair and secure marketplace access and public use of natural resources, collectively worth billions of dollars to the Canadian economy. Its workforce, which is highly trained and quickly mobilized, and its infrastructure, which is state-of-the-art and distributed across Canada, ensures rapid and consistent responses to urgent issues.

- 5-year operational outcomes: (i) Develop and manage a pan-Canadian network of expertise with sufficient credibility and collegial relations to bridge inter-jurisdictional arrangements to help in local response; thus increasing collaboration and efficient coordination. (ii) Produce a skilled wildlife health workforce through training and education; thus preparing for future management challenges

Safety

A consistent and adequate flow of diagnostic samples supports cross-Canada surveillance that; (i) is nationally representative; (ii) identifies needs for adaptive management of endemic problems (iii) provides early warning of emerging threats; (iv) detects infectious, non-infectious, or environmental threats and (v) supports a pan-Canadian sentinel system to monitor environmental safety.

- 5-year operational outcomes: (i) Generate knowledge to improve the effectiveness of policies, including identifying and assessing emerging priorities for policies and programs; thus, increasing advance warning for preparedness and preventive actions. (ii) Assess risks and develop response plans for threats and issues of shared concern, thereby helping to prioritize activities, including those related to climate change.

Equivalence

National capacity for investigation and assessment allows for consistent identification, triage, and prioritization of threats across Canada— helping government in knowledge mobilization, risk prioritization and evidence-based risk management across public health, conservation, agriculture, natural resource management, and other economic and social activities.

- 5-year operational outcomes: Harmonize capacity and improve efficiency by developing and sharing criteria or standards for program delivery and developing pan-Canadian goals or strategies, thereby promoting equitable programs

Efficiency

A Pan-Canadian Approach to Wildlife Health ensures no single agency bears the full burden of program support and that investment of any one agency is leveraged by the capacity, infrastructure, and expertise secured through the total investment of all partners. A health protection focus supports more cost-effective and proactive responses against threats compared to investing only in reactions to problems after they emerge.

- 5-year operational outcomes: (i) Foster collaboration and coordination among government, academia, community and other stakeholders; including administering shared activities, thereby increasing shared knowledge and resources. (ii) Sustain predictable capacity to allow planning and preparedness

Transparent, Accountable and Responsive Programs

This pan-Canadian approach to wildlife health is uniquely suited to address wildlife issues that cross departmental mandates and capacity by (i) filling jurisdiction gaps in wildlife health management to create a single comprehensive pan-Canadian program; (ii) strengthening interactions between governments and citizens; and (iii) providing independence that facilitates public trust.

- 5-year operational outcomes: (i) Coordinate information gathering and expertise to provide credible information, advice, and technical support and be a reference centre to provinces, territories, and Indigenous governments; thus, ensuring all regions are empowered to assess and manage wildlife health threats. (ii) Produce a better understanding of factors that affect wildlife health and wildlife's impacts on human health and economic activities; thus, identifying management options

IMPLEMENTING A PAN-CANADIAN APPROACH TO WILDLIFE HEALTH

Building on Success

Many of the key structures and arrangements necessary to implement *A Pan-Canadian Approach to Wildlife Health* are in place, but require coordination, resources and dedicated leadership.

Wildlife health is a shared federal, provincial and territorial responsibility and the Conservation, Wildlife and Biodiversity Steering Group (CWBSG) plays the central role in inter-jurisdictional cooperation on issues pertaining to wildlife conservation and management. The CWBSG is comprised of federal, provincial and territorial Assistant Deputy Ministers, including representatives from ECCC, DFO, and PCA, as well as all ten provinces and three territories. It is co-chaired by ECCC and a province or territory on a rotating basis. The CWBSG provides leadership in the development and coordination of policies, strategies, programs and activities that address wildlife issues of national concern. Québec has its own Wildlife Health Strategy, but wishes to maintain and develop collaborations with the provinces and the federal government on specific diseases, such as rabies, white nose syndrome in bats, and chronic wasting disease in cervids.

