

Potential Contributions of Forest  
Management Areas as Other Effective  
Area-Based Conservation Measures  
(OECMs)

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N° 1075





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## Potential Contributions of Forest Management Areas as Other Effective Area-Based Conservation Measures (OECMs)

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Prepared by

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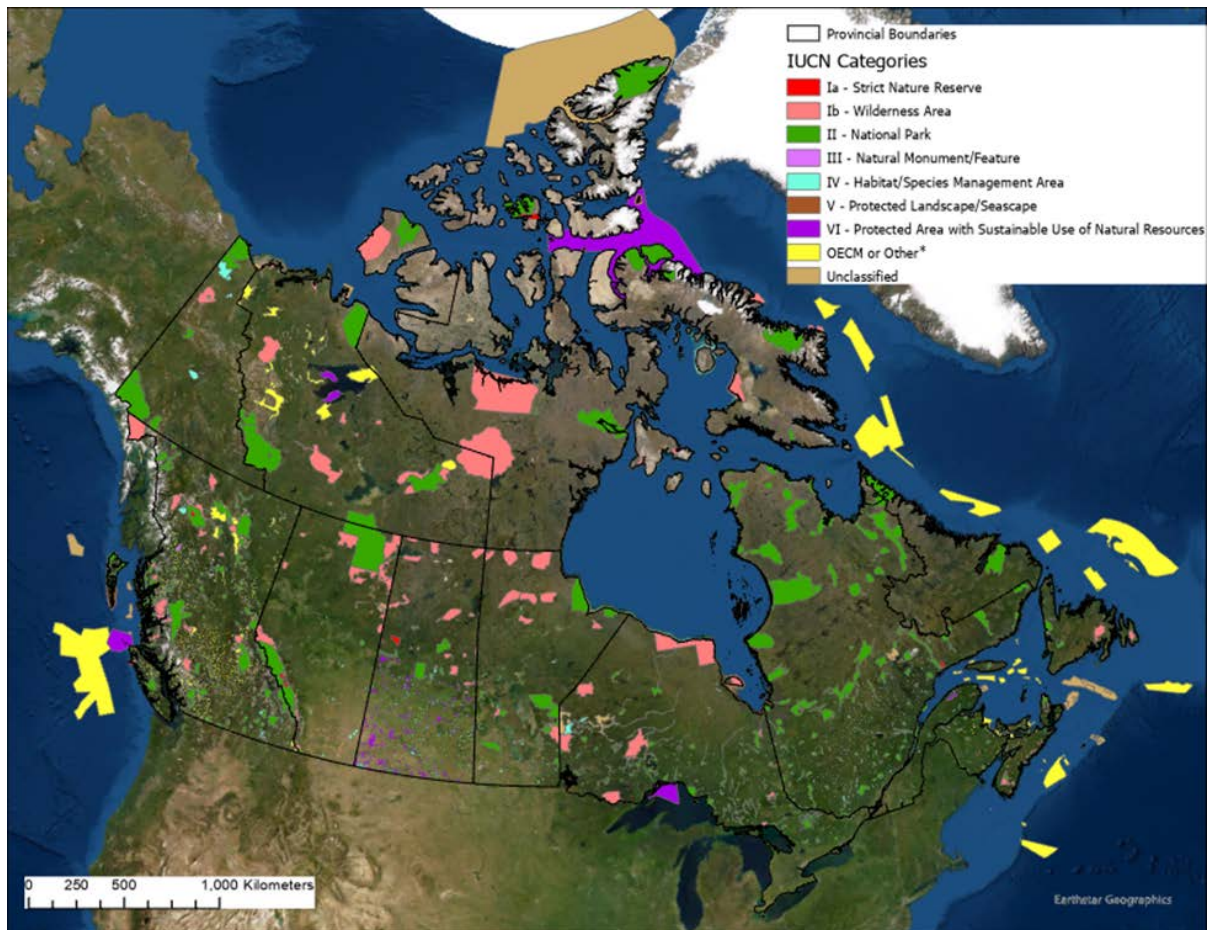
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## EXECUTIVE SUMMARY

- It is estimated that species extinction rates are increasing much faster than previously. The principal causes have been attributed to habitat loss and degradation, human population growth, overexploitation of natural resources, invasive species, pollution, and climate change.
- Coordinated international efforts have been developed to help curb biodiversity losses globally, including the Convention on Biological Diversity (CBD), an international treaty with 193 member countries. In 2010, the CBD's Strategic Plan for Biodiversity 2011-2020 included 20 Aichi Biodiversity Targets, which address each of the five strategic goals defined in the plan. A new designation type, Other Effective Area-Based Conservation Measures (OECMs), was introduced into the language of Aichi Target 11 that recognizes areas that contribute to effective in situ conservation of biodiversity outside the legally designated protected areas network.
- Canada is obligated to develop its own national strategy to conserve biological diversity as a signatory of the CBD. In 2015, Canada released its National Biodiversity Strategy and Action Plan – known as the 2020 Biodiversity Goals and Targets for Canada – which consists of a specific suite of goals and targets in response to the CBD's 2011-2020 strategic plan. Canada adapted Aichi Target 11 within its national biodiversity strategy under its Canada's Target 1, which states that “By 2020, at least 17% of terrestrial areas and inland water, and 10% of marine and coastal areas, are conserved through networks of protected areas and other effective area-based conservation measures.”
- To meet its current and future international commitments under the CBD, Canada needs to increasingly evaluate and designate areas that will achieve biological diversity conservation. It is estimated that half of Canada's managed forest area is set aside for non-timber values, including for the long-term conservation of biodiversity; thus, it may meet the criteria for being designated as an OECM and contribute to Canada's Target 1.
- Although OECMs promise to broaden the ability to conserve biodiversity by improving landscape connectivity through support of the existing protected area network, significant hurdles to their implementation remain. These include a lack of well-developed mechanisms to meet the national definition and criteria; a disconnect between intergovernmental, private, and industrial entities; and limited resources (staff and financial) to undertake training, area screening, and application processes.
- Forest management areas, particularly portions that are not available for harvest and are strictly managed for non-timber values (e.g., biodiversity, wildlife habitat, riparian buffers), may provide effective in situ conservation over the long term and could have the potential for consideration as OECMs. These include, but are not limited to, (1) inaccessible or low productivity forests; (2) old-growth management areas; (3) recreation and tourist areas; (4) riparian zones; and (5) special management areas, wildlife or habitat areas, and reserves. Ultimately, successful conservation of biological diversity within Canada's forests will hinge on active engagement and collaboration with the forest sector's full suite of stakeholders, including industry.



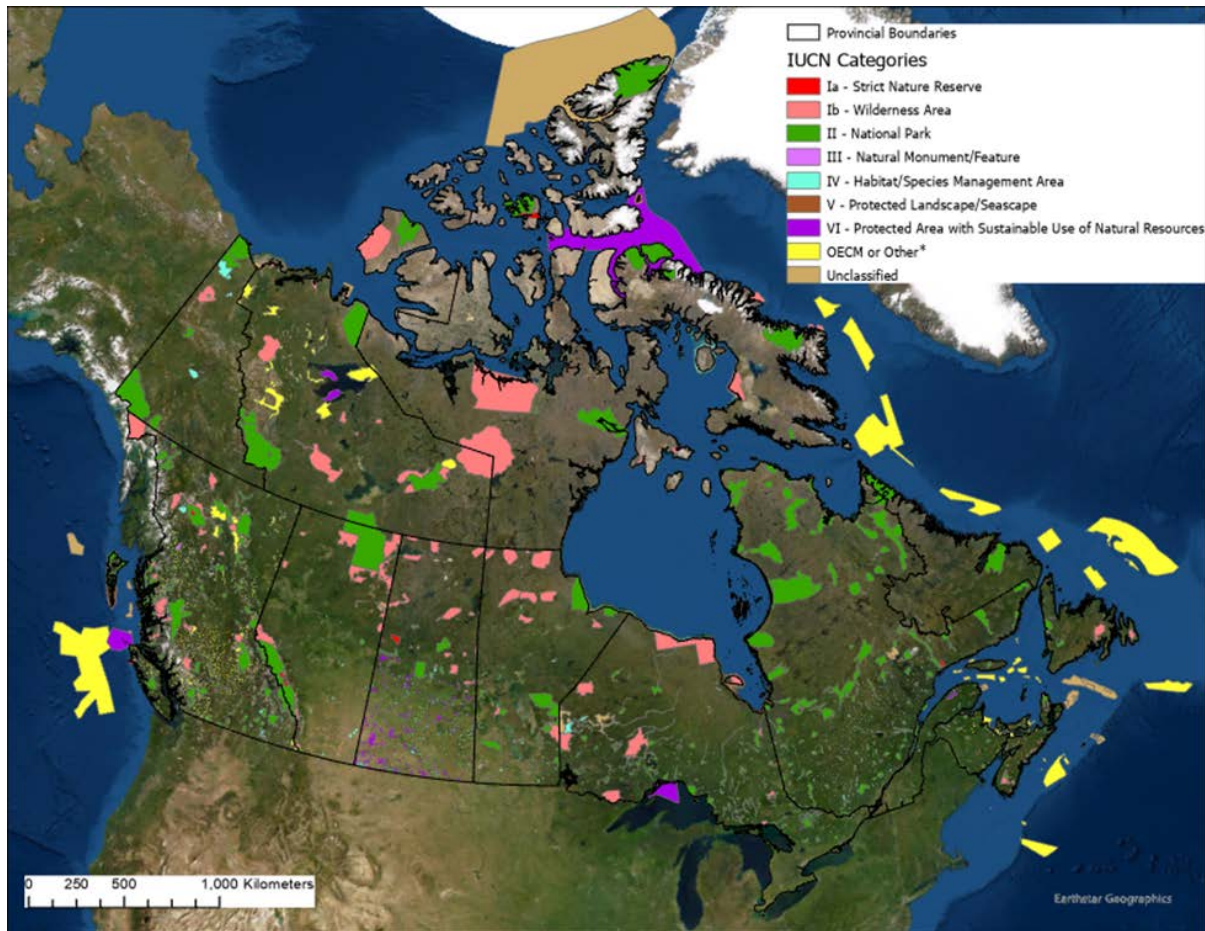


Canada's protected and conserved areas by IUCN category

## SOMMAIRE

- On estime que le rythme d’extinction des espèces augmente beaucoup plus rapidement qu’avant. On attribue principalement cette accélération à la dégradation et à la perte d’habitat, à la croissance de la population humaine, à la surexploitation des ressources naturelles, aux espèces envahissantes, à la pollution et aux changements climatiques.
- On a coordonné les actions à l’échelle internationale pour essayer de freiner les pertes de biodiversité à l’échelle mondiale, notamment par l’adoption de la Convention sur la diversité biologique (CDB), un traité international signé par 193 pays membres. En 2010, le plan stratégique 2011-2020 pour la diversité biologique de la CDB incluait 20 objectifs (“Objectifs d’Aichi pour la biodiversité”) qui répondaient aux cinq buts stratégiques définis dans le plan. On a introduit un nouveau type de désignation (“Autres mesures de conservation efficaces par zone (AMCEZ)”) dans la description de l’Objectif d’Aichi 11. Cette nouvelle désignation reconnaissait les territoires contribuant à la conservation efficace in situ de la biodiversité ayant lieu en dehors du réseau des aires légalement protégées.
- À titre de signataire de la CDB, le Canada avait l’obligation d’élaborer sa propre stratégie nationale pour conserver la diversité biologique. En 2015, le Canada a publié sa stratégie et son plan d’action national pour la biodiversité appelé “Buts et objectifs canadiens pour la biodiversité d’ici 2020” en réponse au plan stratégique 2011-2020 de la CDB. Le plan d’action canadien contient un ensemble de buts et objectifs précis. L’Objectif 1 de la stratégie nationale sur la biodiversité du Canada – qui stipule que “d’ici 2020, au moins 17 % des zones terrestres et d’eaux intérieures et 10 % des zones côtières et marines sont conservées par l’entremise de réseaux d’aires protégées, et d’autres mesures efficaces de conservation dans des superficies clairement définies” – s’inscrit dans l’Objectif d’Aichi 11.
- Pour respecter ses engagements internationaux actuels et futurs dans le cadre de la CDB, le Canada doit intensifier l’évaluation et la désignation de zones qui lui permettront d’atteindre son objectif de conservation de la diversité biologique. On estime que la moitié des forêts aménagées du Canada sont gardées en réserve pour des valeurs autres que le bois, notamment pour la conservation à long terme de la biodiversité. Par conséquent, il est possible que ces forêts puissent respecter les critères pour devenir une AMCEZ et contribuer à l’atteinte de l’Objectif 1 du Canada.
- Bien que les AMCEZ permettent d’augmenter la capacité d’un pays à conserver la biodiversité en améliorant la connectivité écologique grâce au soutien du réseau d’aires protégées existantes, leur implantation comporte encore des obstacles, notamment l’absence de mécanismes bien établis pour respecter la définition et les critères nationaux, un manque de communication entre les organisations intergouvernementales, les entreprises privées et le secteur industriel, et des ressources limitées (humaines et financières) pour faire de la formation, évaluer les zones et mettre en branle les processus d’application.

- Il est possible que les zones d'aménagement forestier, en particulier les secteurs qui ne sont pas disponibles pour la récolte et qui sont uniquement aménagées pour des valeurs autres que le bois (p. ex. biodiversité, faune, habitat, bande riveraine), puissent assurer une conservation in situ efficace à long terme et puissent être potentiellement considérées comme des AMCEZ. Ces zones comprennent, mais sans s'y limiter, (1) les forêts inaccessibles ou peu productives; (2) les zones d'aménagement de forêts anciennes; (3) les zones récréatives et touristiques; (4) les zones riveraines; et (5) les zones spéciales de gestion, les réserves pour la faune et les habitats, et les réserves. Ultimement, le succès de la conservation de la biodiversité dans les forêts du Canada dépendra de la participation active et de la collaboration de toutes les parties prenantes du secteur forestier, y compris l'industrie elle-même.



Les aires protégées et conservées au Canada par catégorie IUCN



# **POTENTIAL CONTRIBUTIONS OF FOREST MANAGEMENT AREAS AS OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES (OECMs)**

TECHNICAL BULLETIN NO. 1075  
NOVEMBER 2021

## **ABSTRACT**

Over the past few decades, several international treaties have been developed to implement coordinated efforts to minimize the loss of biodiversity worldwide, including the Convention on Biological Diversity (CBD), an international treaty with 193 member countries. In 2010, the CBD's Strategic Plan for Biodiversity 2011-2020 included 20 Aichi Biodiversity Targets, which address each of the five strategic goals defined in the plan. A new conservation designation, Other Effective Area-Based Conservation Measures (OECMs), was introduced within the CBD's Aichi Target 11 and aims to protect at least 17% of the world's terrestrial and inland water and 10% of the coastal and marine areas by 2020. As a signatory under the CBD, Canada is obligated to develop a national strategy to conserve biological diversity, which it did in 2015 with the release of its 2020 Biodiversity Goals and Targets for Canada. This strategy includes four goals and nineteen targets, including Target 1, whereby Canada has committed to conserve the same proportions of terrestrial and inland water and coastal and marine areas identified in Aichi Target 11. At the end of 2020, Canada achieved its coastal and marine conservation target (13.8%), mainly through marine OECMs, but failed to meet its conservation target for terrestrial land and inland waters (12.1%). Because Canada is rich in natural capital, it is uniquely positioned to achieve its terrestrial conservation goals for several reasons: (1) it is the second largest country in the world; (2) it includes an engaged forest sector that manages large proportions of land that are set aside from active forest management and thus could contribute to additional OECMs in the future; and, (3) it is currently a world leader in OECM application. Canada's forest sector has long been interested in effective conservation of biodiversity over the long term within the lands it manages, and there may be related opportunities to contribute to OECMs. Further, a significant portion of the Canadian landmass is under long-term forest management agreements, through which areas are also managed for non-timber goals and values such as biodiversity and habitat conservation. Canada remains committed to conserving even more of its lands for biodiversity in the future, but significant hurdles must be overcome before fully embracing OECMs as a conservation option towards meeting its national and international commitments. These include a lack of clear mechanisms, limited information and knowledge exchange, a disconnect between government and non-government organizations and industry, and limited resources (staff and financial) to evaluate areas for suitability as OECMs. In this report, NCASI outlines Canada's commitments to the CBD and its national strategy for conserving biodiversity, provides an overview of OECMs, and outlines their possible application within Canada's managed forests.

## **KEYWORDS**

biodiversity, Canada's Target 1, CBD, conservation, Convention on Biological Diversity, forest management, OECM, other effective area-based conservation measures, protected areas

## **RELATED NCASI PUBLICATIONS**

Technical Bulletin No. 983 (April 2011). *The role of forest management in maintaining conservation values.*

Special Report No. 14-03 (May 2014). *Compilation of Canadian provincial and federal regulation relevant to forest management activities.*

Fact Sheet (July 2021). *Canadian forestry regulations and standards.*

White Paper (June 2020). *The contribution of managed forests in Canada to biodiversity: how forest management plays an active role.*

# **CONTRIBUTIONS POTENTIELLES DES ZONES D'AMÉNAGEMENT FORESTIER COMME AUTRES MESURES DE CONSERVATION EFFICACES PAR ZONE (AMCEZ)**

BULLETIN TECHNIQUE N<sup>o</sup> 1075  
NOVEMBRE 2021

## **RÉSUMÉ**

Au cours des dernières décennies, on a adopté plusieurs traités internationaux pour coordonner les actions en matière de réduction de la perte de biodiversité à l'échelle mondiale, notamment l'adoption de la Convention de la diversité biologique (CDB), un traité international signé par 193 pays membres. En 2010, le plan stratégique 2011-2020 pour la diversité biologique de la CDB incluait 20 objectifs ("Objectifs d'Aichi pour la biodiversité") qui répondaient aux cinq buts stratégiques définis dans le plan. On a introduit un nouveau type de désignation de conservation ("Autres mesures de conservation efficaces par zone (AMCEZ)") dans la description de l'Objectif d'Aichi 11. Cette nouvelle désignation visait à protéger au moins 17 % des zones terrestres et d'eaux intérieures et 10 % des zones côtières et marines à l'échelle mondiale d'ici 2020. À titre de signataire de la CDB, le Canada avait l'obligation d'élaborer une stratégie nationale pour conserver la diversité biologique, ce qu'il a fait en publiant, en 2015, le document intitulé "Buts et objectifs canadiens pour la biodiversité d'ici 2020". Cette stratégie comprenait quatre buts et dix-neuf objectifs, notamment l'Objectif 1 dans lequel le Canada s'engageait à conserver les mêmes pourcentages de zones terrestres et d'eaux intérieures et de zones côtières et marines indiqués dans l'Objectif d'Aichi 11. À la fin de l'année 2020, le Canada avait atteint son objectif de conservation des zones côtières et marines (13,8%) surtout grâce à des AMCEZ de nature marine, mais n'avait pas atteint son objectif de conservation des zones terrestres et d'eaux intérieures (12,1%). En raison de son riche capital naturel, le Canada est particulièrement en mesure d'atteindre ses buts en matière de conservation terrestre, et ce, pour plusieurs raisons : (1) il est le deuxième plus grand pays au monde; (2) il a un secteur forestier soucieux des forêts qui gère un fort pourcentage de terres exclues des activités de gestion active des forêts et qui pourrait donc contribuer à l'ajout d'AMCEZ dans le futur; et, (3) il est présentement un chef de file mondial dans l'implantation d'AMCEZ. L'industrie forestière du Canada s'intéresse depuis longtemps à la conservation efficace de la biodiversité à long terme au sein des terres dont elle a la gestion. Il existerait donc peut-être des possibilités de contribuer aux AMCEZ. De plus, une grande partie du territoire canadien est couvert par des contrats d'aménagement forestier à long terme qui couvrent aussi des zones qui sont aménagées pour des raisons et des valeurs autres que le bois (p. ex. la conservation de la biodiversité et des habitats). Le Canada reste déterminé à conserver encore plus de terres dans le futur pour préserver la biodiversité, mais il y a de nombreux obstacles à lever avant d'adopter totalement les AMCEZ comme option de conservation pour respecter ses engagements nationaux et internationaux. Ces obstacles comprennent notamment l'absence de mécanismes clairs, le peu d'échange d'informations et de connaissances, un manque de communication entre les organisations gouvernementales et non gouvernementales et l'industrie, et des ressources limitées (humaines et financières) pour évaluer les zones pour leur pertinence comme AMCEZ. Dans ce rapport, NCASI présente les grandes lignes des engagements du Canada vis-à-vis de la CDB et de sa stratégie nationale pour conserver la biodiversité, donne un aperçu des AMCEZ et décrit de quelle façon les AMCEZ pourraient possiblement s'appliquer dans les forêts aménagées du Canada.

## **MOTS-CLÉS**

aires protégées, AMCEZ, aménagement forestier, autres mesures de conservation efficaces par zone, biodiversité, CDB, conservation, Convention sur la diversité biologique, Objectif 1 du Canada

## **AUTRES PRUBLICATIONS DU NCASI**

Bulletin technique n° 983 (avril 2011). *Le rôle de l'aménagement forestier dans le maintien des valeurs de conservation* (seuls la Note du Président et le résumé sont en français)

Rapport spécial n° 14-03 (mai 2014). *Compilation des règlements canadiens (provinciaux et fédéraux) qui s'appliquent aux activités d'aménagement forestier* (seuls la Note du Président et le résumé sont en français). Fiche explicative (juillet 2021). *Règlements et normes encadrant la foresterie au Canada*.

Papier blanc (juin 2020). *The contribution of managed forests in Canada to biodiversity: how forest management plays an active role*.

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# POTENTIAL CONTRIBUTIONS OF FOREST MANAGEMENT AREAS AS OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES (OECMs)

## 1.0 INTRODUCTION

Biodiversity<sup>1</sup> contributes to a variety of ecological services and processes that are essential to human well-being. For example, biodiversity can supply various products (e.g., food, timber), improve air and water quality, support pollination, and regulate several ecosystem processes (e.g., climate, floods, diseases control) (MEA 2005; Isbell et al. 2018; FAO 2020). In general, the public and scientific communities place a high value on conserving ecosystems and their species (NCASI 2011).

According to some scientists, the earth is currently undergoing a sixth great mass extinction of species (Barnosky et al. 2011; Ceballos et al. 2015; Ceballos, Ehrlich, and Raven 2020), where extinction rates have been estimated to be 1000 times faster than those estimated in the five previous mass extinctions (Pimm et al. 2014; Ceballos, Ehrlich, and Raven 2020). Habitat loss and degradation are the causal factors most commonly attributed to this decline. More specifically, human population growth, overexploitation of natural resources, introduction of invasive species, pollution, and climate change may all play roles in species extinctions (Carpenter et al. 2009; Isbell et al. 2018; IPBES 2019; Shivanna 2020).

The primary conservation tool to curb biodiversity loss worldwide has been to establish national protected area (PA) networks (Chape et al. 2005; Corson et al. 2014; Gloss et al. 2019). The International Union for Conservation of Nature (IUCN) classifies PAs by management categories<sup>2</sup> that are recognised by international bodies and national governments as the global standards for defining PAs. Over the last century an exponential growth in PAs has occurred, increasing from 141 designated areas (<1% of land area) in 1911 to 257,889 as of February 2021, corresponding to 15.4% of the earth's land surface being protected (20,749,121 km<sup>2</sup>) in addition to 7.6% of its marine environments (27,718,127 km<sup>2</sup>) (Wulder et al. 2018; UNEP-WCMC, IUCN, and NGS 2021). Despite these increases in global coverage of PAs and the consensus of their importance, biodiversity loss continues and is fueling an ongoing debate with respect to their effectiveness in achieving biodiversity outcomes, particularly given the uncertainty of future climate change and ongoing species decline (Butchart et al. 2012; Geldmann et al. 2015; Mace et al. 2018; IPBES 2019). The gradual realization that the PA network alone is insufficient to meet biodiversity conservation needs, along with the fact that it presents many challenges regarding human rights, governance, equity, and livelihoods, has led scientists to think about making fundamental changes in the way conservation is planned and undertaken (Dudley et al. 2018).

The international community has incorporated biodiversity protection into several international treaties to initiate coordinated efforts to improve biodiversity conservation and minimize species loss worldwide. Among these initiatives, the Convention on Biological Diversity (CBD), an international treaty with 196 states (168 of which have signed), entered into force in December 1993 and focused on three main objectives: (1) conservation of biological diversity; (2) sustainable use of the components of biological diversity; and (3) fair and equitable sharing of the benefits arising out of the utilization of genetic resources (CBD 2007). In 2010, the CBD developed the Strategic Plan for Biodiversity 2011-2020 that included five strategic goals and 20 targets (better known as the Aichi

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<sup>1</sup> "Biodiversity includes all organisms, species, and populations; the genetic variation among these; and all their complex assemblages of communities and ecosystems. It also refers to the interrelatedness of genes, species, and ecosystems and their interactions with the environment" (ESA 1997).

<sup>2</sup> Protected Area, or PA in this report, refers to an area that meets one of the seven IUCN category definitions of a protected area: Ia - Strict Nature Reserve; Ib - Wilderness Area; II - National Park; III - Natural Monument/Feature; IV - Habitat/Species Management Area; V - Protected Landscape/Seascape; VI - Protected Area with Sustainable Use of Natural Resources (see Section 3.3.2).

Biodiversity Targets<sup>3</sup>; also see Section 2). Aichi Target 11 addresses the measurable component of the PA network, stating:

By 2020, at least 17% of terrestrial and inland water, and 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes. (CBD 2020a)

This Strategic Plan introduced a new designation, Other Effective Area-Based Conservation Measures (OECMs), and included it as a means of capturing areas that contribute to delivering effective in situ conservation of biodiversity but fall outside the recognized IUCN PA categories, thus expanding the conservation coverage of area-based measures (Laffoley et al. 2017; Dudley et al. 2018; IUCN-WCPA 2019). OECM was officially defined in 2018 as:

...a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socioeconomic, and other locally relevant values. (CBD 2018, Decision 14/8)

Although area-based conservation measures have generally grown in popularity over the last few decades, their long-term success will depend on adequate funding, supportive policies and regulations, and an ability to incorporate the effects of climate change (Maxwell et al. 2020). Further, ongoing concerns over area-based conservation strategies include potential inequalities between and among governance structures and can restrict livelihoods because the approach leads to a large area set aside for conservation (Dudley et al. 2018). OECMs were only formally defined in 2018 (IUCN-WCPA 2019). Given this relatively new designation, confusion among interested stakeholders will need to be addressed to better understand how and where OECMs can be applied (Juffe-Bignoli et al. 2016; Dudley et al. 2018; Lemieux et al. 2019). That said, incorporation of OECMs within Aichi Target 11 offers alternative approaches to support the existing PA network while also increasing landscape connectivity and improving the ability to curb biodiversity loss (MacKinnon et al. 2015; Dudley et al. 2018; Pathway to Canada Target 1 2018; Saura et al. 2018).

In Canada, growing social and political pressures over the last several decades have led to increased national commitments towards safeguarding biodiversity, resulting in a push to identify and designate a more significant proportion of land as protected to improve conservation outcomes. As the first industrialized country to ratify the CBD in 1992, Canada was committed, like other CBD signatories, to prepare its national strategy to address the 2011-2020 Strategic Plan. With the release of Canada's Biodiversity Outcomes Framework and 2020 Goals & Targets in 2015 (ECCC 2016), Canada adopted a similar target to Aichi Target 11 at the national level – Canada Target 1:

By 2020, at least 17% of terrestrial areas and inland water, and 10% of marine and coastal areas, are conserved through networks of protected areas and other effective area-based conservation measures.

Given that Canada is rich in natural capital, it is uniquely positioned to be able to contribute towards national and international biodiversity targets (Coristine et al. 2019). A prominent source for

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<sup>3</sup> Biodiversity targets are referred to as Aichi Biodiversity Targets because they were agreed to and published in a revised and updated Strategic Plan for Biodiversity 2010-2020 at the tenth meeting of the Conference of the Parties (18-29 October 2010) in Nagoya, Japan. Nagoya is the capital and largest city of the Aichi prefecture.



conserving biodiversity in Canada is within its forests, which cover approximately 347 million ha (38% of its total land area). Canada is rich in biodiversity, with over 80,000 species (CESCC 2016). Its forests have an estimated 212 tree species (NFI 2014), over 20,000 plant species, and over 300 species of birds, and provide habitat to some of North America's most iconic large mammals (Ruckstuhl, Johnson, and Miyanishi 2008; NRCan 2020c).

A potential opportunity to contribute to Canada's Target 1 may exist within its managed forests, which cover approximately 226 million ha. Most (nearly 90%) are under a long-term management plan (NRCan 2020b). While areas that are actively being managed for timber should be reported under Canada's Target 6<sup>4</sup>, they are also managed for non-timber values (e.g., water, biodiversity) and incorporate set-asides (e.g., wetlands, low productive forest, wildlife and habitat areas) that are to remain unharvested over the long-term. These set-asides may provide an excellent opportunity and starting point for the evaluation of suitability as OECMs. Further, Canada's forest sector is eager to investigate opportunities for contributing to OECMs, given that the industry has long been interested in achieving effective conservation of biodiversity within the lands it manages.

The objectives of this report are fourfold: (1) to outline and review the CBD and Canada's commitments; (2) to outline Canada's Target 1, including the definition, governance, and application of OECMs; (3) to summarize Canada's progress on Target 1 to date; and (4) to introduce possible avenues where set-asides within forest management areas may be suitable for qualification as OECMs. Because this report's focus is on OECMs in the context of forest management, it only briefly touches on Indigenous and community conserved areas (ICCAs – territories and areas conserved by Indigenous Peoples and local communities) and does not address the marine component of OECMs.

Seven appendices provide additional information. Appendices A and B comprise recommendations from the reports *We Rise Together* (ICE 2018) and *Canada's Conservation Vision* (NAP 2018), respectively. Appendix C contains an example of use of the *Pathway to Canada Target 1* (2019) Decision Support Tool. Appendices D and E show protected and conserved areas across Canada. Appendix F is the *Leaders Pledge for Nature Actions* (Leaders Pledge for Nature 2020). Appendix G contains a list of acronyms used in this report.

## 2.0 INTERNATIONAL EFFORTS TO ADDRESS BIODIVERSITY DECLINE

For decades, coordinated efforts have been implemented to minimize biodiversity losses globally. The first formal coordinated effort to provide scientific knowledge and encourage global conservation efforts was established in the 1940s with the International Union for the Protection of Nature (IUPN), now known as the IUCN (NCASI 2013). In 1972, the United Nations (UN) Conference on Human Environment was the first world conference where biological diversity management was deemed a global priority. Several conventions for the conservation of specific ecosystem types and natural sites were established during the same decade, including the Convention on Wetlands (1971), the World Heritage Convention (1972), the Convention on International Trade in Endangered Species (CITES, 1973), the Convention on Migratory Species (1979), and several regional conventions (CBD 2007). In the 1980s, a consensus was growing among scientists, policy-makers, and the general public regarding a need to establish novel approaches that would curb and address biodiversity decline. In 1983, the UN General Assembly established an independent commission to assess environmental and sustainable development issues along with strategies for better management. In 1987, the World Commission on Environment and Development released the report *Our Common Future*, better known as the Brundtland Report, which introduced the concept of sustainable development and

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<sup>4</sup> Canada's Target 6: By 2020, continued progress is made on the sustainable management of Canada's forests (ECCC 2016).

described how it could be achieved (Brundtland Commission 1987). The report pointed out the importance of making fundamental changes to currently practiced development strategies by restructuring systems to integrate the environmental dimension into decision-making processes, which ultimately changed the way development was thought of and undertaken (Jarvie 2016).

In the 1990s, after multiple science-based reports regarding biodiversity loss and mounting social pressure due to the role played by anthropogenic disturbance, the international community held 12 major conferences to tackle environmental issues. More specifically, in 1992, several international agreements were adopted at the UN Conference on Environment and Development (UNCED, informally known as the Earth Summit or Rio Earth Summit), which included: (1) the Rio Declaration on Environment and Development (consisting of 27 principles intended to guide countries in future sustainable development); (2) Agenda 21 (aimed at achieving global sustainable development by 2000); (3) the UN Framework Convention on Climate Change<sup>5</sup> (UNFCCC, with an overall objective to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent anthropogenic interference with the climate system); (4) the Forests Principles<sup>6</sup> (15 principles for conservation and sustainable development in forestry); and (5) the CBD.

Following recommendations from the UN General Assembly, the IUCN began developing draft articles (1984 to 1989) to establish a formal treaty that would address biodiversity conservation. The primary focus of the IUCN in developing this treaty was to ensure that global actions could contribute to halting the loss of biodiversity at the genetic, species, and ecosystem levels (Glowka, Burhenne-Guilmin, and Synge 1994). The draft articles addressed conservation actions within and outside PAs, and a financial mechanism was introduced to help decrease the inequality of conservation measures between the northern and the southern hemispheres (CBD 2007). Further, these articles were developed in collaboration with the IUCN's Commission on Environmental Law and the IUCN Environmental Law Centre with help from science and policy experts, most notably the joint IUCN/Worldwide Fund for Nature Plant Advisory Group (Glowka, Burhenne-Guilmin, and Synge 1994).

At the 14<sup>th</sup> UN Environment Programme (UNEP) Governing Council meeting (1987), the United States (US) proposed creating an umbrella convention that would cover existing international conventions that achieve conservation efforts (Boisson de Chazournes 2009). In response, the Governing Council established the ad hoc Working Group of Experts on Biological Diversity to assess the desirability of implementing such a convention (CBD 2007, Decision 14/26). This working group held three sessions between November 1988 and July 1990, through which they concluded that consolidation of existing conventions would not cover all aspects of global conservation, and thus, a new treaty was needed (CBD 2007). Based on the group's final report, the Governing Council established a second working group in 1989, at the 15<sup>th</sup> UNEP Governing Council meeting, called the ad hoc Working Group of Legal and Technical Experts (Roberts 1992, Decision 15/34). Its mandate was to negotiate an international legally binding treaty that would cover biodiversity conservation and its associated social and economic aspects (Roberts 1992; Boisson de Chazournes 2009). The group held three meetings (1990 to 1991), during which the initial draft of the CBD was developed, building on previous work by the IUCN, the Food and Agriculture Organization (FAO) of the UN, and studies commissioned by UNEP (Glowka, Burhenne-Guilmin, and Synge 1994). The group was later renamed the Intergovernmental Negotiating Committee for a CBD and held four additional negotiating sessions spanning over a year (1991 to 1992). During these sessions, it became apparent that most parties involved with the CBD wanted a convention that would also address issues related

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<sup>5</sup> Note: The Kyoto Protocol, which was signed in 1997 and entered into force in 2004, was the first extension of the UNFCCC.

<sup>6</sup> The Montréal Process, a voluntary agreement on sustainable forest management of temperate and boreal forests, was initiated as a result of this initiative.

to accessing genetic and biotechnical resources (Boisson de Chazournes 2009). Not all parties agreed on these new focus areas, and the US opposed the idea of including genetically modified organisms in the convention.

During the negotiations, the convention's financial mechanism had been a subject of opposition between parties, where two approaches were considered: "...an international fund based on fees levied on the use of biological, and especially genetic, resources in the North"; or "...an international corporation, in which parties could invest through buying shares..." (Glowka, Burhenne-Guilmin, and Synge 1994). Parties eventually agreed to provide funds to developing countries through grants or on a concessional basis under the Conference of the Parties' (COP) authority. In the final hours of negotiations, parties added a compromise clause (Article 39) adopting the Global Environmental Facility as the convention's mechanism on an interim basis (UN 1992). Parties agreed on the convention text in the final session of negotiations in Nairobi on May 22, 1992. At the UNCED in Rio de Janeiro in June 1992 (Rio Earth Summit), 168 of the 196 parties (195 states and the European Union) signed the agreement, which entered into effect in December 1993 (UN 1996).

The CBD consists of an international treaty that acts as a framework that sets overall goals and targets, and that organizes technical and financial cooperation between parties. The main objectives of the convention are:

1. Conservation of biological diversity
2. Sustainable use of components of biological diversity
3. Fair and equitable sharing of the benefits arising out of the use of genetic resources

The CBD is coordinated through decisions made by the COP, which constitutes the convention process's governing body and has met biennially since 2000. As of 2016, all UN member states except the US have ratified the treaty. The US has signed the treaty but not ratified it. According to the CBD:

The primary (and traditional) distinction is only between ratification and accession. In this regard, it is only States which have signed a treaty, when it was open for signature, that can proceed to ratify it. Signature of itself does not establish consent to be bound, hence the further act of ratification. (CBD 2011)

In 2002, ten years after the convention was signed, parties adopted the Strategic Plan 2002-2010 (CBD 2010). The main objective of this plan was "...to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth" (CBD 2010). The plan consisted of four strategic goals and 19 objectives (Table 2.1). Unfortunately, the strategic plan failed to achieve its 2010 Biodiversity Target<sup>7</sup>. The Global Biodiversity Outlook (GBO-3), a flagship publication of the CBD, concluded that direct pressures on biodiversity were either constant or increasing, and fragmentation and degradation of ecosystems were also continuing (Butchart et al. 2010; SCBD 2010). As a result, towards the end of the Strategic Plan's term, parties and stakeholders held a series of consultations and meetings to update the Strategic Plan and implement a new framework for the next decade (2011-2020, CBD 2017). In response to the recommendations proposed, the Strategic Plan for Biodiversity 2002-2010 was updated (Decision X/2) and parties adopted it at the COP-10 in Nagoya, Aichi Prefecture, Japan (SCBD 2010; CBD 2017). The 2011-2020 Strategic Plan includes five new strategic goals and 20 targets, better known as the Aichi Biodiversity Targets (Table 2.2).

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<sup>7</sup> Canada also reported having "mixed" results in reducing the rate of biodiversity loss through its Fourth National Report to the CBD (EC 2009).

**Table 2.1.** Strategic Goals and Objectives of the Convention on Biological Diversity's Strategic Plan for 2002-2010

Strategic Goals	Objectives
Goal 1: The Convention is fulfilling its leadership role in international biodiversity issues.	<p>1.1 The Convention is setting the global biodiversity agenda.</p> <p>1.2 The Convention is promoting cooperation between all relevant international instruments and processes to enhance policy coherence.</p> <p>1.3 Other international processes are actively supporting implementation of the Convention, in a manner consistent with their respective frameworks.</p> <p>1.4 The Cartagena Protocol on Biosafety is widely implemented.</p> <p>1.5 Biodiversity concerns are being integrated into relevant sectoral or cross-sectoral plans, programmes and policies at the regional and global levels.</p> <p>1.6 Parties are collaborating at the regional and subregional levels to implement the Convention.</p>
Goal 2: Parties have improved financial, human, scientific, technical, and technological capacity to implement the Convention.	<p>2.1 All Parties have adequate capacity for implementation of priority actions in national biodiversity strategy and action plans.</p> <p>2.2 Developing country Parties, in particular the least developed and the small island developing States amongst them, and other Parties with economies in transition, have sufficient resources available to implement the three objectives of the Convention.</p> <p>2.3 Developing country Parties, in particular the least developed and the small island developing States amongst them, and other Parties with economies in transition, have increased resources and technology transfer available to implement the Cartagena Protocol on Biosafety.</p> <p>2.4 All Parties have adequate capacity to implement the Cartagena Protocol on Biosafety.</p> <p>2.5 Technical and scientific cooperation is making a significant contribution to building capacity.</p>
Goal 3: National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the objectives of the Convention.	<p>3.1 Every Party has effective national strategies, plans and programmes in place to provide a national framework for implementing the three objectives of the Convention and to set clear national priorities.</p> <p>3.2 Every Party to the Cartagena Protocol on Biosafety has a regulatory framework in place and functioning to implement the Protocol.</p> <p>3.3 Biodiversity concerns are being integrated into relevant national sectoral and cross-sectoral plans, programmes and policies.</p> <p>3.4 The priorities in national biodiversity strategies and action plans are being actively implemented, as a means to achieve national implementation of the Convention, and as a significant contribution towards the global biodiversity agenda.</p>
(Continued on next page.)	

Table 2.1. Continued

Strategic Goals	Objectives
<p>Goal 4: There is a better understanding of the importance of biodiversity and of the Convention, and this has led to broader engagement across society in implementation.</p>	<p>4.1 All Parties are implementing a communication, education, and public awareness strategy and promoting public participation in support of the Convention.</p> <p>4.2 Every Party to the Cartagena Protocol on Biosafety is promoting and facilitating public awareness, education and participation in support of the Protocol.</p> <p>4.3 Indigenous and local communities are effectively involved in implementation and in the processes of the Convention, at national, regional and international levels.</p> <p>4.4 Key actors and stakeholders, including the private sector, are engaged in partnership to implement the Convention and are integrating biodiversity concerns into their relevant sectoral and cross-sectoral plans, programmes and policies.</p>

[Source: CBD 2010]



**Table 2.2.** Strategic Goals and Aichi Targets of the Strategic Plan for Biodiversity 2011-2020

Strategic Goals/Targets	Description
Goal A	Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Target 1	By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.
Target 2	By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
Target 3	By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.
Target 4	By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.
Goal B	Reduce the direct pressures on biodiversity and promote sustainable use.
Target 5	By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.
Target 6	By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.
Target 7	By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.
Target 8	By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.
Target 9	By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.
Target 10	By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.
(Continued on next page.)	

Table 2.2. Continued

Strategic Goals/Targets	Description
Goal C	Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.
Target 11	By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes.
Target 12	By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.
Target 13	By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.
Goal D	Enhance the benefits to all from biodiversity and ecosystem services.
Target 14	By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, Indigenous and local communities, and the poor and vulnerable.
Target 15	By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.
Target 16	By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation
Goal E	Enhance implementation through participatory planning, knowledge management and capacity building.
Target 17	By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.
Target 18	By 2020, the traditional knowledge, innovations and practices of Indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of Indigenous and local communities, at all relevant levels.
Target 19	By 2020, knowledge, the science base and technologies relating to biodiversity, its values functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.
Target 20	By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resources needs assessments to be developed and reported by Parties

[Source: CBD 2020a]

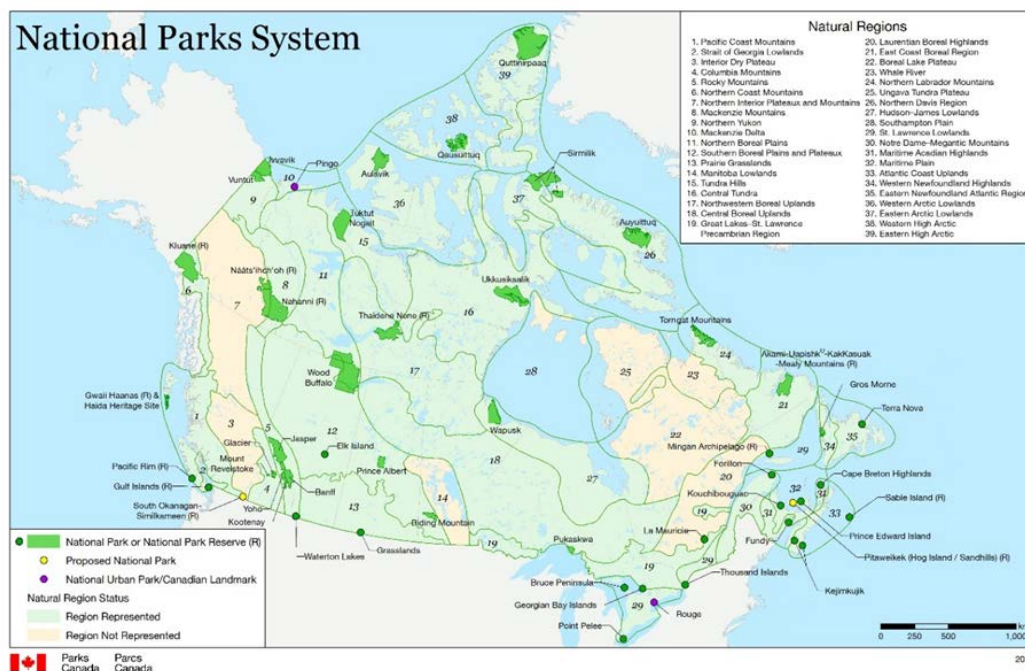
Parties of the CBD agreed to use the Strategic Plan as a guide in establishing their national targets and strategic goals by 2012 (MacKinnon et al. 2015). The overall objective of the 2011-2020 Strategic Plan is to:

...take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication. (UNEP 2010)

### 3.0 CONSERVING BIODIVERSITY IN CANADA

#### 3.1 Canada's Strategy

Canada's conservation efforts began in the late 1800s. Areas dedicated to protecting nature were established with the creation of the nation's first national park, Banff National Park, in 1885. Eight years later (1893), Ontario's Algonquin Forest became the first provincial park, and several additional national parks were established shortly thereafter (Glacier [1886], Yoho [1886], Waterton Lakes [1895], Thousand Islands [1904], Jasper [1907]). The federal government also established Parks Canada in 1911 – the world's first government-based national parks agency (McNamee 2009). As outlined by Maxwell and Finkelstein (2012), these areas were created for a variety of objectives, including protecting outstanding scenic areas, providing regional recreation areas, creating wildlife preserves, or stimulating flagging economies in areas of chronic underemployment. Some parks were also established for political reasons or in response to citizens' dedication. Although the number of parks was growing nationally, the approach of creating a park network with a long-term vision only emerged in 1971 with the first National Park system (Parks Canada 1997). The emphasis of creating a park system was to increase protection and representation for Canada's 39 natural regions (Figure 3.1). In doing so, it forced Canada to improve its policy and regulatory framework around natural resource development.



**Figure 3.1.** Canada's National Parks System [Parks Canada 2020]

### 3.2 Canada's Forest Strategy and Commitment to Biodiversity Conservation

In 1981, following growing concerns regarding timber supply shortages and forest renewal issues, discussions began around developing a new framework to improve sustainable forest management in Canada (CFS 1981). After publication of a discussion paper on sustainability, the Canadian Council of Forest Ministers (CCFM) oversaw the 1981 strategy to renew Canada's national approach to forest management that would address key topics: expanding global markets; challenging economic conditions; and newly developed technology (CCFM 1987). In September 1987, the CCFM adopted Canada's 1987 to 1992 strategy, titled *A National Forest Sector Strategy for Canada*. The strategy made 34 recommendations to deal with trade and investment, the forest and its management, environment, employment, research and development, public awareness, sustainable development, and formation of a federal forestry department devoted solely to forestry and the forest industry (CCFM 1987; Young and Duniker 1998). After adoption of the strategy, the desire for development of a new strategy emerged with the resurgence of three significant concerns: sustainable development; environment; and public attitudes (Bourdages 1992; Young and Duniker 1998). Over the next few years, several reports, consultations, and workshops were undertaken to develop a National Forest Strategy (NFS). In March 1992, the final version of the strategy, *Sustainable Forests: A Canadian Commitment*, was presented at Canada's seventh National Forest Congress in Ottawa (CCFM 1992a). The event hosted over 200 participants and speakers who outlined strategic concerns and implementation challenges facing the sector (Young and Duniker 1998). The event concluded with over 100 congress participants and 29 forest sector groups endorsing the strategy's visions and directions, resulting in the signing of the first Canada Forest Accord (CCFM 1992b; Young and Duniker 1998).

Two and a half years into the NFS, an independent evaluation panel (called the Blue Ribbon Panel) investigated 47 of the strategy's 96 commitments. It determined that reasonable progress was being made in most matters; however, more effort was required in four areas: completing ecological land classifications; protecting areas representative of Canada's forests; establishing multi-value inventories and databases; and developing indicators of sustainable forest management (Blue Ribbon Panel 1994). The panel then conducted a second, final evaluation in July 1997 and concluded that Canada was approaching sustainable forest management, but progress was variable across the country (Young and Duniker 1998). The NFS has since evolved through several more iterations (*Sustainable Forests: A Canadian Commitment, 1998-2003*; *A Sustainable Forest: The Canadian Commitment, 2003-2008*; and *A Vision for Canada's Forests: 2008 and Beyond*), leading to a more concise definition of sustainable forest management, improved stakeholder engagement, and participation from a broader representation of the forest community.

Canada has long been committed to international initiatives to conserve biodiversity, particularly within North America (Table 3.1). These commitments are also supplemented at the provincial level (see Section 4.2.1). In Canada, the constitution bestows exclusive responsibility and authority to the provincial governments to manage their own natural resources. Thus, each has a unique regulatory environment and commitments to biodiversity conservation (NCASI 2014, 2021). In 1992 to 1993, with the CBD coming into force, Canada took the opportunity to reassess and realign its national policies, laws, and regulations with international biodiversity objectives (MSSC 1995). Specifically, the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act was established in 1992 with the objective of "regulating international and interprovincial trade" of certain species of animals and plants. The act applies to species on the CITES (also known as the Washington Convention) control list (which includes more than 35,000 species), a multilateral treaty that ensures that international trade of wild animals and plants does not threaten the survival of species in the wild. In 1994 (and again in 2005), Canada updated its Migratory Birds Convention Act, legislation intended to help conserve and maintain populations of migratory birds and fulfill Canada's obligations under the Migratory Birds Convention of 1916 (Government of Canada 1994). It is worth

noting that the act currently protects over 350 native migratory birds, their eggs, and their nests in Canada (ECCC 2021a). The Canadian Species at Risk Act (SARA) was adopted in December 2002 to “prevent Canadian indigenous species, subspecies and distinct populations of wildlife from becoming extirpated or extinct, to provide for the recovery of endangered or threatened species, to encourage the management of other species to prevent them from becoming at risk” (SARA 2002). As of September 2021, there are 640 species, subspecies, varieties, or Designatable Units listed under Schedule 1<sup>8</sup>, 13 under Schedule 2, 55 under Schedule 3, and 514 with no schedule (Species at Risk Public Registry 2021). In 2008, the Federal Sustainable Development Act was established – a legal framework that “sets out our environmental sustainability priorities, establishes goals and targets, and identifies actions” to implement sustainable development (MECC 2020). Among the thirteen goals developed by this act, the one titled Healthy Wildlife Population outlines targets, key priorities, contribution actions, and short-term milestones for Canada’s nature legacy.