The Director General Federal Partners in Wildlife Health (FPWH) committee was established in 2015 as a forum for information sharing and discussion of issues of mutual concern regarding wildlife health that support federal priorities and mandates. Its purpose is to establish federal goals, objectives and program priorities related to wildlife health and disease issues. FPWH membership consists of Directors General and their designated staff in federal government departments with an interest in wildlife health and disease. Environment and Climate Change Canada chairs the group, which includes the Canadian Food Inspection Agency (CFIA), the Public Health Agency of Canada (PHAC), Parks Canada Agency (PCA),

Agriculture and Agrifood Canada (AAFC), Department of Fisheries and Oceans (DFO) and Indigenous and Northern Affairs Canada (INAC), as well as additional departments with a lesser, yet still significant involvement in wildlife health issues of priority concern.

While Provincial/Territorial wildlife agencies commonly have the responsibility for wildlife health, coordination within the jurisdictions is necessary to ensure P/T readiness and response to zoonotic diseases, diseases transmissible between wildlife and livestock, and human-wildlife conflict, particularly in the agriculture sector. Responsibilities for programs such as public health and animal welfare are organized differently across jurisdictions but coordination is common through provincial cross-disciplinary committees and working groups involving portfolios such as Health, Agriculture, Environment and Natural Resources that are focussed on public health, animal welfare or general bio-resource management issues.

While federal, provincial and territorial governments implement a wide variety of wildlife health programs within their mandates, most wildlife health issues fall across multiple departments and levels of government. For this reason, partnership agreements and coordinated networks of expertise are essential for achieving the goals of *A Pan-Canadian Approach to Wildlife Health*. The primary pan-Canadian wildlife health organization is the Canadian Wildlife Health Cooperative (CWHC). The CWHC was formed in 1992 as a consortium of Canada's veterinary schools. It is an innovative public management success story and a unique model for science procurement and partnership. Multiple agencies depend on the CWHC to generate a reliable situational awareness to inform trading partners, to identify conservation priorities, to alert public health to emerging risks and to fulfill many of the obligations for wildlife health. The CWHC serves as Canada's *de facto* steward of a pan-Canadian wildlife health program but is not guided by a national strategy nor sustained through secured resources, making Canada's national program highly vulnerable.

The CWHC has no legislated power. Its governance and organizational structure have allowed it to build bridges across agencies and jurisdictions to better coordinate response to wildlife health events. The CWHC delivers its services at a fraction of the cost of similar programs elsewhere because of strategic partnerships achieved through its distributed model. This pan-Canadian approach to wildlife health builds on the foundations created by the CWHC by sustaining and supplementing its core capacities as a central steward for wildlife health and creates new opportunities to expand the network of skills and expertise to meet modern demands for a pan-Canadian wildlife health program. Interacting with knowledge users, knowledge producers, affiliates and partners in Canada and abroad will allow for more effective mobilization of information to decision makers. By networking expertise and knowledge found in existing provincial, territorial, federal and academic partners with wildlife health programs, a more resilient, better informed and better prepared health intelligence network is created.

A Collaborative Science Network

Because of its cross-jurisdictional nature, no single department or agency can have a monopoly over the delivery of the public service of wild animal health. A nationally networked approach has the flexibility to deliver and integrate roles that cross Ministries and governments, as well as non-governmental organizations and private sector service providers.