**Table 3.1.** Selection of Relevant International and National Agreements, Commitments, and Legislation Adopted by Canada to Support Biodiversity Conservation

Agreements, Legislation, Commitments, and Treaties	Year
International	
Convention for the Protection of Migratory Birds in the United States and Canada	1916
International Plan Protection Convention	1953
Agreement on the Conservation of Polar Bears	1974
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	1975
North American Plant Protection Organization Cooperative Agreement	1978
Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar)	1983
Agreement between the Government of Canada and the Government of the United States on the Conservation of the Porcupine Caribou Herd	1987
Rio Declaration on Environment and Development	1992-1993
Agenda 21 – a plan adopted at the United Nations Conference on Environment and Development	
Convention on Biological Diversity (CBD)	
The United Nations Framework Convention on Climate Change (UNFCCC)	
Forests Principles	
The Montréal Process	1994
Environment and Climate Change Canada – US Environmental Protection Agency Joint Statement of Cooperation on the Georgia Basin and Puget Sound Ecosystem	2000
Cartagena Protocol on Biosafety (signed, not ratified)	2001
International Treaty on Plant Genetic Resources for Food and Agriculture	2004
North American Bird Conservation Initiative	2005
Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)	2012
(Continued on next page.)	

<sup>8</sup> Schedule 1: the official list of species that are classified as extirpated, endangered, threatened, and of special concern.

Schedule 2: species that had been designated as endangered or threatened and have yet to be reassessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) using revised criteria. Once these species have been re-assessed, they be considered for inclusion in Schedule 1.

Schedule 3: species that had been designated as of special concern and have yet to be reassessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.

**Table 3.1.** Continued

Agreements, Legislation, Commitments, and Treaties	Year
International (continued)	
Management of the North American Breeding Bird Survey Program (ongoing with the US since 1966)	2012
Management of the North American Bird Banding Program (US and Canada have had a shared agreement since 1923)	2012
Letter of Intent related to efforts to promote Conservation of Bats in the United Mexican States, The United States of America, and Canada	2015
Letter of Intent related to the Conservation of Migratory Birds in North America	2016
Memorandum of Understanding Among the Department of Environment and Climate Change Canada, The Office National de la Chasse et de la Faune Sauvage of the French Republic and the United States Fish and Wildlife Service of the United States of America, Related to the Conservation of Shorebirds in the Western Atlantic Flyway	2017
National	
Canada Wildlife Act	1985
Fisheries Act	
National Forest Strategy <ul style="list-style-type: none"> <li>• Sustainable Forests: A Canadian Commitment (1998-2003)</li> <li>• A Sustainable Forest: The Canadian Commitment (2003-2008)</li> <li>• A Vision for Canada's Forests: 2008 and Beyond</li> </ul>	1992
Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act	
Migratory Birds Convention Act	1994
Canadian Biodiversity Strategy	1995
Canada National Parks Act [The Rocky Mountains Park Act-1887, the Dominion Forest Reserves and Parks Act – 1911, the National Parks Act-1930]	2000
Species at Risk Act (SARA)	2002
An Invasive Alien Species Strategy for Canada	2004
Federal Sustainable Development Act	2008
Impact Assessment Act	2019

[Sources: NRCan 2020a; ECCC 2021c]

Note: table excludes all relevant provincial legislation or agreements (see NCASI 2014, 2021)

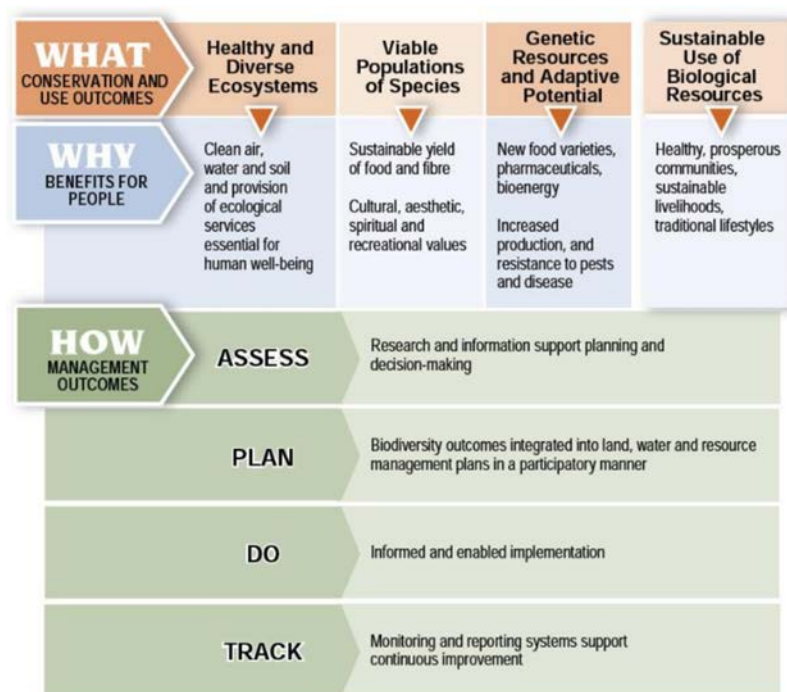
### 3.3 Canada and the Convention on Biological Diversity

Canada was the first industrialized country to ratify the CBD in 1992, under the belief that it would become a significant global and national instrument for promoting and guiding biodiversity conservation efforts (MSSC 1995). Canada's obligations under the convention involve all government levels and rely on the cooperation of all Canadians, including intergovernmental organizations, municipalities, Indigenous communities, industry, and non-government organizations (ECCC 2016). Environment and Climate Change Canada (ECCC), a federal government department, coordinates national efforts and has the responsibility of representing the Canadian delegation at CBD meetings (ECCC 2020).

An essential obligation for parties that ratified the CBD was to prepare a national strategy to conserve biological diversity. Canada did so in 1995 with development of the Canadian Biodiversity Strategy (MSSC 1995). The strategy focused on identifying priority directions and providing Canada's vision, guiding principles, and goals to meet its obligations under the CBD. Specifically, the strategy's five goals were to: (1) conserve biodiversity and use biological resources in a sustainable manner; (2) improve understanding of ecosystems and increase resource management capability; (3) promote an

understanding of the need to conserve biodiversity and use biological resources in a sustainable manner; (4) maintain or develop incentives and legislation that support the conservation of biodiversity and the sustainable use of biological resources; and (5) work with other countries to conserve biodiversity, use biological resources in a sustainable manner, and share equitably the benefits that arise from the use of genetic resources (MSSC 1995).

In 2006, federal, provincial, and territorial ministers released the Biodiversity Outcomes Framework, an action-oriented approach to evaluating and reporting on implementation of the Canadian Biodiversity Strategy (ECCC 2016). This outcomes-based approach was developed to engage all Canadians in biodiversity conservation efforts (Figure 3.2).



**Figure 3.2.** Biodiversity Outcomes Framework [ECCC 2016]

In 2015, and in accordance with Aichi Biodiversity Target 17, Canada released its National Biodiversity Strategy and Action Plan (NBSAP), known as the 2020 Biodiversity Goals and Targets for Canada<sup>9</sup> (ECCC 2016). Canada's NBSAP consists of a specific suite of goals and targets developed in response to the CBD's 2011-2020 Strategic Plan for Biodiversity. The 2020 Biodiversity Goals and Targets identifies the measures (four goals and nineteen targets) Canada has committed to under the CBD, ultimately reflecting Canadian context and priorities regarding biodiversity conservation (Table 3.2).

<sup>9</sup> Canada's 2020 Biodiversity Goals and Targets were submitted three years late and have received considerable criticism because they are inconsistent with the original Aichi Targets set by the IUCN (see Section 8).



**Table 3.2.** Canada's Biodiversity Strategic Goals and Targets, Commitments' Descriptions, and Related Strategic Goals/Aichi Targets

Strategic Goals and Targets	Description	Related Strategic Goals/Aichi Targets
Goal A	By 2020, Canada's lands and waters are planned and managed using an ecosystem approach to support biodiversity conservation outcomes at local, regional and national scales.	18
Target 1	By 2020, at least 17 percent of terrestrial areas and inland water, and 10 percent of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures.	11
Target 2	By 2020, species that are secure remain secure, and populations of species at risk listed under federal law exhibit trends that are consistent with recovery strategies and management plans.	12
Target 3	By 2020, Canada's wetlands are conserved or enhanced to sustain their ecosystem services through retention, restoration and management activities.	4,5,14,15
Target 4	By 2020, biodiversity considerations are integrated into municipal planning and activities of major municipalities across Canada.	2
Target 5	By 2020, the ability of Canadian ecological systems to adapt to climate change is better understood, and priority adaptation measures are underway.	19
Goal B	By 2020, direct and indirect pressures as well as cumulative effects on biodiversity are reduced, and production and consumption of Canada's biological resources are more sustainable.	
Target 6	By 2020, continued progress is made on the sustainable management of Canada's forests.	4,5,7
Target 7	By 2020, agricultural working landscapes provide a stable or improved level of biodiversity and habitat capacity.	5,7
Target 8	By 2020, all aquaculture in Canada is managed under a science-based regime that promotes the sustainable use of aquatic resources (including marine, freshwater and land based) in ways that conserve biodiversity.	4,7
Target 9	By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches.	8
Target 10	By 2020, pollution levels in Canadian waters, including pollution from excess nutrients, are reduced or maintained at levels that support healthy aquatic ecosystems.	8
Target 11	By 2020, pathways of invasive alien species introductions are identified, and risk-based intervention or management plans are in place for priority pathways and species.	9
Target 12	By 2020, customary use by Aboriginal peoples of biological resources is maintained, compatible with their conservation and sustainable use.	18
Target 13	By 2020, innovative mechanisms for fostering the conservation and sustainable use of biodiversity are developed and applied.	3,4
(Continued on next page.)		

Table 3.2. Continued

Strategic Goals and Targets	Description	Related Strategic Goals/Aichi Targets
Goal C	By 2020, Canadians have adequate and relevant information about biodiversity and ecosystem services to support conservation planning and decision-making.	
Target 14	By 2020, the science base for biodiversity is enhanced and knowledge of biodiversity is better integrated and more accessible.	19
Target 15	By 2020, Aboriginal traditional knowledge is respected, promoted and, where made available by Aboriginal peoples, regularly, meaningfully and effectively informing biodiversity conservation and management decision-making.	18
Target 16	By 2020, Canada has a comprehensive inventory of protected spaces that includes private conservation areas.	11,19
Target 17	By 2020, measures of natural capital related to biodiversity and ecosystem services are developed on a national scale, and progress is made in integrating them into Canada's national statistical system.	1
Goal D	By 2020, Canadians are informed about the value of nature and more actively engaged in its stewardship.	
Target 18	By 2020, biodiversity is integrated into the elementary and secondary school curricula.	1
Target 19	By 2020, more Canadians get out into nature and participate in biodiversity conservation activities.	1,4

[Source: CBD 2020b]

### 3.3.1 *Canada's Target 1*

The total proportion of lands and water that are conserved as part of Canada's commitment to the CBD are addressed in Canada's Target 1, which states:

By 2020, at least 17 percent of terrestrial areas and inland water, and 10 percent of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures.

The target is intended to increase the amount and effectiveness of biodiversity conservation areas (MacKinnon et al. 2015). Its achievement also has implications for the success of other targets for Canada (e.g., Targets 6 and 8) (Lemieux et al. 2019). Canada's Target 1 relies on PAs and on a new conservation measure: OECMs, a designation that was first introduced to CBD parties at the tenth COP (COP-10) in October 2010 as part of Aichi Target 11 (Table 2.2). Sections 3.3.2 and 3.3.3 describe each of these two designations, followed by Section 3.3.4 on how they differ.

### 3.3.2 *Protected Areas*

Creation of PAs has been the preferred global approach to safeguarding biodiversity for centuries, and is still considered by many to be the key strategy in achieving this goal (Chape et al. 2005; Corson et al. 2014; CCEA 2018; Wulder et al. 2018). While the concept and objectives of PAs have been refined over time, in Canada the IUCN definition is used:

...a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values. (Dudley 2008)

According to this definition, the primary objective of a PA is the conservation of biodiversity. However, PAs also achieve a variety of other management objectives. For example, PAs can contribute to a local community's livelihood and be a source of economic gain through tourism revenues. In addition, when designated appropriately, PAs can provide representative samples of ecological areas, maintain wild fish stocks, help mitigate climate change through carbon storage, and provide food and water security (e.g., Watson et al. 2014). The IUCN recognizes six PA categories and provides a common language for their definition within and between countries, which also helps classify PAs under different legislation, management regimes, and governance types (Table 3.3). Even given the IUCN definition, there can remain inconsistencies when PAs are formally applied. For example, privately protected areas (PPA) are recognized in some countries and not in others (Bingham et al. 2017). There also can be significant variability in the prominent category being reported by a given country. For example, in Canada Category II (National Park) PAs are most prominent (59%), while in Germany the majority of PAs are classified as Category V (Landscape Protection Areas) covering 26% of the country (10 million ha by the end of 2017) (BfN 2021).

While there is significant alignment within the scientific community regarding the importance of PAs, there is still debate on their effectiveness in achieving biodiversity conservation outcomes (Craigie et al. 2010; Butchart et al. 2012; Tittensor et al. 2014; Geldmann et al. 2015). Studies have shown that PAs reduce rates of habitat loss in both terrestrial and marine areas (Joppa and Pfaff 2010; Geldmann et al. 2013; Micheli and Niccolini 2013; Edgar et al. 2014). However, in some countries PA funding and fragmentation between PAs have been shown to reduce their effectiveness at mitigating threats to many species of concern (Butchart et al. 2012; Watson et al. 2014; Coad et al. 2019). An evaluation by Coad et al. (2019) found that less than one-fourth of 2167 global PAs assessed reported adequate resources in both staffing and budget. These shortcomings often result in inefficient management of PAs, which reduces conservation effectiveness (e.g., Leverington et al. 2010). In addition, Saura et al. (2018) showed that among the 14.7% global PA coverage, only 9.3% (63% of total) is covered by protected connected lands considering a reference dispersal distance of 10 km of the species studied.

**Table 3.3.** IUCN Protected Area Categories and Definitions of Management Objectives

Protected Area Category	Definition of Management Objective
Category Ia (Strict Nature Reserve)	Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values.
Category Ib (Wilderness Area)	Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition.
Category II (National Park)	Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities.
Category III (Natural Monument/Feature)	Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove.
Category IV (Habitat/Species Management Area)	Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category.
Category V (Protected Landscape/Seascape)	Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value; and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.
Category VI (Protected Area with Sustainable Use of Natural Resources)	Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims.

[Source: Dudley 2008]

### 3.3.3 *Other Effective Area-Based Conservation Measures*

In 2010, OECMs were introduced into the language of Aichi Target 11 by recognizing areas that contribute to effective in situ conservation of biodiversity but are outside the legally designated PA network (Laffoley et al. 2017; Aten and Fuller 2019). The realization that the PA network alone was insufficient to meet biodiversity conservation needs, along with the fact that it presented many challenges regarding human rights, governance, equity, and livelihoods, led scientists to think about making fundamental changes in the way conservation is planned (Dudley et al. 2018). Therefore, the strategy outlined by Wilson (2016), claiming that we need to “...conserve at least half of the Earth...” through protected lands, was highly criticized. For instance, Büscher et al. (2017) argued that increasing PAs would have widespread negative consequences for human populations, and the half-earth approach does not address resource extraction and consumption, which are some of the main drivers of biodiversity loss. Further, Büscher et al. (2017) proposed a political reform that would address global capitalism, inequality, and resource consumption with strategies such as “...promot[ing] concerted and widespread programmes of regulation and redistribution to equalize use and control of our remaining natural resources...”, and “...ensuring that all human beings can live prosperous lives within local and global ecological boundaries.” Because these drastic proposals were deemed unlikely to occur within a timeframe that could address current global biodiversity objectives, parties agreed that recognizing the contribution of OECMs to conservation efforts represented a novel solution to implementing rapid and effective conservation measures. It was also considered an effective and rapid approach that would contribute to achieving biodiversity conservation without causing a humanitarian crisis and transgressing human rights in creating a PA network that is not practically viable. Including OECMs within Aichi Target 11 (and in Canada’s Target 1) promised to support the existing PA network while also increasing landscape connectivity and, in turn, improving the ability to curb biodiversity loss (MacKinnon et al. 2015; Dudley et al. 2018; Pathway to Canada Target 1 2018).

When OECMs were first introduced, little guidance existed to define, identify, recognize, and report this new designation (Jonas et al. 2014; Leadley et al. 2014). In 2015, an IUCN World Commission on Protected Areas (WCPA) established a dedicated task force to develop practitioners’ guidance to interpret what areas can qualify as an OECM (Shore and Potter 2018). The task force held three technical workshops between 2016 and 2017 and provided its draft guidelines in January 2018 (IUCN-WCPA 2019). In July 2018, the CBD’s Subsidiary Body on Scientific, Technical and Technological Advice agreed on the definition of an OECM:

...a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socioeconomic, and other locally relevant values. (CBD 2018, Decision 14/8)

Parties to the CBD adopted this definition at COP 14 in November 2018 (Aten and Fuller 2019), and a year later the IUCN published its finalized OECM guidelines document (IUCN-WCPA 2019).

Recognizing the contribution of OECMs was identified as an opportunity to address a number of shortcomings in the PA system, most notably a reduction in landscape fragmentation, a characteristic that has often been identified as a weakness in conservation plans (Watson et al. 2014; Dudley et al. 2018). Increasing connectivity establishes larger and more representative ecological systems that have been shown to enhance ecological functions and evolutionary processes (Leverington et al. 2010; Saura et al. 2018). A well-connected conservation system can facilitate gene flow, migration, and species range shifts, all of which are essential functions for sustaining viable populations of wide-ranging species and promoting ecosystem resilience (Sgrò, Lowe, and Hoffmann 2011; Saura et al. 2018). Further, increased connectivity can also help species respond to environmental changes

(natural or anthropogenic), increase proportions of critical habitat for species at risk, and improve their likelihood of recovery (e.g., Hansen and DeFries 2007; Yemshanov et al. 2020). Given the potential of OECMs to improve biodiversity conservation efforts, assigning and maintaining these designations is expected to contribute to safeguarding ecosystem services (e.g., food and water security, climate change mitigation and adaptation, disaster risk reduction) (IPBES 2019). In addition, OECMs can be implemented in significantly less time than PAs, which can take years, if not decades, to establish. Thus, OECMs represent an opportunity to more rapidly address biodiversity losses (Ferguson et al. 2012).

Positive social benefits are also expected to arise from increased OECM implementation, as they offer an opportunity for increased recognition and governance across various stakeholders (e.g., private individuals, organisations or companies, Indigenous Peoples, local communities) (Borrini-Feyerabend and Hill 2015; Jonas et al. 2017). Supporting Indigenous Peoples allows integration of traditional knowledge into conservation efforts (Zurba et al. 2019). Through the years, several PAs have been founded through a model of preservation of people-free “wilderness” that dispossessed Indigenous Peoples from their territories (CCEA 2018; Zurba et al. 2019). In 2005, the Durban Accord was adopted by the IUCN at the 5<sup>th</sup> IUCN World Parks Congress in Durban, South Africa, in response to recommendations on Indigenous rights, poverty and governance provided a year before at the World Summit on Sustainable Development (Roe 2008). The Durban Accord included targets to ensure that future PAs be managed and established in a manner that integrates and respects the rights of Indigenous and local communities (Jonas et al. 2017; Zurba et al. 2019). Today, ICCAs are considered essential for conservation of biodiversity because they have been shown to be “...as or more effective than strictly protected areas at preventing deforestation, maintaining forest health and ecosystem connectivity, and conserving biodiversity and natural resources” (Jonas et al. 2017). The inclusion of Indigenous Peoples in conservation efforts through the creation of Indigenous Protected and Conserved Areas (IPCAs) is considered to be one of the solutions for countries with a colonial history (such as Canada) to reconcile (Zurba et al. 2019). In 2018, the Indigenous Circle of Experts (ICE) acknowledged the connection between the status of Indigenous Peoples’ cultures and nature in a report titled *We Rise Together* (ICE 2018).

### **3.3.4 *How do PAs and OECMs Differ?***

At the international scale, PAs and OECMs are the only types of designations recognized by the CBD to deliver conservation outcomes to achieve Aichi Target 11 (CBD 2020a). They share commonalities regarding governance, management, and intent in conserving biodiversity (Table 3.4). Further, both can be identified as IPCAs when established and managed exclusively or in collaboration with Indigenous Peoples and communities (CCEA 2018). The fundamental distinction between PAs and OECMs lies in their primary objectives (Laffoley et al. 2017). PAs must have conservation as the primary objective of management, while OECMs must deliver conservation outcomes regardless of their primary management objective (Jonas et al. 2018; Shore and Potter 2018; IUCN-WCPA 2019). Note that if the primary objective of an OECM is conserving biodiversity, by definition it matches that of a PA; as a result, the governing authority may request that the OECM be officially recognized as a PA (IUCN-WCPA 2019).

**Table 3.4.** Commonalities and Differences between Protected Areas and Other Effective Area-Based Conservation Measures

	PA	OECM
Commonalities	Clearly defined boundaries	
	Protects biodiversity year-round and is long term	
	Difficult to reverse	
	Recognized by governing authorities	
	Managed for in situ conservation of biodiversity	
	Effective means to control all activities likely to negatively impact biodiversity	
Differences	Primary objective is biodiversity conservation	Effective at delivering in situ conservation of biodiversity regardless of primary management objective

[Source: adapted from MNRF 2018]

OECMs can be classified into one of three types of conservation approaches: primary, secondary, and ancillary, which are designated according to the strategy used for in situ biodiversity conservation within the given area (Table 3.5). OECMs with primary conservation approaches are areas that meet all elements of the IUCN definition of a PA (see Section 3.3.2) but are not recognized by the relevant national government or local governance authority. A local governing authority may choose not to identify an area as a PA because it cannot secure the area or may simply prefer not to formally recognize it as such. An OECM with biodiversity conservation as a secondary approach refers to an area that already has some form of policies and/or management in place that results in effective protection of biodiversity (see examples in Table 3.5). Finally, OECMs with ancillary approaches refer to areas that deliver in situ conservation as a by-product of management activities, even though biodiversity conservation is not a management objective (Table 3.5). The list of areas that are unlikely to meet the IUCN criteria as an OECM under the ancillary approach includes forests that are managed for commercial timber supply, which should be considered towards contributing to Aichi Target 7 (Target 6 in Canada). However, this does not negate opportunities to consider areas within forest management zones that are managed for non-timber values (see Section 7).

**Table 3.5.** Other Effective Area-Based Conservation Measures Conservation Approaches, their Definitions, and Examples that Deliver Effective Conservation

Conservation Approach	Definition	Examples
Primary Conservation	Refers to areas that may meet all elements of the IUCN definition of a protected area, but which are not officially designated as such because the governing authority does not want the area to be recognised or reported as a protected area. For example, in some instances Indigenous Peoples and local communities may not want areas of high biodiversity value that they govern to be designated as protected areas or recorded in government protected area databases. Assuming an area meets the OECM criteria, the governing authority has the right to withhold or give its consent to the area being recognized.	<ul style="list-style-type: none"> <li>Some territories or areas (marine, freshwater or terrestrial) governed by Indigenous Peoples, local communities, or private entities that have a primary and explicit conservation objective and deliver the in situ conservation of biodiversity, but where the governing body wishes the territories or areas to be recognised and reported as OECMs, rather than as protected areas.</li> <li>Privately conserved areas, which are managed with a specific conservation objective but which are not recognized as protected areas under national legislation (Mitchell et al. 2018), e.g., ecosystem restoration areas in Indonesia (Utomo and Walsh 2018).</li> <li>Areas that include Key Biodiversity Areas, managed in ways that deliver long-term in situ conservation of biodiversity through, for example, regulation or other effective approaches.</li> <li>Some permanently set-aside areas of a managed forest, such as old-growth, primary, or other high biodiversity value forests, which are protected from both forestry and non-forestry threats.</li> <li>Some natural areas managed by universities for biological research.</li> </ul>
Secondary Conservation	An actively managed area where biodiversity outcomes are a secondary management objective. For example, enduring watershed protection policies and management may result in effective protection of biodiversity in watersheds, even though the areas may be managed primarily for objectives other than conservation. Sites managed to provide ecological connectivity between protected areas or other areas of high biodiversity, thereby contributing to their viability, may also qualify as OECMs.	<ul style="list-style-type: none"> <li>Territories and areas managed by Indigenous Peoples and/or local communities (ICCAs, or sections of these areas) to maintain natural or near-natural ecosystems, with low levels of use of natural resources practised on a sustainable basis and in a way that does not degrade the area's biodiversity. This includes coastal and marine areas where local community-based harvesting and management practices result in de facto conservation of fish populations, habitats, and other associated marine biodiversity such as some locally managed marine areas (Jupiter et al. 2014).</li> <li>Traditional management systems that maintain high levels of associated biodiversity. These could include certain agricultural or forest management systems that maintain native species and their habitat (e.g., Eghenter 2018; Mwamidi et al. 2018).</li> </ul>

(Continued on next page.)



Table 3.5. Continued

Conservation Approach	Definition	Examples
Secondary Conservation (Continued)		<ul style="list-style-type: none"> <li>• Urban or municipal parks managed primarily for public recreation but which are large enough and sufficiently natural to also effectively achieve in situ conservation of biodiversity (e.g., wild grassland, wetlands) and which are managed to maintain these biodiversity values (e.g., Gray et al. 2018).</li> <li>• Military lands and waters, or portions of military lands and waters that are primarily managed for the purpose of defence, but with specific secondary objectives focused on the conservation of biodiversity. Canadian Forces Base Shilo, located in the mixed-grass prairie ecosystem of south-central Manitoba, was proposed by Canada as an OECM in 2019.</li> <li>• Watersheds or other areas managed primarily for water resource management that also result in the in situ conservation of biodiversity. This can include, for example, water meadows, riverine forest, coastal forests, wetlands, streams, upland catchments, or other areas managed for long-term soil and slope stabilization, flood mitigation, or other ecosystem services (e.g., Matallana-Tobón et al. 2018).</li> <li>• Permanent or long-term fisheries closure areas designed to protect complete ecosystems for stock recruitment, to protect specialized ecosystems in their entirety, or to protect species at risk through in situ conservation of biodiversity as a whole, and which are demonstrated to be effective against both fishery and non-fishery threats.</li> <li>• Hunting reserves that maintain natural habitats and other flora and fauna as well as viable populations of hunted and non-hunted native species.</li> <li>• Areas successfully restored from degraded or threatened ecosystems, to provide important ecosystem services but which also contribute to effective biodiversity conservation, e.g. freshwater and coastal wetlands restored for flood protection.</li> <li>• Areas that contribute to conservation because of their role in connecting protected areas and other areas of particular importance for the conservation of biodiversity, thereby contributing to the long-term viability of larger ecosystems (Waithaka and Njoroge 2018).</li> </ul>
		(Continued on next page.)

Table 3.5. Continued

Conservation Approach	Definition	Examples
Ancillary Conservation	Refers to areas that deliver in situ conservation as a byproduct of management activities, even though biodiversity conservation is not a management objective.	<ul style="list-style-type: none"> <li>• Sacred natural sites with high biodiversity values that are conserved in the long-term for their associations with one or more faith groups (e.g., Matallana-Tobón et al. 2018).</li> <li>• Coastal and marine areas protected for reasons other than conservation, but that nonetheless achieve the in situ conservation of biodiversity, e.g., historic wrecks, war graves, etc.</li> <li>• Military lands and waters, or portions of military lands and waters that are managed for the purpose of defence, do not have a secondary objective of biodiversity conservation, but achieve the effective conservation of biodiversity in the long term.</li> <li>• Examples of areas unlikely to meet the criteria             <ul style="list-style-type: none"> <li>○ Small, semi-natural areas within an intensively-managed landscape with limited biodiversity conservation value, such as municipal parks, formal/domestic gardens, arboreta, field margins, roadside verges, hedgerows, narrow shoreline or watercourse setbacks, firebreaks, recreational beaches, marinas, and golf courses.</li> <li>○ Forests that are managed commercially for timber supply and are intended for logging, even though they may have some conservation values and support some species of interest. Such areas should be considered as contributing to Aichi Target 7.</li> <li>○ Fishery closures, and other spatial fisheries management tools, including, but not limited to, fishing quotas or catch limits, temporary set-asides, or gear restriction areas with a single species, species group, or habitat focus, that may be subject to periodic exploitation and/or be defined for stock management purposes, and that do not deliver in situ conservation of the associated ecosystems, habitats, and species with which target species are associated. Such areas should be considered as contributing to Aichi Target 6.</li> </ul> </li> </ul>
	(Continued on next page.)	

Table 3.5. Continued

Conservation Approach	Definition	Examples
Ancillary Conservation (Continued)		<ul style="list-style-type: none"> <li>○ Agricultural lands that are managed in a manner that limits the in situ conservation of biodiversity. This may include, for example, pastures that are grazed too intensively to support native grassland ecosystems or species, or grasslands replanted with monocultures or non-native species for the purpose of livestock production.</li> <li>○ Temporary agricultural set-asides, summer fallow and grant-maintained changes to agricultural practice that may benefit biodiversity.</li> <li>• Conservation measures that apply to a single species or group of species over a wide geographical range, such as hunting regulations or whale-watching rules; these are better considered as being part of wider species conservation measures (Targets 5, 6, 7, and/or 12).</li> </ul>

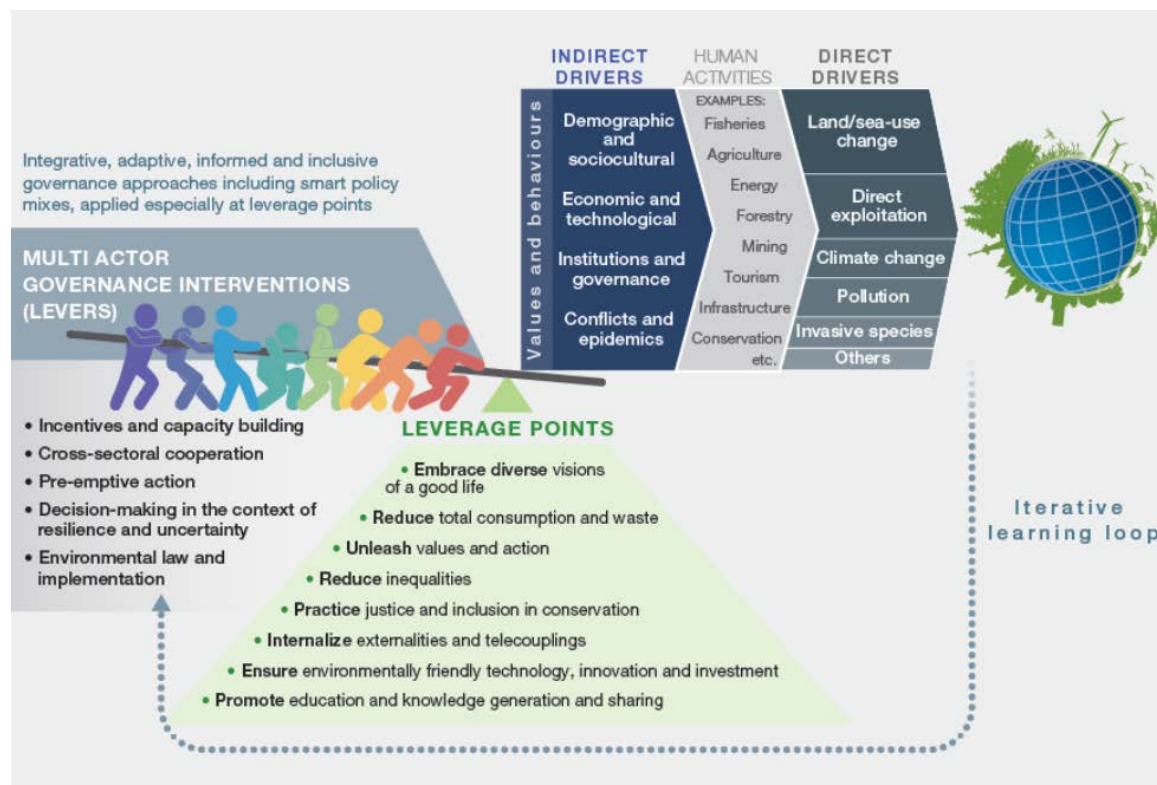
[Source: adapted from IUCN-WCPA 2019]

## 4.0 OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES GOVERNANCE AND POLICY

### 4.1 International

When parties to the CBD agreed to introduce OECMs into the 2011-2020 Strategic Plan for Biodiversity to achieve improved biodiversity outcomes, they consented to adding new conservation strategies to their national action plans (Shore and Potter 2018). These actions could be accomplished through implementation of national laws, plans and agreements, best-practice standards, or financial support from national ministries, and possibly through international agencies (Borrini-Feyerabend and Hill 2015). The CBD provides a framework to guide nations and stakeholders in implementing conservation efforts but does not place precise legal obligations upon parties to achieve them (CBD 2007). Thus, each nation is solely responsible for the governance and management of biodiversity within its borders (Borrini-Feyerabend and Hill 2015).

Governance is a crucial aspect for the implementation and effectiveness of OECMs, as the actors responsible for making the decisions on conservation objectives and how to achieve them ultimately influence the success of conservation efforts (Barrett et al. 2006; Dudley 2008). According to Dudley (2008), an effective governance system “should reflect internationally agreed principles for good governance” such as the governance principles and values agreed to within the CBD. Further, the IPBES (2019) provides a set of principles associated with a sound governance system that considers multi-actor governance interventions (identified as levers) and should be “...integrative, adaptive, informed and inclusive...” (Figure 4.1).



**Figure 4.1.** Collaborative Implementation of Priority Governance Interventions (Levers) Targeting Key Points of Intervention [IPBES 2019]

Collaborative implementation of priority governance interventions (levers) targeting key points of intervention (leverage points) could enable transformative change from current trends towards more sustainable ones. Most levers can be applied at multiple leverage points by a range of actors, such as intergovernmental organizations, governments, non-governmental organizations, citizen and community groups, Indigenous Peoples and local communities, donor agencies, science and educational organizations, and the private sector, depending on the context. Implementing existing and new instruments through place-based governance interventions that are integrative, informed, inclusive, and adaptive, using strategic policy mixes and learning from feedback, could enable global transformation.

Another important consideration in the context of OECM governance is identifying key actors and stakeholders. Borrini-Feyerabend and Hill (2015) defined the crucial actors as:

...those endowed with a national mandate (for example, an agency in charge on the basis of a ministerial decree), possessing legal rights (for example, property, lease, concessions) or possessing customary rights (for example, traditional use, age-old association, continuous residence) with respect to land, water, and natural resources.

Key actors will ultimately hold power and responsibility for establishing and governing OECMs within a given jurisdiction (Borrini-Feyerabend and Hill 2015). The IUCN recognizes four types of OECMs governance:

1. Governance by governments (at various levels)
2. Governance by private individuals, organisations, or companies
3. Governance by Indigenous Peoples and/or local communities
4. Shared governance (i.e., governance by various rights holders and stakeholders together)

The CBD is the first international legal instrument to recognize the importance of Indigenous Peoples and local communities for conservation of biodiversity (see Section 3.3.3; CBD 2007). Therefore, their inclusion in the governance system is expected to result in positive outcomes because diversity has been shown to maximize the ecological, social, and cultural benefits when OECMs are implemented. This is particularly important for OECMs because these designations are not recognized as formal PAs, and thus can experience lower levels of legal protection and support from governmental programs (Borrini-Feyerabend and Hill 2015).

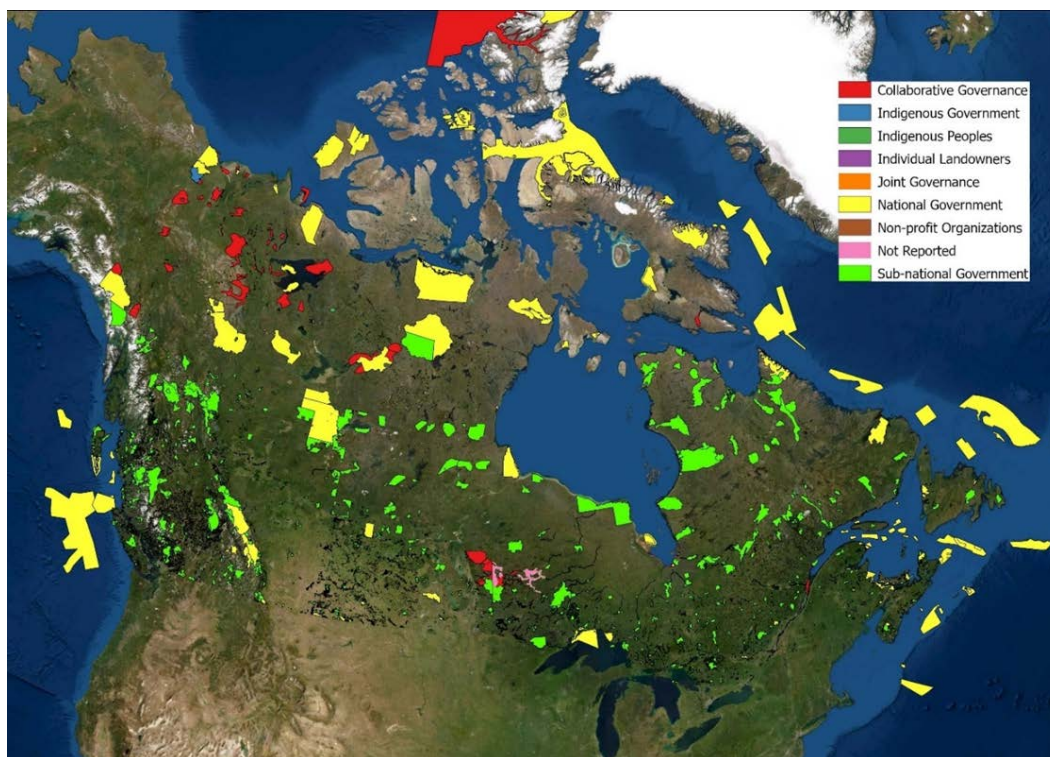
Other conserved areas that are not considered formal PAs (e.g., some ICCAs) face more significant threats and are more vulnerable to appropriation for alternative uses (e.g., extractive industries, industrial agriculture, major infrastructure, armed conflicts, establishment of illegal crops) (Jonas et al. 2017). Governance and management are considered critical components in avoiding these threats over the long term and thus are included as part of the criteria and definition of OECMs (IUCN-WCPA 2019).

## 4.2 Canada

Federal, provincial, and territorial governments in Canada share the responsibility for conserving biodiversity under the Canadian constitution's legal authority and administrative arrangements (MSSC 1995). Provinces and territories manage natural resources within their borders by setting policies, legislation, and other regulations, except for those on federal lands such as First Nations lands and national parks (NCASI 2014, 2021).

OECMs can be governed in Canada under the same governance types identified by the IUCN (Section 4.1). Multiple agencies can designate OECMs in Canada; however, federal, provincial, and territorial jurisdictions have the ultimate decision for their final recognition (Figure 4.2; see Appendix D for provincial maps). Creation of IPCAs contributes to greater equity in the governance

system and improved application of Traditional Knowledge in conservation efforts. Indigenous Peoples have a significant role to play in the future of conservation in Canada, where their inherent rights “...to harvest, collect, practise cultural activities and ceremonies...” on lands, including those within PAs and OECMs, are recognized in the Constitution Act (1982) and in historic and modern treaties (CCEA 2018; Zurba et al. 2019).



**Figure 4.2.** Canada’s Protected and Conserved Areas by Governance Type [developed using data from Canadian Protected and Conserved Areas Database (ECCC 2021b)]

#### 4.2.1 *Provinces and Territories*

Strategies to conserve biodiversity in Canada, like those for managing natural resources, are not consistent across jurisdictions. Individual provinces and territories develop, impose, and enforce laws, policies, and regulations for resource management and generally work independently (MSSC 1995; Wulder et al. 2018). Although there is no standardized system regulating biodiversity conservation, many common principles apply, as Pawlowska-Mainville and Chapman (2019) outline:

- Conservation through parks and PAs
- Provincial and territorial hunting and trapping programs
- Banning the sale of wildlife species
- Balancing biodiversity and ecosystem conservation with economic interests (e.g., tourism, industrial projects)

While Canada has agreed to, adopted, and developed several international and national strategies for conserving biodiversity (Table 3.1), several provinces and territories have developed their own biodiversity strategies and action plans (Table 4.1). By doing so, provinces can improve planning and monitoring, facilitating reporting to national initiatives.

**Table 4.1.** Sub-National (Provincial and Territorial) Biodiversity Strategies, Action Plans, and Area-Based Conservation Targets

Province/ Territory	Examples of Biodiversity and Conservation Strategies (Year Published)	Area-Based Conservation		
		Targets	Adoption Date	Target Date
Yukon	Science Strategy (2016) Wild Spaces and Protected Places: A Protected Areas Strategy (1998)		NA	
Northwest Territories	Northwest Territories Biodiversity Action Plan (2004, 2006) Northwest Territories Protected Areas Strategy (1999)		NA	
Nunavut	Wildlife Management Program, Parks and Special Places Program		NA	
British Columbia	Protecting Vulnerable Species: A Five-year Plan for Species at Risk in British Columbia (2014) Invasive Species Strategy for BC (2012) Conservation Framework (2009) Identified Wildlife Management Strategy (2004) Special Elements of Biodiversity in British Columbia (2007) Key elements of biodiversity in British Columbia: Some examples from the terrestrial and freshwater aquatic realms (2007)	12% of terrestrial area	1993	2000
Alberta	Biodiversity Management Frameworks and Regional Plans (2014) Strategy for the Management of Species at Risk 2009-2014 Prairie Conservation Action Plan, 2011-2015 Invasive Alien Species Management Framework, 2010 Alberta Plan for Parks 2009-2019 Alberta Land Use Framework (2008), MULTISAR—voluntary stewardship program focusing on multiple species at risk		NA	
Saskatchewan	Saskatchewan Prairie Conservation Action Plan Framework 2014-2018 Caring for Natural Environments: A Biodiversity Action Plan for Saskatchewan's Future (2004 to 2009)	12% in each of 11 ecoregions	1997	2000
Manitoba	Tomorrow Now: Manitoba's Green Plan (2012) Manitoba Climate and Green Plan (2017)	12% of natural regions	1993	No Date

(Continued on next page. See notes at end of table.)

Table 4.1. Continued

Province/ Territory	Examples of Biodiversity and Conservation Strategies (Year Published)	Area-Based Conservation		
		50% of Far North terrestrial areas and inland waters <sup>a</sup>	2010	No Date
Ontario	Ontario's Biodiversity Strategy 2011: Renewing our Commitment to Protecting What Sustain Us (2011) Biodiversity: It's In Our Nature, Ontario Government Plan to Conserve Biodiversity 2012-2020 (2012) Invasive Species Strategic Plan (2012)	12% of terrestrial area	2011	2015
Québec	Orientations gouvernementales en matière de diversité biologique (2013) The Plan Nord – 2015-2020 Action Plan Toward 2035 Living in the North – Northern Action Plan 2020-2023 (2020)	10% of marine area	2015	2020
		20% of Plan Nord Area <sup>b</sup>	2015	2020
		50% of Plan Nord Area <sup>b</sup>	2015	2035
New Brunswick	New Brunswick Biodiversity Strategy (2009) A Strategy for Crown Lands Forest Management (2014)	NA		
Nova Scotia	The Path We Share: A Natural Resources Strategy for Nova Scotia 2011-2020 Our Parks and Protected Areas – A Plan for Nova Scotia (2013) Coastal Management Framework (2008)	12% of terrestrial area	2007	2015
		Additional 1% beyond terrestrial area (i.e., 13%)	2015	No Date
Prince Edward Island	Stewardship and Sustainability, A Renewed Conservation Strategy for Prince Edward Island (1994) Wildlife Policy for Prince Edward Island (1995) Significant Environmental Areas Plan (1991)	7%	1993	No Date
Newfoundland and Labrador	Caribou Strategy, Policy Regarding the Conservation of Species at Risk		NA	

[Sources: adapted from Robertson et al. 2017; Biodivcanada 2021]

<sup>a</sup> MNDMNRF 2012<sup>b</sup> QC 2013, 2017, 2020

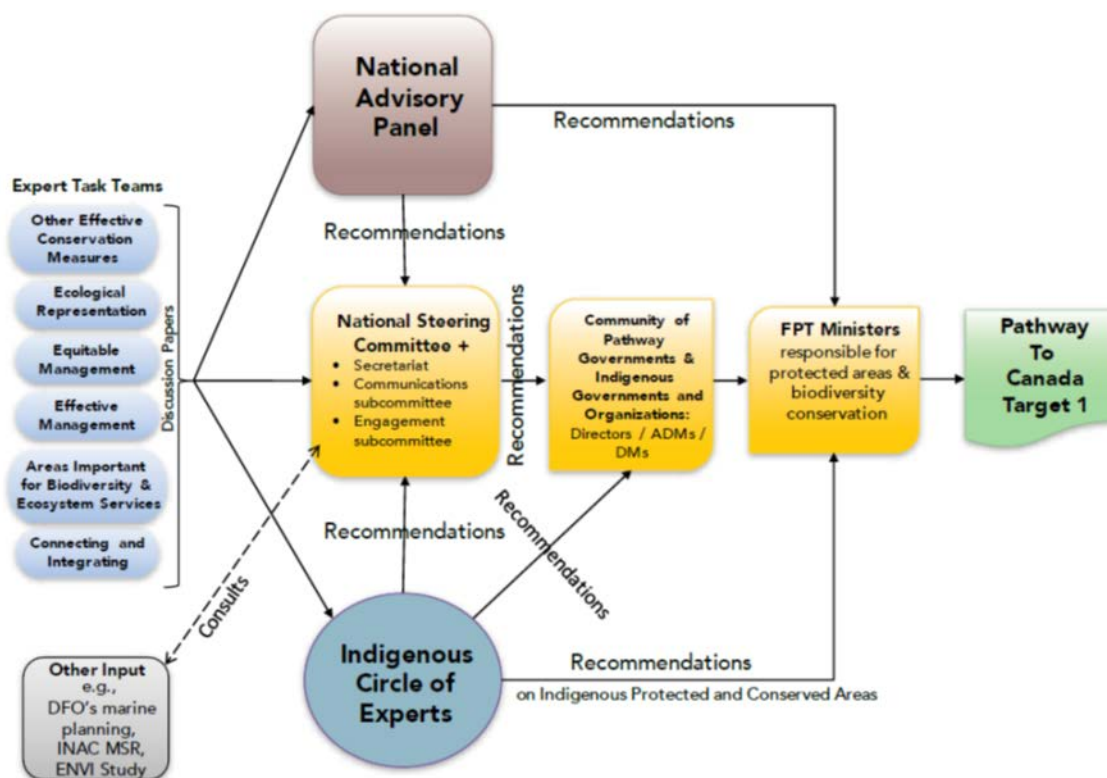


#### 4.2.2 Pathway to Canada Target 1

In 2016, federal, provincial, territorial, and local governments, in partnership with First Nations, Métis, and Inuit, launched the Pathway to Canada Target 1 initiative<sup>10</sup>, a strategy based on a collective vision supporting progress towards achieving Canada Target 1 (Pathway to Canada Target 1 2018). The initiative was established to guide Canada in meeting its international commitments to the CBD. The initiative identified four priorities areas:

1. Expand systems of federal, provincial, and territorial protected and conserved areas
2. Promote greater recognition and support for existing Indigenous rights, responsibilities, and priorities in conservation
3. Maximize conservation outcomes
4. Build support and participation for conservation with a broader community

Unlike the overall Canadian Biodiversity Strategy (Section 3.2), First Nations, Métis, and Inuit were engaged in the Pathway to Canada Target 1 initiative. Overall, three main groups have contributed to the initiative: ICE; a National Advisory Panel (NAP); and a National Steering Committee. ICE was mandated to give high-level recommendations based on Indigenous Knowledge and local experiences in Indigenous-led conservation to produce guidance to the NAP for establishment of IPCAs (Figure 4.3).



**Figure 4.3.** Pathway to Canada Target 1 Workflow Diagram [ICE 2018]

<sup>10</sup> Québec is not tied to the Pathway Initiative. Québec develops its own instruments to implement the CBD and to contribute to achievement of the Aichi Targets (Geller 2020).