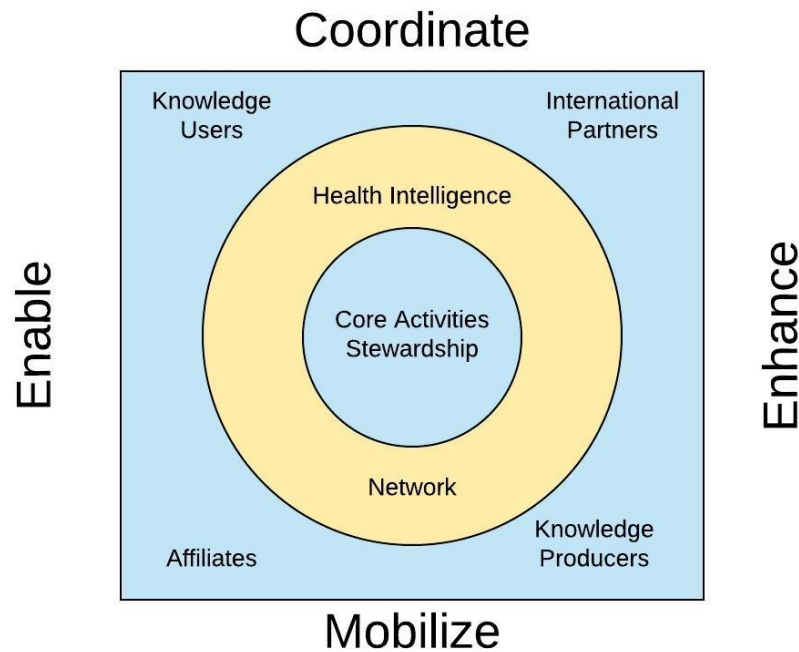
A collaborative science network that stewards a pan-Canadian approach:

1. *Provides a clear focal point* for Canada on pan-Canadian wildlife health issues and for interactions with the global community.
2. *Improves and coordinates communication* by centralizing and sharing experience and information across government agencies and with the public at large to foster consistent messaging.
3. *Improves intelligence systems* by sharing information in a single program rather than across Ministries thus allowing information to be integrated, assessed, and quickly communicated to decision makers.
4. *Enhances collaboration among the various levels of government and stakeholders* because of flexibility in the ways it interacts across jurisdictions, responsibilities, and disciplines.
5. *Allows greater timeliness and flexibility in responding to emergencies and emerging issues* by acting more rapidly and efficiently than can sometimes be achieved from inside a Ministry working across jurisdictions.
6. *Enables a longer-term planning horizon* not bound to the annual government planning cycle, thus allowing planning for health protection in the face of multi-year change, including developing capacity to anticipate risks and communicate vulnerabilities in advance of harms.

Building upon existing CWHC infrastructure and relationships as the central steward of this collaborative science network provides authenticity, trust, and recognition for the program (because of its history, autonomy and sound science base); creates significant economic efficiencies for program delivery; and provides the network needed to meet strategic goals. The structure diagrammed in figure 1 allows:

1. *Concentration and focus of resources* to enhance government's ability to leverage and coordinate cross-agency funding and reducing duplications.
2. *Promotion of a pan-Canadian network of information and capacity sharing* to guide investments and improve situational awareness.
3. *Improved performance outcomes* by creating greater uniformity and consistency in wildlife health intelligence across Canada, shortening the time from knowledge generation to action, building cross-agency relationships, and maximizing geographic representation and harmonization of activities.

Figure 1: Networking expertise and information from a strong central core to deliver on the vision and objectives of *A Pan-Canadian Approach to Wildlife Health*



Governance

A Pan-Canadian Approach to Wildlife Health aims to balance ministerial responsibility and accountability with the autonomy needed to ensure effective coordination and delivery of services across Canada and across interests in wildlife health.

Leadership: An advisory committee comprised of representatives of CWBSG, FPWH and CWHC, as well as other key wildlife health program partners would provide leadership and be accountable to federal/provincial/territorial/indigenous governments with responsibility for environmental, public health and economic interests that cross Ministries and jurisdictions. The advisory committee would report to CWBSG, with CWHC serving as co-chair and secretariat, and committee membership determined by the Ministries represented on the CWBSG and FPWH.

Decision making: The advisory committee would be responsible for ensuring the program operates within the policy and strategy framework outlined in *A Pan-Canadian Approach to Wildlife Health*. The program would play an integral role in providing relevant and reliable data and analyses to policy-makers.

Equity: The National Approach would serve the interests of all Canadians by implementing and governing the programs in a manner that is nationally representative and cognizant of local priorities and needs.

Transparency: Anyone affected by or interested in a wildlife health decision should have the opportunity to participate in or benefit from the pan-Canadian Approach. The pan-Canadian wildlife health network would be transparent and inclusive with explicit rules for information sharing and quality control.