Their work resulted in release of the We Rise Together report that provides diverse stories and perspectives on ethical space, reconciliation, and responsibility for conservation (ICE 2018). The report also outlines the negative history of PAs in the context of Indigenous Peoples and provides guidance and understanding of IPCAs through 28 recommendations (Appendix A). Briefly, the NAP is a group of individuals selected based on merit and perspective from Indigenous Peoples (representation from First Nations and the Métis National Council), land trusts, non-governmental conservation organizations, industry, academia, and youth. The panel was responsible for investigating how the network of protected and conservation areas could be coordinated and connected across the country and for ensuring that the objectives and deliverables would be met. Recommendations made by the NAP were released in the Canada's Conservation Vision report (NAP 2018; Appendix B).

## **5.0 OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES SCREENING AND APPLICATION**

### **5.1 IUCN Guidance**

Sections 5.2 and 5.3 provide current IUCN guidance for identifying candidate areas for OECMs (IUCN-WCPA 2019), followed by an outline of the draft step-by-step methodology for identifying, reporting, recognizing, and supporting OECMs in line with those criteria (Marnewick, Stevens, and Jonas 2019).

The IUCN provides a four-step screening tool<sup>11</sup> to determine whether an area may qualify as an OECM (IUCN-WCPA 2019). It provides guidance within international, national, sub-national, or local conservation strategies and how they may be reported to the CBD. Specifically, the IUCN screening tool applies four tests that assess whether an area corresponds to the different criteria mentioned in the OECM definition:

- **Test 1 (Criterion A):** Ensure the area is not already recognized and/or recorded as a PA
- **Test 2 (Criterion B):** Ensure the area has the essential characteristics as defined for OECMs
- **Test 3 (Criterion C):** Ensure the conservation outcome will endure over the long term
- **Test 4 (Criterion D):** Ensure an in situ area-based conservation target (Aichi Target 11), as opposed to a sustainable use target (Aichi Target 7), is the right focus for reporting

The screening tool also includes an explanatory table for all OECM definition components to help identify whether an area can or should be considered an OECM (Table 5.1).

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<sup>11</sup> The IUCN drafted updated guidance for identifying OECMs (Marnewick, Stevens, and Jonas 2019); however, it had not been finalized at the time of publication of this report.

**Table 5.1.** Summary of IUCN World Commission on Protected Areas Screening Tool Assessing Whether an Area Can Qualify as an Other Effective Area-Based Conservation Measure

Criterion	Element of OECM Definition	Explanation
Criterion A: Area is not currently recognized as a protected area	other than a Protected Area	OECMs contribute in their own right to area-based targets for terrestrial, freshwater, and marine conservation. This means that areas that are already designated as protected areas or lie within protected areas should not also be recognised or reported as OECMs. While protected areas and OECMs are mutually exclusive at any point in time, both protected areas and OECMs have value for biodiversity conservation. Some OECMs may become recognised as protected areas if, for example, nature conservation becomes the primary management objective, or where the area already meets the definition of a protected area and the governing authority now requests its recognition.
Criterion B: Area is governed and managed	geographically defined area	Implies a spatially defined area with agreed and demarcated boundaries, which can include land, inland waters, marine and coastal areas, or any combination of these. In exceptional circumstances, boundaries may be defined by physical features that move over time, such as river banks, the high water mark or extent of sea ice. While the size of OECMs may vary, they should be of sufficient size to achieve the long-term in situ conservation of biodiversity, including all ecosystems, habitats, and species communities for which the site is important. “Sufficient size” is highly contextual and is dependent on the ecological requirements for the persistence of the relevant species and ecosystems.
	governed	Implies that the area is under the authority of a specified entity, or an agreed upon combination of entities. OECMs can be governed under the same range of governance types as protected areas, namely: (1) Governance by governments (at various levels); (2) Governance by private individuals, organisations, or companies; (3) Governance by Indigenous Peoples and/or local communities; and (4) Shared governance (i.e., governance by various rights holders stakeholders together). As with protected areas, the governance of OECMs should be equitable and reflect human rights principles recognised in international and regional human rights instruments and in national legislation, including those related to gender equity and Indigenous Peoples. Governance mechanisms should be effective in maintaining biodiversity.
(Continued on next page.)		

Table 5.1. Continued

Criterion	Element of OECM Definition	Explanation
Criterion B: (Continued)	managed	<p>Specifies that the area is being managed in a way that delivers positive and sustained long-term biodiversity conservation outcomes. Relevant authorities, rightsholders, and stakeholders should be identified and involved in management.</p> <p>Management of OECMs should be consistent with the ecosystem approach, with the ability to adapt to achieve expected long-term biodiversity conservation outcomes and to manage emerging new threats. Accordingly, the management of OECMs should include “effective means” of control of activities that could impact biodiversity, whether through legal measures or other effective means (such as customary laws or binding agreements with the landowners). To the extent relevant and possible, management should be integrated across OECMs and surrounding areas.</p> <p>An area where there is no management regime is not an OECM, even though its biodiversity may remain intact.</p>
Criterion C: Achieves sustained and effective contribution to in situ conservation of biodiversity	positive outcomes for biodiversity conservation (termed effective in the criteria of CBD Decision 14/8)	<p>OECMs should be effective at delivering in situ conservation of biodiversity in the long term. Specifically, there should be a clear causal association between the management and biodiversity outcomes, with mechanisms in place to address existing or anticipated threats (see Mathur, Onial, and Mauvais 2015 for guidance on identifying and managing threats).</p> <p>Environmentally damaging industrial activities and infrastructure development should not occur in OECMs. This is consistent with IUCN Recommendation 102 (IUCN 2016), adopted at the World Conservation Congress 2016 in Hawai‘i. This recommendation calls on governments and relevant authorities “to adopt and implement policies that restrict environmentally-damaging industrial activities and infrastructure development that may have negative impacts on any areas of particular importance for biodiversity and ecosystem services that are identified by governments as essential to achieving the Aichi Biodiversity Targets”. Environmentally-damaging industrial activities include, for example, industrial fishing and forestry, mining, oil and gas extraction, industrial agriculture, and environmentally damaging infrastructure, such as dams, roads and pipelines. These threats should be avoided. This applies both to environmentally damaging activities inside OECMs and also to those outside the area but impacting on the OECMs.</p>
		(Continued on next page.)

Table 5.1. Continued

Criterion	Element of OECM Definition	Explanation
Criterion C: Continued	sustained long-term	<p>The governance and management of OECMs is expected to be sustained to deliver long-term effective in situ conservation of biodiversity. Short-term or temporary management strategies do not constitute an OECM.</p> <ul style="list-style-type: none"> <li>IUCN guidance stipulates that the factors that govern and manage an OECM should be expected to be ongoing and for the long term. Effective conservation outcomes may arise from strict protection or certain forms of sustainable management consistent with the CBD definitions of “in situ conservation” and “biodiversity”. However, most areas managed for industrial production, even if they have some biodiversity benefits, should not be considered OECMs. Sustainably managed commercial fisheries and commercial forests, for instance, should be reported under Aichi Targets 6 and 7, respectively, or other appropriate targets. On the other hand, sites with a range of management approaches, including seasonal arrangements (e.g., sites managed for migratory bird species) may qualify as OECMs if the seasonal measures are part of a long-term overall management regime that results in year-round in situ conservation of biodiversity for which the site is important. In some cases, short-term regulatory instruments, renewed continuously, may provide de facto long-term measures. Management of OECMs should be consistent with an ecosystem and precautionary approach, with the ability to adapt to maintain biodiversity outcomes in the long term and to address potential new threats.</li> </ul>
	in situ conservation of biodiversity	<p>OECMs should deliver biodiversity outcomes of comparable importance to, and complementary with, those of protected areas. This includes their contribution to ecological representation, coverage of areas important for biodiversity and associated ecosystem functions and services, connectivity and integration in wider landscapes and seascapes, management effectiveness, and equity requirements.</p> <p>OECMs are expected to achieve the conservation of nature as a whole, rather than only selected elements of biodiversity. The CBD definitions of “biodiversity” and “in situ conservation” clearly recognize that a single species can only exist in situ as part of an interconnected web with other species and the abiotic environment. Therefore, conservation measures targeting single species or subsets of biodiversity should not allow the broader ecosystem to be compromised. Recognising the linkage between biological and geological diversity, or “geodiversity”, may also be an important management focus in OECMs (Zarnetske et al. 2019).</p>
		(Continued on next page.)

Table 5.1. Continued

Criterion	Element of OECM Definition	Explanation
Criterion C: Continued	biodiversity	<p>Given the explicit link between OECMs and biodiversity conservation outcomes, it is a clear requirement that OECMs must achieve the effective and sustained in situ conservation of biodiversity. OECMs should effectively protect one or more of the following elements of native biodiversity:</p> <ul style="list-style-type: none"> <li>• Rare, threatened, or endangered species and habitats, and the ecosystems that support them, including species and sites identified on the IUCN Red List of Threatened Species, Red List of Ecosystems, or national equivalents.</li> <li>• Representative natural ecosystems. High level of ecological integrity or ecological intactness, which is characterized by the occurrence of the full range of native species and supporting ecological processes. These areas will be intact or capable of being restored under the proposed management regime.</li> <li>• Range-restricted species and ecosystems in natural settings.</li> <li>• Important species aggregations, including during migration or spawning.</li> <li>• Ecosystems especially important for species life stages, feeding, resting, moulting, and breeding.</li> <li>• Areas of importance for ecological connectivity or that are important to complete a conservation network within a landscape or seascape.</li> <li>• Areas that provide critical ecosystem services, such as clean water and carbon storage, in addition to in situ biodiversity conservation.</li> </ul> <p>Species and habitats that are important for traditional human uses, such as native medicinal plants, in addition to in situ biodiversity conservation.</p>
	ecosystem functions and services	<ul style="list-style-type: none"> <li>• Healthy and functioning ecosystems provide a range of services. Ecosystem functions are an integral part of biodiversity, and are defined as the biological, geochemical, and physical processes that take place or occur within an ecosystem. Ecosystem services include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; and supporting services such as soil formation and nutrient recycling.</li> <li>• Protection of these ecosystem functions and services may be a rationale for the recognition of OECMs. However, management to enhance one particular ecosystem service should not impact negatively on the site's overall biodiversity conservation values.</li> </ul>
		(Continued on next page.)

Table 5.1. Continued

Criterion	Element of OECM Definition	Explanation
Criterion D: Associated ecosystem functions and services and cultural, spiritual, socioeconomic and other locally relevant values	cultural, spiritual, socio-economic, and other locally relevant values	OECMs include areas where the protection of key species and habitats and management of biodiversity may be achieved as part of cultural, spiritual, socioeconomic, and other locally relevant values and practices. In such cases, it is essential to ensure the recognition and protection of the linkages between biological and cultural diversity and the associated governance and management practices that lead to positive biodiversity outcomes, such as customary sustainable uses of biodiversity (CBD Article 10c). Conversely, management for cultural, spiritual, socioeconomic or other locally relevant values within an OECM should not impact negatively on biodiversity conservation values.

[Source: IUCN-WCPA 2019]

## 5.2 Canadian Screening Guidance

The Pathway to Canada Target 1 initiative produced a Decision Support Tool (DST) to promote consistency in identifying and reporting OECMs across provinces and territories (Pathway to Canada Target 1 2019). The DST and associated guidance is based on a tool initially developed by the Canadian Council on Ecological Areas (CCEA 2018) but has been revised to better support jurisdictions in assessing whether an area can contribute to Canada's Target 1 as either a PA or an OECM (Pathway to Canada Target 1 2019).

A stakeholder (e.g., land manager, landowner) interested in evaluating whether an area meets the criteria for either a PA or an OECM needs to do so against nine criteria (Table 5.2). For each criterion, the evaluator must select a single response indicating whether the candidate area meets (Table 5.2, Column A), may meet (Column B), or does not meet (Column C) the criterion. The DST includes a two-step test to determine whether an area is to be designated as a PA, an OECM, or neither:

- **Test 1:** Ensure the area meets the standard for all nine criteria shared by PAs **and** OECMs
- **Test 2:** Determine whether the area can qualify as a candidate for a PA **or** an OECM

An area that conforms to the DST criteria can be reported and included in the Canadian Protected and Conserved Areas Database (CPCAD). This database is managed by ECCC in collaboration with provincial and territorial jurisdictions (ECCC 2021b).

## 5.3 Challenges in Assessing Potential Other Effective Area-Based Conservation Measures

As noted, Canada has included OECMs as a strategy to achieve Target 1 in its NBSAP; however, the formal definition was only recently agreed upon internationally (IUCN-WCPA 2019). As a result, there has been very little progress in designating OECMs in Canada (and globally) to date (Section 6). The slow uptake of OECMs is probably due to the complicated screening process, inconsistencies with terminology and criteria, and uncertainty with designated areas. As Canada developed its own criteria for screening and designating areas as OECMs (Pathway to Canada Target 1 2018, 2019), inconsistencies with the IUCN designation criteria have been identified. For example, Lemieux et al. (2019) outlined several inconsistencies between the operational criteria used by the Department of Fisheries and Oceans and those of the Canadian Council on Ecological Areas (CCEA) and IUCN-WCPA, which led to the designation of several marine refuges as OECMs even though these areas remain exposed to industrial pressures. Moving forward, development of additional guidance and resources (e.g., handbooks and training/information sessions) to assist land managers, practitioners, and decision-makers could help achieve consistent accounting and screening of candidate areas across provinces and territories.

Although Canada's DST provides guidance for screening a candidate area as a PA or an OECM (Table 5.2), several potential pitfalls may arise during the screening process compared with the guidance provided by the IUCN (Table 5.1). First, the DST does not address each of the characteristics used to describe OECMs, such as assessing whether the area is associated with "ecosystem functions and services" and "cultural, spiritual, socio-economic, and other locally relevant values", two aspects that are included in the IUCN definition on OECMs (Dudley 2008). Second, the words used in the DST differ from those used in the IUCN definition of OECMs. For example, in the DST the word "timing" refers to "sustained," and "effective means" refers to "managed". Third, the DST is structured in a complex manner. It first assesses standards common to PAs and OECMs (Test 1 in Table 5.2) and then assesses standards that differ between these designations (Test 2 in Table 5.2) instead of simply assessing the criteria within the IUCN definition in the same order they are mentioned (Table 5.1). These inconsistencies are likely to lead to a lack of consistent interpretation and reporting of OECMs across provincial and territorial governments.



**Table 5.2.** Canada's Decision Support Tool

Test 1 Standards Common to PAs and OECMs	Criteria	Intended Effect of Criterion	Standards for Meeting PA and OECM Criteria		
			[A]  Clearly meets standard	[B]  May meet standard – may require further evaluation	[C]  Does NOT meet standard
	Geographical Space	Demarcates the area to facilitate the in situ conservation of biodiversity	The geographical space has clearly defined and agreed- upon borders.	The geographical space is intended to be clearly defined but may not be easily or widely recognizable.	The geographical space is not clearly defined.
	Effective means 1	Activities incompatible with in situ conservation of biodiversity do not occur and compatible activities are effectively managed	The mechanism(s) provide(s) the ability to prevent incompatible activities and manage all other activities within the area, such that in situ conservation of biodiversity can be achieved.	The mechanism(s) provide(s) the ability to prevent, control and/or manage activities within the area such that in situ conservation of biodiversity can be achieved.	The mechanism(s) does/do not provide sufficient ability to prevent and/or manage activities within the area that are likely to have impacts on biodiversity.

(Continued on next page. See notes at end of table.)

Table 5.2. Continued

Test 1 Standards Common to PAs and OECMs	Criteria	Intended Effect of Criterion	Standards for Meeting PA and OECM Criteria		
			[A] Clearly meets standard	[B] May meet standard – may require further evaluation	[C] Does NOT meet standard
	Long-term	The area is permanently protected or conserved and the mechanism is not easily reversed	The mechanism(s) is/are intended to be in effect for the long term and not easily reversed.	The mechanism(s) is/are expected to be in effect for the long term and not easily reversed.	The mechanism(s) is/are not intended or expected to be in effect for the long term or may be easily reversed.
	Timing	Biodiversity is protected or conserved year-round	The mechanism(s) is/are in effect year-round.	Seasonal mechanism(s) is/are combined with other mechanism(s) to result in the year-round in situ conservation of biodiversity.	The mechanism(s) is/are not in effect year-round.
(Continued on next page. See notes at end of table.)					

**Table 5.2. Continued**

			Standards for Meeting PA or OECM Criteria				
			PA	[B]	[C]	OECM	PA and OECM
Test 2 Standards that Differ between Protected Areas and OECMs	Criteria of Objectives	Intended Effect of Criterion	[A] Clearly meets standard for PA	[B] May meet PA standard but requires further evaluation in order to make a decision	[C] Clearly meets standard for OECM	[D] May meet OECM standard but requires further evaluation in order to make a decision	[E] Does not meet standard for PA or OECM
	Primacy of Objectives	Objectives are such that they result in the in situ conservation of biodiversity	Conservation objectives are stated as primary and overriding of other objectives	Based on evident intent (e.g., management intent, stated or implied conservation objectives, allowable and prohibited activities), conservation objectives are primary and overriding, or are given priority when there is conflict among objectives	Primary and overriding objectives are clear and not in conflict with the in situ conservation of biodiversity	Based on evident intent (e.g., management intent, stated or implied objectives, allowable and prohibited activities), primary and overriding objectives are not expected to result in adverse impacts on in situ conservation of biodiversity	Based on evident intent the in situ conservation of biodiversity is likely to be compromised by conflicting objectives, or objectives do not exist
	Scope of Objectives	Objectives have sufficient scope to result in the in situ conservation of biodiversity	The objectives are for the in situ conservation of biodiversity as a whole, or for Indigenous values accomplished through in situ conservation of biodiversity	The objectives are for the in situ conservation of a subset of biodiversity or Indigenous values, such as particular species or habitats, accomplished through in situ conservation of biodiversity	The area has objectives consistent with, whether intentionally or otherwise, the in situ conservation of biodiversity	Even though biodiversity conservation is not necessarily a management objective, the area delivers in situ conservation of biodiversity as a byproduct of management	The objectives are neither for, nor consistent with, the in situ conservation of biodiversity; or objectives do not exist

(Continued on next page. See notes at end of table.)

Table 5.2. Continued

Test 2 Standards that Differ between Protected Areas and OECMs	Criteria	Intended Effect of Criterion	Standards for Meeting PA or OECM Criteria					
			PA		OECM			PA and OECM
			[A]	[B]	[C]	[D]	[E]	
	Scope of Objectives	Objectives have sufficient scope to result in the in situ conservation of biodiversity	Clearly meets standard for PA	May meet PA standard but requires further evaluation in order to make a decision	Clearly meets standard for OECM	May meet OECM standard but requires further evaluation in order to make a decision	Does not meet standard for PA or OECM	
			The objectives are for the in situ conservation of biodiversity as a whole, or for Indigenous values accomplished through in situ conservation of biodiversity	The objectives are for the in situ conservation of a subset of biodiversity or Indigenous values, such as particular species or habitats, accomplished through in situ conservation of biodiversity	The area has objectives consistent with, whether intentionally or otherwise, the in situ conservation of biodiversity	Even though biodiversity conservation is not necessarily a management objective, the area delivers in situ conservation of biodiversity as a byproduct of management	The objectives are neither for, nor consistent with, the in situ conservation of biodiversity; or objectives do not exist	
(Continued on next page. See notes at end of table.)								

**Table 5.2. Continued**

Test 2 Standards that Differ between Protected Areas and OECMs	Criteria	Intended Effect of Criterion	Standards for Meeting PA or OECM Criteria				
			PA		OECM		PA and OECM
			[A]	[B]	[C]	[D]	
			Clearly meets standard for PA	May meet PA standard but requires further evaluation in order to make a decision	Clearly meets standard for OECM	May meet OECM standard but requires further evaluation in order to make a decision	[E]  Does not meet standard for PA or OECM
	Governing Authorities	The in situ conservation of biodiversity is not jeopardized by relevant governing authorities	All relevant governing authorities acknowledge and abide by the conservation objectives of the area	While not all relevant governing authorities are bound by the conservation objectives, the area is being managed in a manner likely to continue achieving in situ conservation of biodiversity	All relevant governing authorities acknowledge and abide by a management regime that delivers in situ conservation of biodiversity	While not all relevant governing authorities are bound by a management regime that delivers in situ conservation of biodiversity, the area is being managed in a manner likely to continue achieving in situ conservation of biodiversity	Not all relevant governing authorities acknowledge and abide by the conservation objectives of the area or by a management regime likely to result in the in situ conservation of biodiversity. As a result, the area is not managed in a manner likely to deliver in situ conservation of biodiversity

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Table 5.2. Continued

Test 2 Standards that Differ between Protected Areas and OECMs	Criteria	Intended Effect of Criterion	Standards for Meeting PA or OECM Criteria			
			PA		OECM	
			[A]	[B]	[C]	[D]
	Biodiversity Conservation Outcomes	Biodiversity is conserved in situ	Clearly meets standard for PA The area is achieving the conservation objectives	May meet PA standard but requires further evaluation in order to make a decision The area is being managed with the intent of, and is likely achieving, the conservation objectives	Clearly meets standard for OECM The area is being managed in a way that delivers in situ conservation of biodiversity	May meet OECM standard but requires further evaluation in order to make a decision The area is being managed in a way that is likely to deliver in situ conservation of biodiversity
						[E] Does not meet standard for PA or OECM The area is not being managed in a way that achieves the conservation objectives nor is it likely to deliver in situ conservation of biodiversity

[Source: adapted from Pathway to Canada Target 1 2019]

Note: see Appendix C for an example screening process for OECM designated at Canadian Forces base in Manitoba

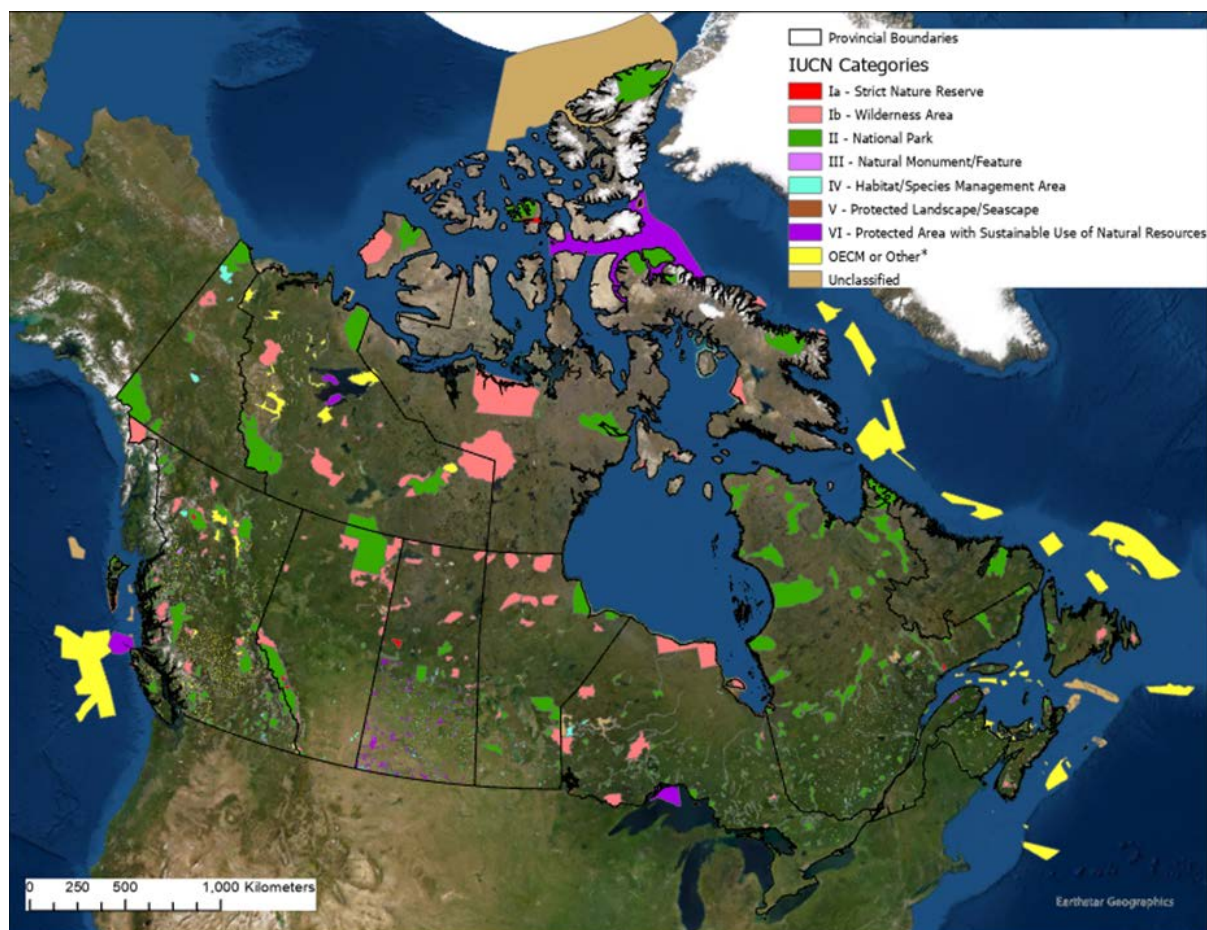
Another weakness of both the DST and IUCN screening tools is the lack of science behind the OECM designation criteria. None of the criteria used for either tool includes metrics (e.g., for measuring biodiversity, Magurran 2004) or science that can quantify targets, with one exception: Mathur, Onial, and Mauvais 2015 is cited for guidance on identifying and managing threats. Both tools use the words “...achieve in situ conservation of biodiversity...”, which can be open to interpretation. The fact that the screening criteria use very general descriptions and objectives create opportunities for varying interpretations, different opinions, and politics to influence accounting and thus the ultimate conservation goal (MacKinnon et al. 2015). For example, standards for meeting PA or OECM criteria in some instances can differ by a single word and could depend on the jurisdictions’ interpretations, which are likely to vary.

## **6.0 PROGRESS ON CANADA’S TARGET 1**

In 2019, Canada published its 6<sup>th</sup> National Report to the CBD (ECCC 2019a), which outlines the progress towards meeting the 2020 Biodiversity Goals and Targets for Canada and highlights Canada’s contributions to the global Strategic Plan for Biodiversity. By the end of 2019, it was reported that 12.1% of Canada’s land and inland water and 13.8% of coastal and marine areas were conserved (ECCC 2019b). According to the national report summary, Canada has already met its target of conserving 10% of coastal and marine areas by 2020; however, progress towards meeting Canada’s terrestrial target (17% of terrestrial areas and inland water by 2020) has been missed (ECCC 2019b). In February 2021, the CPCAD was updated to the end of December 2020, where the summary results of total PAs and OECMs within terrestrial and marine environments were published. Unfortunately, Canada saw only a slight uptick in its total conserved areas (12.5%) and failed to achieve its target by the end of the strategic plan.

### **6.1 Protected Areas in Canada**

As of December 2020, Canada had a total of 1,126,717 km<sup>2</sup> of terrestrial (11.3%) and 514,895 km<sup>2</sup> of marine (8.9%) PAs across the six IUCN categories (Table 6.1, Figure 6.1). Category II (National Park) PAs represented the largest proportion of total area by IUCN category (59.2%, 667,661 km<sup>2</sup>) for terrestrial lands. In comparison, the most protected marine areas were under Category VI (73.4%, 119,944 km<sup>2</sup>). An additional 351,516 km<sup>2</sup> has been designated as federal or national marine and falls under the “other” category as identified in the CPCAD (Table 6.1). Proportionally speaking, British Columbia currently has the highest coverage of PAs (17.6%); however, as of mid-December 2020 (not yet included in the CPCAD), Québec had added an additional ~96,000 km<sup>2</sup> of PAs (Table 6.1). Nunavut maintains the largest cumulative area protected (353,061 km<sup>2</sup>), where much of the total area (30%) is in the Tallurutiup Imanga National Marine Conservation Area (Category VI, 107,926 km<sup>2</sup>). On the other end of the spectrum, except for Nova Scotia (12.9% of area conserved), maritime provinces have each protected less than 7% of their landmass (New Brunswick 5.8%; Prince Edward Island 4.0%; Newfoundland and Labrador 6.9%).



**Figure 6.1.** Canada's Protected and Conserved Areas by IUCN Category; \*Other refers to sites that do not meet the protected area definition, see Appendix E for protected and conserved areas by province [created from data compiled within the CPCAD (ECCC 2021b)]



**Table 6.1.** Total and Cumulative Area (km<sup>2</sup>) of Terrestrial (includes freshwater environments) and Marine Protected Areas by IUCN Category in Canada as of December 2020

Province/ Territory	Baseline Area (km <sup>2</sup> )	Biome	IUCN Protected Areas Category (km <sup>2</sup> ) <sup>a</sup>								Cumulative		
			Ia	Ib	II	III	IV	V	VI	Other <sup>b</sup>	Proposed	Sub Total (km <sup>2</sup> )	Total (km <sup>2</sup> )
Yukon	482,443	Terrestrial	0	5,217	44,256.4	240.2	7,012.9	0	0	0	0	56,726	56,805
		Marine	0	0	79	0	0	0	0	0	0	79	
Northwest Territories	1,346,106	Terrestrial	110.7	78,221.4	88,385.2	0	0	0	5,570.8	0	0	172,288.1	173,545.5
		Marine	34.6	1,120.6	97.0	0	0	0	5.2	0	0	1,257.4	
Nunavut	2,093,190	Terrestrial	2,659.3	100,660.8	115,976.8	0	0	127.9	74.0	0	0	219,498.8	353,063.8
		Marine	398.3	15,751.5	9,489.2	0	0	0	107,926	0	0	133,565.0	
British Columbia	944,735	Terrestrial	1,068.6	36,257.1	103,781.8	1,390.6	3,389.4	3.3	196.4	145.0	0	146,232.2	166,206.5
		Marine	512.2	154.2	3,615.2	62.4	304.3	3,500.1	11,801.6	24.3	0	19,974.3	
Alberta	661,848	Terrestrial	1,161.8	36,189.5	57,968.0	70.0	1,317.1	0	0	2,413.6	0	99,120	99,120
		Marine	0	0	0	0	0	0	0	0	0	0	
Saskatchewan	651,036	Terrestrial	1,598.9	20,537.4	11,704.8	60.4	6,997.8	659.2	23,767.5	46.2	0	65,372.3	65,372.3
		Marine	0	0	0	0	0	0	0	0	0	0	
Manitoba	647,797	Terrestrial	425.4	34,329.7	34,481.4	609.5	1,337.5	0.9	0	0	0	71,184.4	72,070.6
		Marine	0	0	886.2	0	0	0	0	0	0	886.2	
Ontario	1,076,395	Terrestrial	1,219.4	48,656.5	41,809.3	103.2	3,530.9	45.5	11,026.3	8,799.7	0	115,190.8	115,265.9
		Marine	0	66.1	0	0	0	0	0	0	0	66.1	
Québec	1,512,418	Terrestrial	1,700.7	0	184,827.5	479.9	7,915.4	0	1,033.3	2,478.6	0	198,435.4	205,720.5
		Marine	318.5	0	4,030.7	157.0	2,767.4	0	10.7	0.8	0	7,285.1	
New Brunswick	72,908	Terrestrial	43.0	175.9	3,137.7	0.1	13.5	0	19.4	162.1	631.0	4,182.7	4,240.9
		Marine	0.0	0.8	0.6	10.4	3.3	0	42.2	0.9	0	58.2	
Prince Edward Island	5,660	Terrestrial	0	0	35.1	64.5	109.6	2.2	0	2.0	0	213.4	228.3
		Marine	0	1.4	0.7	5.5	7.2	0.1	0	0	0	14.9	
Nova Scotia	55,284	Terrestrial	242.7	4,066.3	1,718.4	133.1	533.0	0	76.0	338.7	0	7,108.2	7,130.8
		Marine	10.2	0	1.3	0	5.7	0	2.8	2.6	0	22.6	
Newfoundland and Labrador	405,212	Terrestrial	7.4	3,980.4	23,835.3	2.9	0	0	65.1	0	0	27,891.1	28,060.1
		Marine	1.6	0	11.8	0	0	0	155.6	0	0	169.0	
Total	9,955,032	Terrestrial	10,237.9	363,075.0	667,661.3	2,914.2	25,144.2	839.0	41,828.8	14,385.9	631.0	1,126,717.3	1,290,095.1
		Marine	1,275.4	17,094.6	18,211.7	235.3	3,087.9	3,500.2	119,944.1	28.6	0	163,377.8	
	5,750,000	Federal/National Marine <sup>d</sup>	—	—	—	—	—	—	—	351,516.8	—	351,516.8	6.1

[Source: data compiled from CPCAD (ECCC 2021b)]

<sup>a</sup> values include status "Designated," "Established-ENGO or Private," and "Established-Interim"

<sup>b</sup> other: IUCN category identified in database as either "N/A" (OECM or other site types that do not meet the PA definition) or "Yes" (PA without an IUCN category)

<sup>c</sup> on December 17, 2020, Québec announced an additional 96,534 km<sup>2</sup> of PAs that have not yet been designated within the CPCAD

([https://www.environnement.gouv.qc.ca/infuseur/communiqu\\_e.asp?no=4445](https://www.environnement.gouv.qc.ca/infuseur/communiqu_e.asp?no=4445))

<sup>d</sup> National Marine: not assigned to specific province or territory and includes both coastal/offshore and marine areas for Arctic, Atlantic, and Pacific Oceans

Approximately 95% of Canadian PAs are classified as Category I, II, III, or IV, which prohibit industrial activities such as mining, forestry, and hydro development within their boundaries (Table 6.1). This contrasts with what many European countries (e.g., Germany, France) report, where Category V represents the most significant proportions within their borders (UNEP-WCMC and IUCN 2021). Canada is also one of the few nations in the world with very large PAs and relatively “undisturbed” areas (Section 7.3; Figure 6.1).

It is worth noting that Canada’s PA categories can vary across jurisdictions. These areas have all been designated as Ecological Reserves but have been identified as having different IUCN PA categories: Pointe-Heath Ecological Reserve in Québec (Category Ia); Little Grand Lake Provisional Ecological Reserve in Newfoundland (Category II); and Rumsey Ecological Reserve in Alberta (Category IV) within the CPCAD (ECCC 2021b).

## 6.2 Other Effective Area-Based Conservation Measures in Canada

As of December 2020, a total of 135 OECMs covering a cumulative area of 360,309 km<sup>2</sup> (Terrestrial 77,443 km<sup>2</sup> [n=76]; Marine 282,867 km<sup>2</sup> [n=59]) had been established in Canada<sup>12</sup> (Table 6.2). By jurisdiction, the Northwest Territories are responsible for the greatest number and size of OECMs in Canada (n=59, 39,182 km<sup>2</sup>); however, they are all part of the same regional land-use plan (Sahtu Land Use Plan), which is under a collaborative governance structure. British Columbia maintains the most diverse set of OECM designation types (seven) and the greatest proportional land cover by jurisdiction (4.1% of the land base, Table 6.2). Beyond these two jurisdictions, OECMs exist in only two other provinces: Prince Edward Island (n=8, 24 km<sup>2</sup>) and Manitoba (n=1, 231 km<sup>2</sup>), where the former maintains the only privately owned OECMs in the country (Table 6.2). Although Canada has only formally reported establishment of OECMs in a few jurisdictions (4 of 13), their frequency and coverage are expected to grow substantially over the next decade as a better understanding of the designation develops. As a result, it will be crucial to enable the evaluation of more areas as possible OECMs in the future, particularly as Canada increases its post-2020 conservation targets (Section 9).

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<sup>12</sup> Canada is one of only three countries globally (along with the UK and Algeria) to formally designate OECMs (UNEP-WCMC and IUCN 2021).

**Table 6.2.** Total Area (km<sup>2</sup>) and Count of Other Effective Area-Based Conservation Measures by Biome (terrestrial and marine) in Canada as of December 2020

Province/ Territory	Baseline Area (km <sup>2</sup> )	Biome	OECM Area (km <sup>2</sup> )	OECM Area Count	OECM (%)	Cumulative Area Conserved with PA	OECM Designation Type (Frequency): Supporting Document
Yukon	482,443	Terrestrial	0	–	0.0	11.8	
		Marine	0	–	0.0		
Northwest Territories	1,346,106	Terrestrial	39,182.4	59	2.9	15.8	Conservation Zone (45): <a href="https://sahulanduseplan.org/plan">https://sahulanduseplan.org/plan</a> Heritage Conservation Zone (13): <a href="https://www.gwichinplanning.nt.ca/landUsePlan.html">https://www.gwichinplanning.nt.ca/landUsePlan.html</a> Wildlife Conservation Zone (1): <a href="http://www.enr.gov.nt.ca/programs/conservation-planning">http://www.enr.gov.nt.ca/programs/conservation-planning</a>
		Marine	0	–	0.0		
Nunavut	2,093,190	Terrestrial	0	–	0.0	16.9	N/A
		Marine	0	–	0.0		
British Columbia	944,735	Terrestrial	38,005.3	8	4.1	21.6	Conservation Area (1) Flathead Watershed Area (1): <a href="http://www.belaws.ca/civix/document/id/consol26/consol26/00_11020_01">http://www.belaws.ca/civix/document/id/consol26/consol26/00_11020_01</a> Muskwa-Kechika Special Wildland Area: <a href="http://www.belaws.ca/civix/document/id/complete/statreg/98038_01">http://www.belaws.ca/civix/document/id/complete/statreg/98038_01</a> Nature Reserve (2) Old-growth Management Area (1): <a href="https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legal-current">https://catalogue.data.gov.bc.ca/dataset/old-growth-management-areas-legal-current</a> Sea to Sky Wildland Zone (1) Wildlife Habitat Area (1): <a href="http://www.env.gov.bc.ca/wld/frpa/iwms/wha.html">http://www.env.gov.bc.ca/wld/frpa/iwms/wha.html</a>
		Marine	0	–	0.0		
Alberta	661,848	Terrestrial	0	–	0.0	15.0	N/A
		Marine	0	–	0.0		
Saskatchewan	651,036	Terrestrial	0	–	0.0	10.0	N/A
		Marine	0	–	0.0		
Manitoba	647,797	Terrestrial	230.6	1	0.0	11.1	OECM (1): <a href="https://www.iucn.org/news/protected-areas/201905/new-canadian-other-effective-conservation-measure-canadian-forces-base-shilo">https://www.iucn.org/news/protected-areas/201905/new-canadian-other-effective-conservation-measure-canadian-forces-base-shilo</a>
		Marine	0	–	0.0		
Ontario <sup>a</sup>	1,076,395	Terrestrial	38	–	0.0	10.7	N/A
		Marine	0	–	0.0		
Québec	1,512,418	Terrestrial	0	–	0.0	13.6	N/A
		Marine	0	–	0.0		
New Brunswick	72,908	Terrestrial	0	–	0.0	5.8	N/A
		Marine	0	–	0.0		
Prince Edward Island	5,660	Terrestrial	24.2	8	0.0	4.4	Privately Owned Conservation Area (1) Provincially Owned Conservation Area (1)
		Marine	0	–	0.0		
Nova Scotia	55,284	Terrestrial	0	–	0.0	12.9	N/A
		Marine	0	–	0.0		
Newfoundland and Labrador	405,212	Terrestrial	0	–	0.0	6.9	N/A
		Marine	0	–	0.0		
Total	9,955,032	Terrestrial	77,442.5	76	0.8	12.1	
	5,750,000	Marine	282,867.1	59	4.9	13.8	
		Grand Total		360,309.6	135		

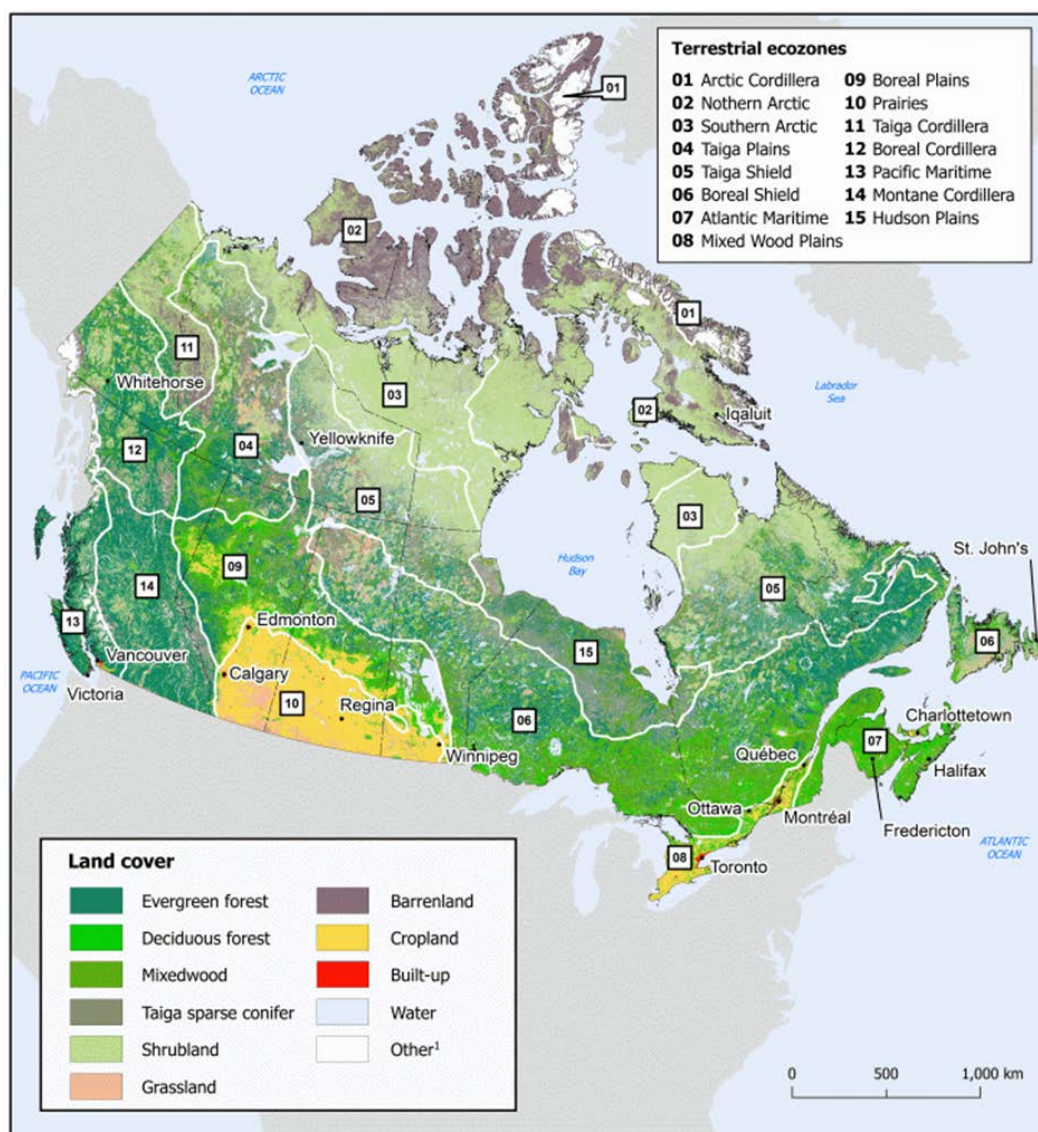
[Source: data compiled from CPCAD (ECCC 2021b)]

<sup>a</sup> data for Ontario private lands removed from CPCAD due to data sharing restrictions; unable to provide number of OECC areas

## 7.0 CAN FOREST MANAGEMENT AREAS CONTRIBUTE TO TARGET 1?

### 7.1 Canada's Forest

Global estimates show that more than half the world's known terrestrial plant and animal species reside in forests, with a vast majority residing in tropical and subtropical forests (Gaston 2000; Hillebrand 2004; Hassan, Scholes, and Ash 2005; Mittelbach et al. 2007; Pillay et al. 2021). Worldwide, forests cover approximately 3999 million ha across four major biomes: tropical, subtropical, temperate, and boreal (FAO 2015). Canada is covered by 347 million ha (38% of Canada's land area) of forested lands (Figure 7.1), corresponding to nearly 9% of the global total forest area (NRCan 2020b). Most forests in Canada are publicly owned (91.4%, ~317.2 million ha), with constitutional ownership and management by individual provinces (76.6%, ~265.8 million ha) and territorial governments (12.9%, ~44.8 million ha), while relatively little is privately (6.2%, ~21.5 million ha) or Indigenously (2.0%, 6.9 million ha) owned (NRCan 2020b).



**Figure 7.1.** Canada's Land Cover by Terrestrial Ecozones at 250-m Resolution [NRCan 2012]

Forests contribute to a major source of wealth in Canada by providing economic, cultural, social, and environmental benefits. From a strictly economic perspective, the forest sector contributed \$23.7 billion (1.1%) to Canada's gross domestic product and employed more than 204,000 Canadians in 2019 (NRCan 2020b). Forests provide an array of ecosystem services that include habitat for wildlife, carbon storage, and purification of air and water, and are also a source of biomass to produce bioenergy (85% from forests) and wood products (Goodale et al. 2002; Bradshaw, Warkentin, and Sodhi 2009; NRCan 2020c).

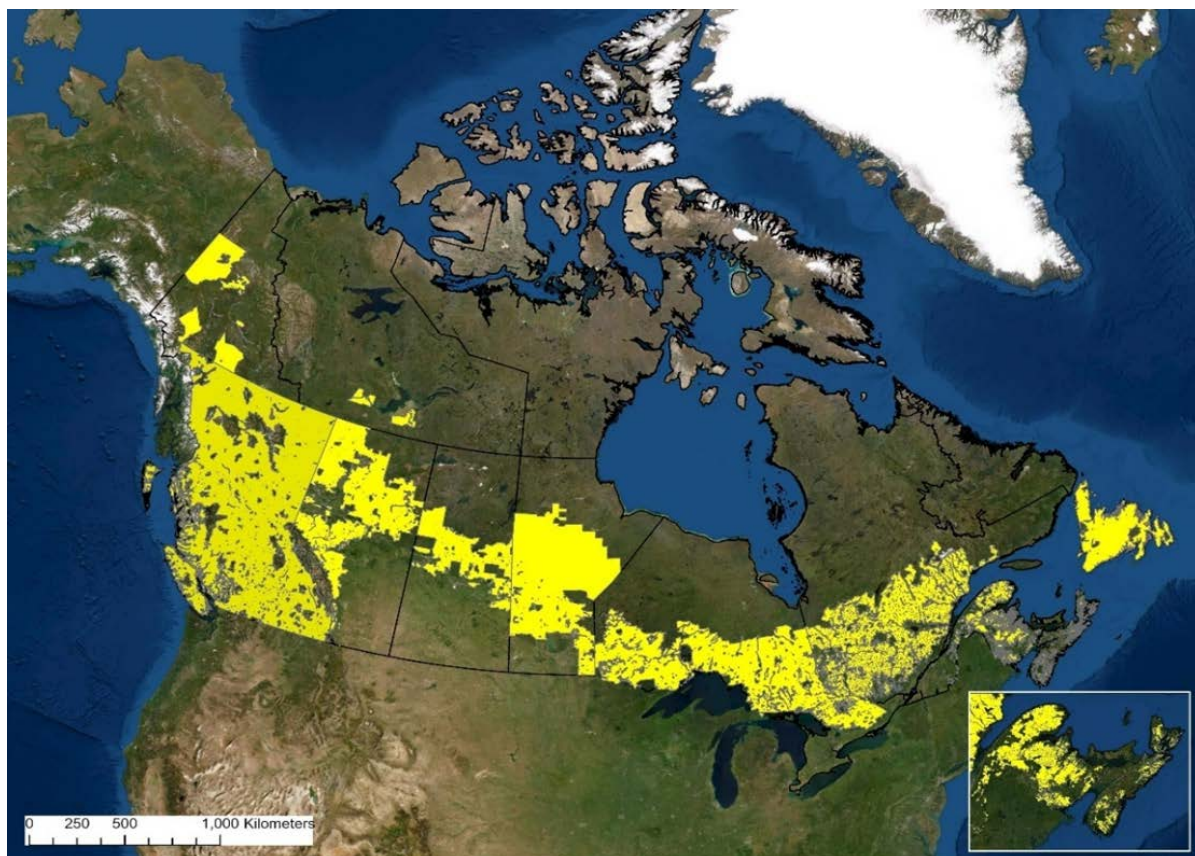
Canada is rich in biodiversity, hosting approximately 80,000 known species (excluding viruses and bacteria) (CESCC 2016). Canada's forested land is diverse, with an estimated 212 tree species identified (157 native and 55 exotic excluding hybrids and variants) (NFI 2014) and is primarily composed of boreal forests (67.8%), a type of ecosystem dominated by coniferous species (NRCan 2020b). The boreal forest is home to a rich and diverse range of species, some of which are endemic to the forests of Canada, and has been estimated to contain roughly 20,300 plant species and over 300 species of birds (Ruckstuhl, Johnson, and Miyanishi 2008; NRCan 2020c).

The boreal forest is a disturbance-driven biome that experiences recurring large-scale natural disturbances, with fire (Fortin, Payette, and Marineau 1999; Bergeron and Fenton 2012) and insect epidemics (Volney and Fleming 2000; Navarro et al. 2018; Sambraju and Goodsman 2021) the most prominent. These disturbances shape the forest landscape and influence forest composition, structure, and biodiversity (NRCan 2020c). In response to climate change, the boreal forest and other northern forest biomes may eventually represent a potential refuge for many southern species that are expected to migrate northward as they attempt to match their climatic niches (e.g., Solarik et al. 2020; Stralberg et al. 2020). Further, these northern regions are becoming recognized for their potential role in providing other ecosystem services (e.g., carbon, freshwater, recreation) and are increasingly being advocated as areas that should be conserved (Wulder et al. 2018; Mitchell et al. 2021).

## **7.2 Forest Management in Canada**

In 2018, Canada harvested an estimated 0.3% (747,690 ha) of its reported 226 million ha of managed forest, of which 88.5% (200 million ha) is under long-term forest management planning (Figure 7.2; NRCan 2020b). Provincial and territorial governments grant forest companies rights to operate on public lands, and they regulate forestry operations by approving forest management plans (FMPs) (NCASI 2014, 2021). Canada's forest laws and regulations are amongst the strictest in the world and are designed to ensure the country's forests are managed sustainably over the long term (Gilani and Innes 2020; NRCan 2020a). Federal, provincial, and territorial regulations, voluntary best management practices, and third-party forest certification programs are oriented towards ensuring that FMPs implement strategies that minimize potential adverse effects over the short and long terms (NCASI 2020; NRCan 2020a).



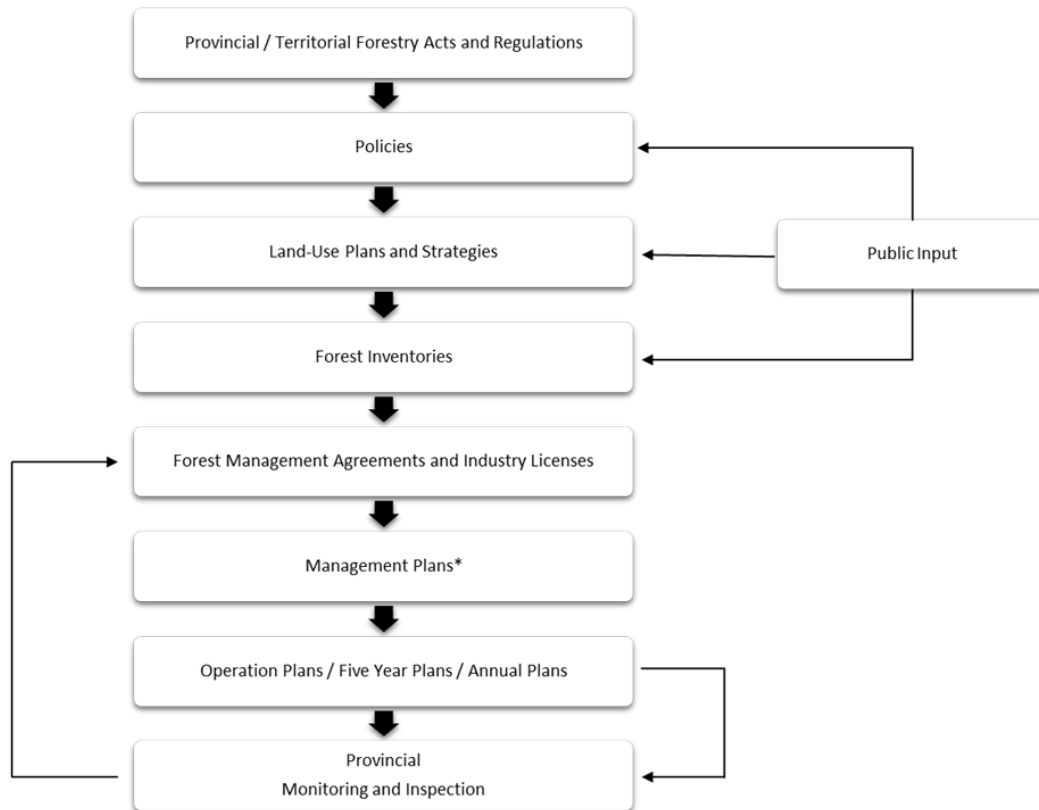


**Figure 7.2.** Relative Extent of Canada’s Managed Forest in 2019  
[developed from data shapefiles (ArcGIS) provided by Spatialworks]

All provinces and territories follow a similar forest management planning framework (with minor variations) (Figure 7.3). In general, forest management agreements (FMAs) are long-term (typically 20 to 25 years<sup>13</sup>), renewable arrangements for forest tenure, where a company is granted harvesting rights in exchange for managing forests in a responsible manner and paying a fee (“stumpage”) for the wood removed. Through FMAs, forest companies are granted the right to harvest timber in accordance with a defined level of annual allowable cut approved by each provincial government. FMAs/licenses are government driven and are aligned with broader landscape-level planning objectives for the province in question. Forest tenures include requirements for managing the forest for a broad set of values that goes beyond timber production and includes social, economic, and environmental factors (e.g., watershed and wetland protection, biodiversity, wildlife habitat, long-term stability of forest ecosystems, recreation), as well as cumulative effects. FMPs or forest stewardship plans (FSPs) are typically developed every five or ten years (but can be up to 25 years) (Table 7.1) to provide a strategic vision and commitment to conserving forest values within the context of the longer-term FMA or license. An FMP/FSP outlines forest management objectives and strategies, including consideration for Indigenous rights, recognition of ecosystem services, public input, and consultation. Annual operating plans (AOPs) or annual site plans typically define aspects such as planning, harvesting, and reforestation activities, as well as harvesting blocks and road building schedules for the year of activity. These annual plans incorporate highly detailed information

<sup>13</sup> The IUCN recognizes that “long-term” should mean at least 25 years in the case of privately protected areas, although the intent should be conservation “in perpetuity” (Stolton, Redford, and Dudley 2014).

associated with designing harvesting blocks in a manner that complies with regulations associated with maintaining riparian areas alongside waterbodies as well as identifying and maintaining habitat for species at risk and other wildlife. Forestry companies are also required to submit formal reports on their activities, and FMAs/licenses and FMPs/FSPs may be updated as a result. AOPs are subject to provincial monitoring and inspection to ensure compliance (Table 7.1). Failure to comply with provincial or federal policy and regulations can lead to significant penalties, including fines, suspension of harvesting rights, or seizure of timber.



**Figure 7.3.** Forest Management Planning Framework in Canada; \*management plans include forest management, annual allowable cuts, and sustainable harvest levels; see Table 7.1 for provincial and territorial plans specific to a given jurisdiction [adapted from MCEC 2020]

**Table 7.1.** Provincial and Territorial Forest Management Licensing

Province/ Territory	Forest Management Agreement (years)	Forest Management Plan	Review Period	Operating Plan	Standard Referenced	Other Acts Referenced	Public Engagement	Indigenous Reference	Advisory Board	Professional Sign-Off	Appeals	Audits
Yukon	10+	10	10	1	No	Yes	Yes	Yes	Yes	No	Minister	Independent
British Columbia	20	5	5	1	Yes	Yes	Yes	Yes	Yes	Yes	Board	Independent
Alberta	20	10	10	1	Yes	Yes	Yes <sup>a</sup>	Yes <sup>a</sup>	Yes	Yes	Minister	Self-Report
Northwest Territories	25+	5	5	1	No	Yes	Yes	Yes	No	No	Minister	Unaddressed
Saskatchewan	20	5	10	1	Yes	Yes	Yes	Yes	Yes	Yes	Minister	Independent
Manitoba	20+	20	5 <sup>a</sup>	2 <sup>a</sup>	No	No	Yes <sup>a</sup>	Yes <sup>a</sup>	Yes <sup>a</sup>	Yes	Minister	Unaddressed
Ontario	20	5	5	1	Yes	Yes	Yes	Yes	Yes	Yes	Minister	Independent
Québec	N/A	5	N/A	1	Yes	Yes	Yes	Yes	Yes	Yes	Minister	Unaddressed
New Brunswick	25	25	5	1	Yes	Yes	Yes	No	Yes	No	Board	Min. Direction
Nova Scotia	20	N/A	10	1	Yes	No	No	No	No	No	Unaddressed	Unaddressed
Prince Edward Island	20	5	N/A	5	Yes	No	Yes	No	Yes	No	N/A	Unaddressed
Newfoundland and Labrador	20+	5	5	1	No	No	Yes	Yes <sup>a</sup>	No	No	Unaddressed	Unaddressed

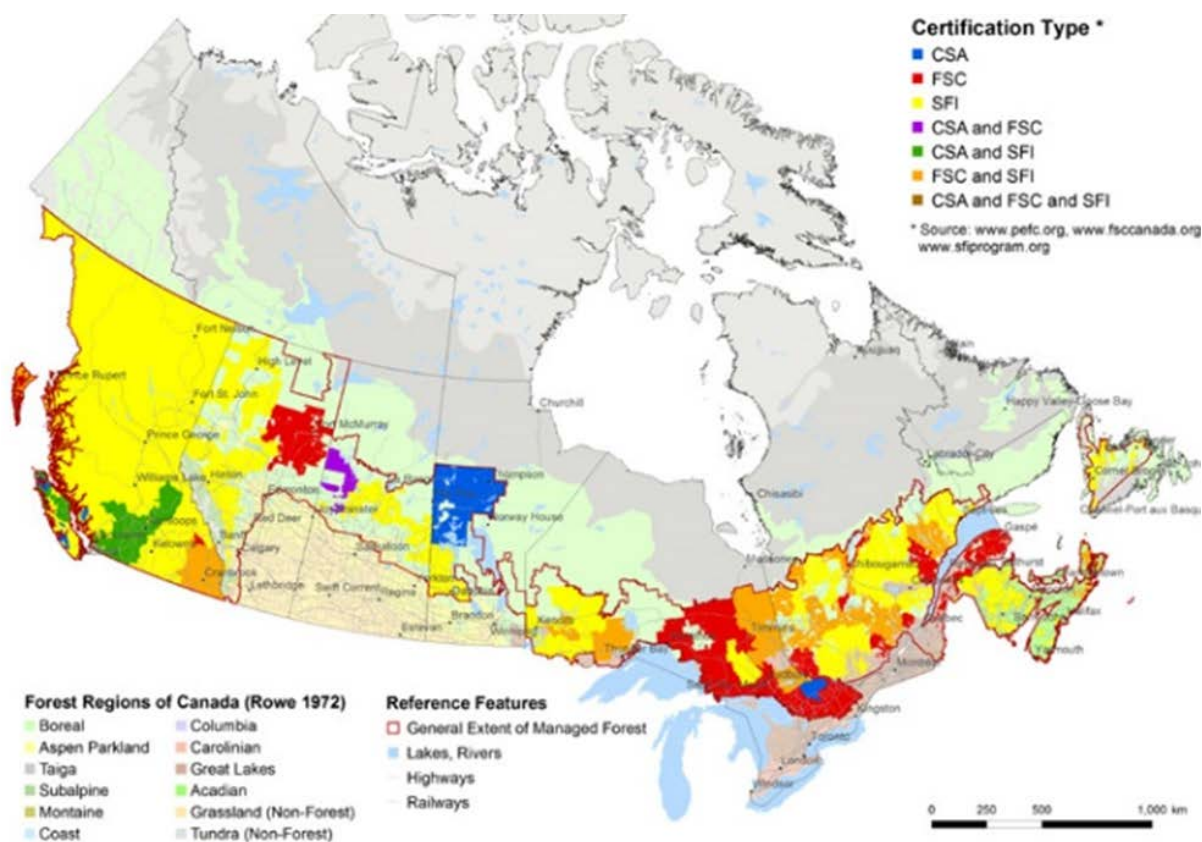
[Source: MCEC 2020]

<sup>a</sup> in practice alone



### 7.2.1 Third-Party Forest Certification

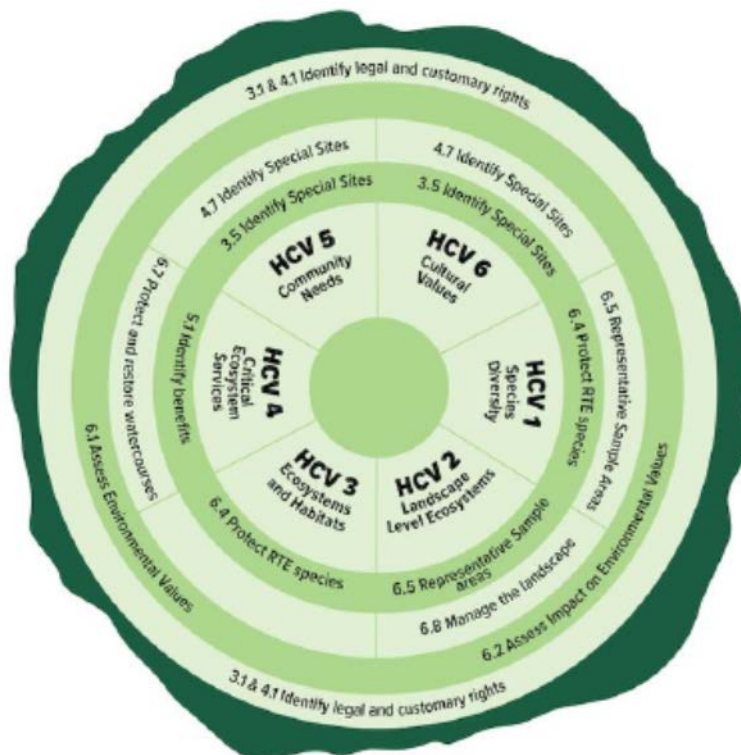
More than 168 million ha of forest management areas are third-party certified in Canada (Figure 7.4), representing the largest area of certified forests in the world (FPAC 2021). Independent organizations carry out forest certification; in Canada, these include the Canadian Standards Association, the Forest Stewardship Council (FSC), and the Sustainable Forestry Initiative® (SFI). Forest certification standards addressing economic, social, environmental, and technical aspects of forest management have been developed and are updated every five years to promote sustainable use of forest resources for all participants in the forest industry supply cycle. Third-party certification is oriented towards documenting that forestry companies operate in a manner that meets the comprehensive forest management laws and regulations in Canada, along with additional requirements incorporated in these voluntary certification schemes (NCASI 2014, 2021). Certification incorporates requirements associated with planning for adequate protection of biodiversity and contributing to conservation of rare, sensitive, and at-risk species, riparian systems, and water quality and quantity (NCASI 2011). For example, SFI's forest management standard promotes sustainable forestry practices based on 13 principles, 15 objectives, 37 performance measures, and 101 indicators (SFI 2015).



**Figure 7.4.** Areas Under Third-Party Forest Management Certification in Canada [Baldwin 2020]

Third-party certification of forests provides additional assurance that forestry companies manage ecologically important sites and habitat for species, and generally improve biodiversity conservation. For instance, SFI and FSC both address conservation at stand and landscape levels in assessing forests with exceptional/high conservation value, old-growth forests, and forests critical to managing for threatened and endangered species, as well as promoting forestry research, science, and technology (Brown and Senior 2014; SFI 2015; FSC 2020). FSC includes a requirement for an

assessment of areas of High Conservation Value (HCV) to establish management approaches that maintain or enhance these values (Brown and Senior 2014; FSC 2020). HCV is defined as “a biological, ecological, social or cultural value of outstanding significance or critical importance” and includes six categories (Figure 7.5).



- **HCV1 Species Diversity:** Concentrations of biological diversity including, endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.
- **HCV2 Landscape-level Ecosystems and Mosaics:** Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.
- **HCV3 Ecosystems and Habitats:** Rare, threatened, or endangered ecosystems, habitats, or refugia.
- **HCV4 Ecosystem Services:** Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.
- **HCV5 Community Needs:** Sites and resources fundamental for satisfying the basic necessities of local communities or Indigenous Peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or Indigenous Peoples.
- **HCV6 Cultural Values:** Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or Indigenous Peoples, identified through engagement with these local communities or Indigenous Peoples.

**Figure 7.5.** High Conservation Value Definitions and Forest Stewardship Council's Support for Protection throughout Its Principles and Criteria  
[adapted from Brown and Senior 2014; FSC 2020]

According to Brown and Senior (2014), good management practices require additional safeguards or protective measures to ensure HCVs' long-term maintenance, mainly if there is a risk of disturbance from activities in logging concessions, agricultural plantations, or other production sites. An example of this approach in Canada's boreal forest is provided in Table 7.2, and consists of setting aside a significant part of a management unit with buffer zones to maintain connectivity between larger HCV ecosystems outside the forest management area. This example highlights the potential for opportunities to evaluate portions of forest management areas as OECMs.

**Table 7.2.** Example of Management Objectives, Targets, and Management Strategies for Maintaining High Conservation Value 2 (Landscape-Level Ecosystems and Mosaics) in a Forest Management Area

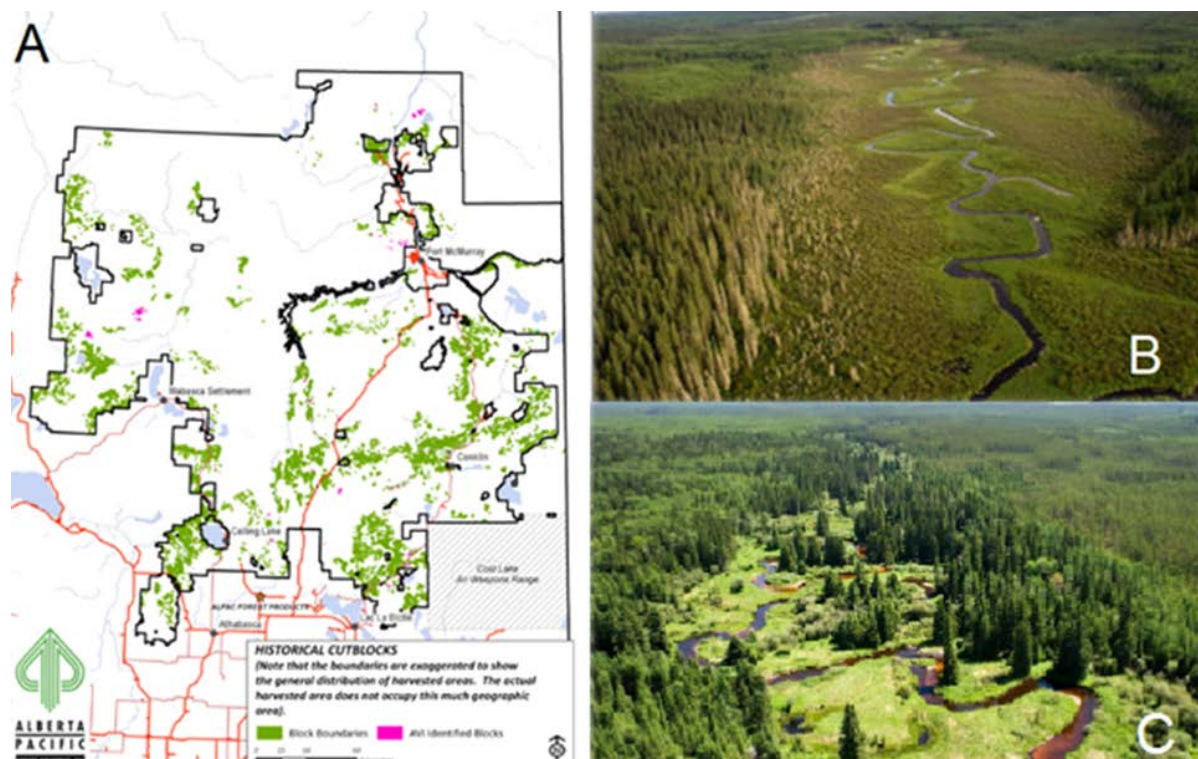
General HCV Management Objective	Specific HCV Management Objective	Management Targets	Management Strategies	
			Areas	Prescriptions
HCV 2: The significant ecosystems and mosaics with viable populations are maintained or enhanced. Their large size and connectivity are maintained. They are not fragmented. No species are lost as a result of management activities.	Maintain connectivity for large mammals in boreal forest ecosystem	Maintain 1 km wide corridor of HCV 2 ecosystem in management unit (connected to larger HCV 2 ecosystem outside the MU)	1 km wide habitat corridor connecting key HCV 2 habitat on either side of MU	No entry except for monitoring purposes No human activities or infrastructure (e.g., production activities, hunting) Regular anti-hunting patrols
		No fragmentation of HCV 2 conservation areas Core areas/ corridors used by target mammal species	Entire or major part of management unit	Set-aside substantial no logging core area(s) with buffer zones Use logging and other management practices reflecting natural disturbance regimes Standard Operating Procedures for road building and access

[Source: adapted from Brown and Senior 2014]

### 7.2.2 Potential for OECMs within Forest Management Areas

Additional conserved areas in Canada may meet the definition of a PA or an OECM but have yet to be assessed or recognized formally. Further, other areas may qualify as potential PAs or OECMs if certain aspects are addressed to meet Canada's OECM screening criteria. While sustainable forest management should be reported under Canada's Targets 6 and/or 7 (Table 3.2), this requirement pertains to areas actively managed for timber. There are additional areas within an FMA that are not available for harvest and are strictly managed for non-timber values (e.g., biodiversity, wildlife habitat, riparian buffers) and considered part of the passive landscape (i.e., classified as a set-aside). Bélanger, Roddy, and Baldwin (2020) recently estimated that approximately 52% of the area under an FMA in Canada is set aside for one or more conservation objectives, and thus could present a significant opportunity for lands that may meet the qualification criteria for OECMs.

For example, Alberta-Pacific Forest Industries, Inc. (Al-Pac), which operates in northeastern Alberta, maintains one of the largest FMAs (~6.4 million ha) in Canada. However, less than one-third of the total area has been verified as harvestable forest (Figure 7.6A; Al-Pac 2015). In other words, nearly 4.4 million ha are part of its passive landscape (68.8%), consisting primarily of wetlands, river valleys, waterbodies, steep slopes, PAs, provincial parks, riparian buffers, and black spruce bogs (Figure 7.6B and 7.6C). As a result, the industrial footprint is significantly less than would be assumed from examining the FMA map (Figure 7.6A). Al-Pac harvested 280,000 ha (the equivalent of 4% of the total area) between 1993 and 2016. Another example is Canadian Forest Products Ltd. (Canfor) in the Fort St. James, British Columbia, district forest. The total area covers 3.1 million ha, of which 2.9 million ha (91%) is part of the forest management land base. Approximately 735,000 ha of that land base are in set-asides for old-growth, wildlife habitat, riparian areas, and low productive forest that supports non-merchantable species or forest types or is inaccessible for timber harvesting (Canfor 2018).



**Figure 7.6.** Historical (25 year) Cut-Block Pattern Footprint throughout Alberta-Pacific Industries, Inc. Forest Management Area (A); examples of wetlands off limits to harvesting within Alberta-Pacific's forest management landscape (B) and (C) [adapted from Al-Pac 2015]

In addition to areas designated as set-asides by forestry companies, there may be operational constraints that either directly or indirectly influence how an FMA is being managed, including landscape features or economic factors (Table 7.3).

**Table 7.3.** Examples of Features that May be Present within a Forest Management Area that Can Reduce Land Base being Actively Managed

Protection/Conservation	Federal/Provincial/ Municipal Assignment	Alternative Land Uses	Natural Landscape Features	Economic Reasons
Protected areas Wildlife or habitat reserves/conservation areas Watershed conservation areas Old-growth management areas	Parks Military Recreational areas (trapping, hunting, fishing) Indigenous communities	Oil and gas Agriculture Mining Hydroelectric Highways, roads, railway, operational roads Settlements, cities, urban	Watercourses (e.g., lakes, rivers, streams) Slopes Riparian areas Wetlands Bogs River valleys	Unmarketable tree species Unmerchantable wood Unworkable land

Some features may provide effective in situ conservation over the long term, and thus could potentially be considered as OECMs. Given the high degree of variability across FMAs in Canada, types of set-asides may differ, which is likely to affect their candidacy as OECMs in each province.



These examples would need to be screened on a case-by-case basis to determine OECM suitability (Section 5):

1. **Inaccessible or low productivity forests.** Areas may exist within an FMA that are entirely inaccessible by on-the-ground harvesting machinery or where accessing the timber poses a significant safety risk to operators. These can include those that are too steep or that may become prone to unstable soil conditions during or after harvest (e.g., landslides) or that are water-dominated (e.g., wetlands, bogs, fens, muskeg). Managers may also identify opportunities to set aside areas with less productive forests or with undesirable/unmerchantable tree species and/or wood quality. These areas may also incorporate ecosystems that have lower tree densities and that would remain unharvested over the long term without significant management or financial commitment.
2. **Old-growth management areas (OGMAs).** An area that is maintained or managed for specific stand-level attributes common to old-growth forests may have potential for consideration as an OECM. For example, in British Columbia, OGMAs must be incorporated into FSPs because of legal requirements associated with operating on forested Crown land throughout the province. To date, one OGMA has been identified as an OECM in British Columbia (Table 6.2). Unfortunately, given the variety of definitions across biomes and jurisdictions there is no concise definition of what constitutes an old-growth forest (e.g., NCASI 2005; Berry, Lavers, and Mitchell 2018).
3. **Recreation and tourist areas.** Specific areas within a managed forest that have been set aside for camping, hiking, outfitting, and hunting may become candidates for OECMs. These areas are often found in close proximity to rivers, streams, or lakes, reducing the likelihood that industrial practices would modify these areas over the long term.
4. **Riparian zones.** Most provinces and territories restrict or prohibit tree harvesting near or around watercourses (e.g., lakes, rivers, streams, wetlands) (OMNR 2010; AB 2016; BC 2021a; QC 2021). While riparian zone management can vary by jurisdiction, the purpose is consistent: buffers around watercourses are retained to minimize post-harvest flooding or soil erosion by creating a network of buffers that can be beneficial in the long term for conservation of biodiversity. These areas may, therefore, have potential for classification as OECMs.
5. **Special management areas, wildlife or habitat areas, and reserves.** Wildlife or habitat areas are often mapped within FMAs to ensure that habitat requirements of an identified species or multiple species (e.g., woodland caribou, songbirds) are met and/or managed as a means of minimizing potential effects of forest harvesting on these species. These designations/reserves are established to limit the effects of management activities on a particular wildlife element and can represent a significant portion of the landscape. For example, as of 2019, British Columbia had established approximately 260,000 ha of wildlife management areas (BC 2021b).

These areas (and probably others not listed herein) can be possible candidate OECMs sites within FMAs.

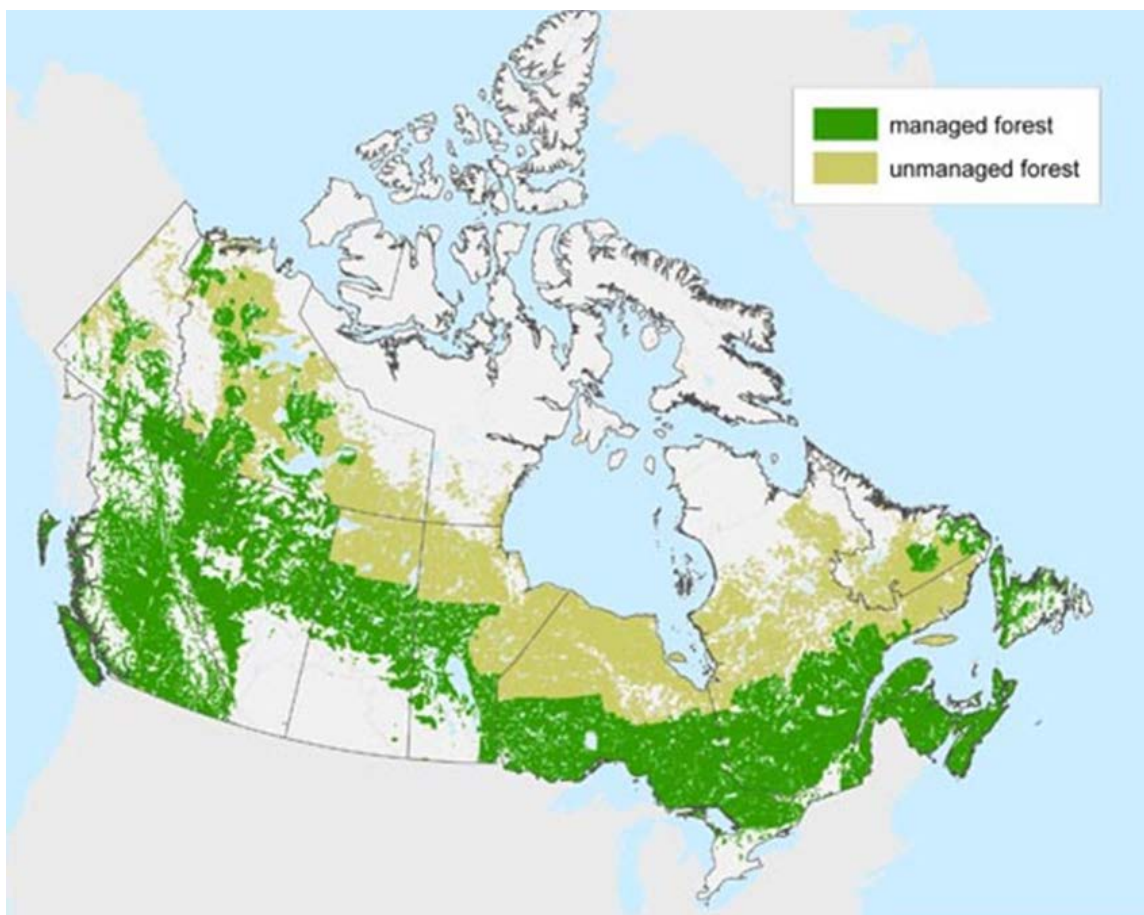
### 7.2.3 *Private Lands*

Although private lands represent a small proportion of forests in Canada (~6.2%), private land conservation is an increasingly recognized strategy globally to complement a PA network as either a PPA or an OECM (Capano et al. 2019; Palfrey, Oldekop, and Holmes 2020). Private initiatives may represent a significant contribution to the OECM network and, like public lands, can benefit biodiversity conservation (Mitchell et al. 2018). Moreover, private landowners may be more interested or inclined to screen candidate areas as OECMs because they can provide an excellent opportunity for public recognition, maintaining forest certification standards, and sharing in good

practices (Greene 2020). Another benefit of designating private lands as OECMs that may be of interest to landowners is that the designation does not commit landowners to specific monitoring or reporting requirements and minimal information about final sites is divulged publicly (e.g., site name, boundary, managing information) (ECCC 2021b). Ultimately, OECM implementation on private lands will depend on the individual landowner's willingness, making stakeholder engagement critical. Additionally, knowledge exchange and a better understanding of the screening process for OECMs are required. Finally, government incentives or grants/rewards may incentivize uptake among private landowners.

### 7.3 Non-Tenured Forests and Northern Regions of Canada

Canada's non-tenured (i.e., unmanaged<sup>14</sup>) forests also represent an extensive area (115 million ha) where many large PAs are located (Figure 7.7).



**Figure 7.7.** Managed and Unmanaged Forest Lands in Canada [NRCan 2021]

Unmanaged forests in northern Canada are generally exposed to harsher climate and growing conditions and reduced accessibility, making many of them already considered de facto protected

<sup>14</sup> In Canada, the area of unmanaged forest is calculated as the difference between managed forest and total forest as reported in The State of Canada's Forests annual report. Total areas of managed and unmanaged forest in Canada are included in the National Forest Carbon Monitoring, Accounting, and Reporting System (NRCan 2021).

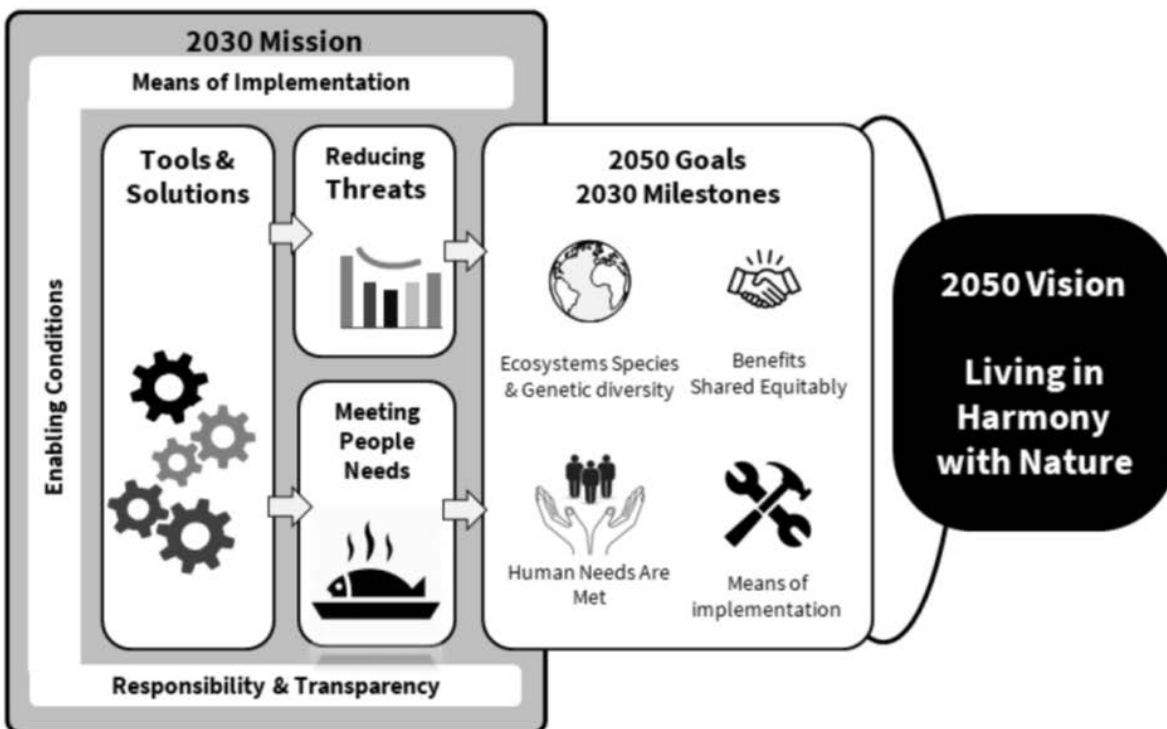
because they are minimally disturbed by human economic activity (Mittermeier et al. 2003; Andrew, Wulder, and Coops 2012; Wulder et al. 2018). As outlined by Wells et al. (2020), low anthropogenic pressure in Canada's north has maintained conservation of "long-distance mammal and fish migrations, healthy populations of large predators, one to three billion nesting birds, some of the world's largest lakes and North America's longest undammed rivers, massive stores of carbon and ecological functionality." These northern regions also offer greater opportunities for inclusion of more Indigenous engagement and governance through OECM designation. Mitchell et al. (2021) recently identified important areas for ecosystem services (e.g., carbon storage, freshwater, nature-based recreation) and evaluated how these areas align with Canada's current PAs and resource development tenures (e.g., oil and gas, logging, agriculture) in an effort to inform national-scale conservation. They found areas weakly overlapped (27 to 36%) with actual service-providing areas (Mitchell et al. 2021). These results further support the potential for additional OECM candidate sites, particularly in regions north of Canada's managed forest.

## **8.0 POST-2020 GLOBAL BIODIVERSITY FRAMEWORK AND IMPLICATIONS FOR OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURE DESIGNATION**

### **8.1 International**

The post-2020 global biodiversity framework will build on the Strategic Plan for Biodiversity 2011-2020 (Section 2) and sets out a plan to ensure that by 2050 a shared vision of living in harmony with nature is fulfilled (CBD 2020c). A comprehensive and participatory process is ongoing to address this vision. The process was undertaken by the Open-Ended Working Group on the Post-2020 Global Biodiversity Framework, in collaboration with the Co-Chairs and the Executive Secretary and with the oversight of the Bureau (CBD 2020c). As of September 2021, two official Post-2020 documents have been developed: (1) a discussion paper for the Post-2020 global biodiversity framework; and (2) a zero draft of the post-2020 global biodiversity framework that was originally released in January 2020 and was updated in August 2020. The zero draft contains a framework with four long-term goals for 2050 related to the 2050 Vision for Biodiversity, in which each goal is associated with the outcome for 2030 (Table 8.1). The proposed framework applies a "theory of change" approach recognizing the urgency to stabilize biodiversity loss by 2030 and to allow recovery of natural ecosystems in the subsequent 20 years to achieve the 2050 vision of living in harmony with nature (Figure 8.1).

Twenty action-oriented targets for 2030 have been identified that, if achieved, will contribute to meeting 2030 milestones and the outcome-oriented goals for 2050 (Table 7.3). Actions to reach these targets are to be implemented consistently and in harmony with the CBD and its protocols and other relevant international obligations, considering national socioeconomic conditions. As with previous strategic plans, countries will establish national targets/indicators aligned with this framework and progress towards the national and global targets will be periodically reviewed. By 2022 CBD participants should have the means to implement the framework for the 2020-2030 period (see Table 7.3, Goal D.1). A monitoring framework (CBD 2020d, 2020e) provides further information on indicators of progress towards the targets. The post-2020 global biodiversity framework was expected to be adopted at COP-15 scheduled for October 11 to 15, 2021, and April 25 to May 8, 2022 (originally scheduled October 15 to 28, 2020, but postponed in response to the COVID-19 pandemic). No update was available as of this report's publication date.



**Figure 8.1.** Theory of Change of Zero Draft of 2020 Global Biodiversity Framework [CBD 2020c]



**Table 8.1.** 2050 Vision and Goals and 2030 Goals and Action-Oriented Targets included in Post-2020 Global Biodiversity Framework

2050	
Vision	By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.
Goals	<ol style="list-style-type: none"> <li>1. The area, connectivity and integrity of natural ecosystems increased by at least [X%] supporting healthy and resilient populations of all species while reducing the number of species that are threatened by [X%] and maintaining genetic diversity</li> <li>2. Nature's contributions to people have been valued, maintained or enhanced through conservation and sustainable use supporting global development agenda for the benefit of all people;</li> <li>3. The benefits, from the utilization of genetic resources are shared fairly and equitably;</li> <li>4. Means of implementation are available to achieve all goals and targets in the framework.</li> </ol>
2030	
Mission	To take urgent action across society to put biodiversity on a path to recovery for the benefit of planet and people. <sup>a</sup>
Goal A	A.1 The area, connectivity and integrity of natural systems increased by at least [5%].
	A.2 The number of species that are threatened is reduced by [X%] and the abundance of species has increased on average by [X%].
Goal B	B.1 Nature contributes to the sustainable diets and food security, access to safe drinking water and resilience to natural disasters for at least [X%] million people.
	B.2 Nature is valued through green investments, ecosystem service valuation in national accounts, and public and private sector financial disclosures.
Goal C	C.1 Access and benefit sharing mechanisms are established in all countries.
	C.2 Benefits shared increased by [X%].
Goal D	D.1 By 2022, means to implement the framework for the period 2020 to 2030 are identified and committed.
	D.2 By 2030, means to implement the framework for the period 2030 to 2040 are identified or committed.

(Continued on next page. See notes at end of table.)

Table 8.1. Continued

Action-Oriented Targets	
Reducing threats to biodiversity	Target 1. By 2030, [50%] of land and sea areas globally are under spatial planning addressing land/sea use change, retaining most of the existing intact and wilderness areas, and allow to restore [X%] of degraded freshwater, marine and terrestrial natural ecosystems and connectivity among them.
	Target 2. By 2030, protect and conserve through well connected and effective system of protected areas and other effective area-based conservation measures at least 30 per cent of the planet with the focus on areas particularly important for biodiversity.
	Target 3. By 2030, ensure active management actions to enable wild species of fauna and flora recovery and conservation, and reduce human-wildlife conflict by [X%].
	Target 4. By 2030, ensure that the harvesting, trade and use of wild species of fauna and flora is legal, at sustainable levels and safe.
Meeting People's Needs through sustainable use and benefit-sharing	Target 5. By 2030, manage, and where possible control, pathways for the introduction of invasive alien species, achieving [50%] reduction in the rate of new introductions, and control or eradicate invasive alien species to eliminate or reduce their impacts, including in at least [50%] of priority sites.
	Target 6. By 2030, reduce pollution from all sources, including reducing excess nutrients [by x%], biocides [by x%], plastic waste [by x%] to levels that are not harmful to biodiversity and ecosystem functions and human health.
	Target 7. By 2030, increase contributions to climate change mitigation and disaster risk reduction from nature-based solutions and ecosystems based approaches, ensuring resilience and minimizing any negative impacts on biodiversity.
	Target 8. By 2030, ensure benefits, including nutrition, food security, livelihoods, health and well-being, for people, especially for the most vulnerable through sustainable management of wild species of fauna and flora.
	Target 9. By 2030, support the productivity, sustainability and resilience of biodiversity in agricultural and other managed ecosystems through conservation and sustainable use of such ecosystems, reducing productivity gaps by at least [50%].
	Target 10. By 2030, ensure that, nature based solutions and ecosystem approach contribute to regulation of air quality, hazards and extreme events and quality and quantity of water for at least [XXX million] people.
	Target 11. By 2030, increase benefits from biodiversity and green/blue spaces for human health and well-being, including the proportion of people with access to such spaces by at least [100%], especially for urban dwellers.
	Target 12. By 2030, increase by [X] benefits shared for the conservation and sustainable use of biodiversity through ensuring access to and the fair and equitable sharing of benefits arising from utilization of genetic resources and associated traditional knowledge.
(Continued on next page. See notes at end of table.)	

Table 8.1. Continued

Action-Oriented Targets (Continued)	
Tools and Solutions for Implementation and Mainstreaming	Target 13. By 2030, integrate biodiversity values into policies, regulations, planning, development processes, poverty reduction strategies and accounts at all levels, ensuring that biodiversity values are mainstreamed across all sectors and integrated into assessments of environmental impacts.
	Target 14. By 2030, achieve reduction of at least [50%] in negative impacts on biodiversity by ensuring production practices and supply chains are sustainable.
	Target 15. By 2030, eliminate unsustainable consumption patterns, ensuring people everywhere understand and appreciate the value of biodiversity, and thus make responsible choices commensurate with 2050 biodiversity vision, taking into account individual and national cultural and socioeconomic conditions.
	Target 16. By 2030, establish and implement measures to prevent, manage or control potential adverse impacts of biotechnology on biodiversity and human health reducing these impacts by [X].
	Target 17. By 2030, redirect, repurpose, reform or eliminate incentives harmful for biodiversity, including [X] reduction in the most harmful subsidies, ensuring that incentives, including public and private economic and regulatory incentives, are either positive or neutral for biodiversity.
	Target 18. By 2030, increase by [X%] financial resources from all international and domestic sources, through new, additional and effective financial resources commensurate with the ambition of the goals and targets of the framework and implement the strategy for capacity-building and technology transfer and scientific cooperation to meet the needs for implementing the post-2020 global biodiversity framework.
	Target 19. By 2030, ensure that quality information, including traditional knowledge, is available to decision makers and public for the effective management of biodiversity through promoting awareness, education and research.
	Target 20. By 2030, ensure equitable participation in decision-making related to biodiversity and ensure rights over relevant resources of Indigenous Peoples and local communities, women and girls as well as youth, in accordance with national circumstances.

[Source: CBD 2020c]

<sup>a</sup> In the 2030 Mission, “to take urgent action” reflects the need for action to be taken this decade to address the biodiversity crisis. “Across society” reflects the need for actions to be taken by all stakeholders, and for mainstreaming across sectors of society and the economy. “To put nature on a path to recovery” implies the need for positive action-oriented approach and the need for concerted and strategic action across a range of issues. It also implies the need for a stabilization in the rate of loss of biodiversity and enhanced protection and restoration while also recognizing that completely halting the loss of ecosystems, species and genetic diversity is not possible by 2030. “For the benefit of people and planet” highlights elements of nature’s contributions to people, makes a strong link to the delivery of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals while also recognizing the intrinsic and existential importance of biodiversity. The 2030 deadline articulates that this mission is a milestone on the way to the 2050 Vision of “living in harmony with nature” and reinforces the need for urgent action this decade.

## 8.2 Canada

In a mandate letter to the Minister of ECCC (December 13, 2019), Prime Minister Justin Trudeau outlined Canada's commitment to exceeding current 2030 targets and developing a net-zero emissions economy by 2050 (OPM 2019). He further outlined 17 priorities, of which five are identified as the most pertinent to forests and biodiversity:

- Support the Minister of Natural Resources to operationalize the plan to plant two billion incremental trees over the next 10 years, as part of a broader commitment to nature-based climate solutions that also encompasses wetlands and urban forests.
- Work with the Minister of Natural Resources to help cities expand and diversify their urban forests. You will both also invest in protecting trees from infestations and, when ecologically appropriate, help rebuild our forests after a wildfire.
- Advance Parks Canada's efforts to play a leadership role in natural and cultural heritage conservation and promotion, and work to ensure that Canada's national parks and national historic sites are a source of national pride and enjoyment today and for future generations.
- Work with the Minister of Fisheries, Oceans and the Canadian Coast Guard to introduce a new ambitious plan to conserve 25 per cent of Canada's land and 25 per cent of Canada's oceans by 2025, working toward 30 per cent of each by 2030. This plan should be grounded in science, Indigenous knowledge and local perspectives. Advocate at international gatherings that countries around the world set a 30 per cent conservation goal for 2030 as well.
- Continue to work to protect biodiversity and species at risk, while engaging with provinces, territories, Indigenous communities, scientists, industry and other stakeholders to evaluate the effectiveness of the existing SARA and assess the need for modernization.

Most notably, this letter articulated Canada's pledge to protect 25% of its land and ocean by 2025 and 30% by 2030. In addition, less than a year later (September 2020) Trudeau signed on to the Leaders' Pledge for Nature, committing Canada to "urgent and transformational actions" to reverse biodiversity loss by 2030 for sustainable development (Leaders Pledge for Nature 2020). Canada joined 83 other countries and the European Union to commit to taking urgent action to put nature on a path to recovery by 2030. The pledge contained ten actions, including "building clear political will through a transformational new global biodiversity framework, putting nature at the heart of COVID recovery, addressing climate change, and strengthening financial and non-financial support for implementation" (see full list of actions in Appendix F). Together, these commitments increase the urgency and importance of identifying additional areas to protect and/or conserve, including expansion of OECM designations and the PA/OECM network.

## 9.0 HURDLES TO IMPLEMENTING OTHER EFFECTIVE AREA-BASED CONSERVATION MEASURES IN FOREST MANAGEMENT AREAS

In addition to the potential pitfalls outlined in Section 5.3, several more hurdles may limit the uptake of OECMs in Canada:

- **Unclear terminology and lack of mechanisms.** OECM remains an ambiguous term (Section 3.2.1), and definitions associated with screening criteria have been met with pushback because of a lack of well-developed mechanisms (and acceptance) to meet national definitions and criteria.
- **Inter-organizational disconnect.** There is a level of disconnect between intergovernmental, private, and industrial entities concerning organizational priorities and/or initiatives. Because provincial and territorial governments oversee resource management in Canada (including how

forest management is implemented), strategic plans and final decision-making in the context of OECM application (Section 5.3) could lead to significant hesitation or indifference to addressing national policies.

- **Limited resources.** Organizations and interested stakeholders may lack financial support, staff time, and other resources or expertise (e.g., mapping, education, monitoring) to undertake effective area-based auditing for more complex candidate sites (e.g., forest set-asides) for conservation purposes. Training and time are required to interpret available resources.
- **Standard accounting.** Accurately accounting and screening OECMs may depend on individual auditors and their interpretations of specific definitions or criteria when using the DST. A more standardized system is required.
- **Inability to adapt to the future.** In the future, adaptive and active management approaches may need to be considered for application within the PA/OECM network because of the uncertainty surrounding a given site's long-term resilience and adaptability to potentially deleterious effects of climate change and natural disturbances (e.g., mountain pine beetle epidemic in the national parks of Alberta). As currently defined, these interventions would not be permitted in PAs or OECMs.
- **General distrust.** There is a general distrust of industry to do the right thing or to conserve lands over the long term, regardless of compliance with legislation and regulations established by federal and provincial governments. Furthermore, there is a general distrust of government officials and of national and international targets on the part of some landowners/groups. Together, this may jeopardize identification and designation of additional OECMs in Canada.

## 10.0 CONCLUSIONS

Canada has a long history of commitments towards safeguarding and conserving biodiversity. It recently developed its national strategy known as the 2020 Biodiversity Goals and Targets for Canada in response to commitment to the 2011-2020 Strategic Plan developed by the CBD. As part of that commitment, Canada established Target 1, which states: "By 2020, at least 17 percent of terrestrial areas and inland water, and 10 percent of coastal and marine areas, are conserved through networks of protected areas and other effective area-based conservation measures." The target is intended to increase the number and effectiveness of areas established for biodiversity conservation across the country, and includes a new conservation measure: OECMs. Uptake of OECMs has been extremely limited so far, with only three countries globally and only a few jurisdictions in Canada having officially designated OECMs. As a result, Canada has only partially satisfied its commitment to Target 1 (12.1% of terrestrial area and inland water and 13.8% of coastal and marine areas). The limited application of the OECM mechanism is probably due to unclear definition/terminology, inter-organizational disconnect, difficulty and inconsistency in the screening and accounting of candidate areas, and limited resources to undertake effective area-based auditing.

Canada's forest sector is interested in the potential value of contributing to the OECM network because the sector has long been interested in effective conservation of biodiversity over the long term within the lands it manages, and because there are significant set-asides within the managed forest that may qualify as OECMs. The industry actively manages a significant portion of Canada's forests (226 million ha), of which nearly half may remain part of the passive land base (i.e., set-asides). These types of set-asides (identified in Section 7.2.3) offer a potential first step in facilitating greater uptake of OECMs within the forested landscape. Ultimately, the proportion of these areas that could contribute to Canada's area-based biodiversity conservation commitments will depend on the screening of individual candidate sites, each of which is likely to be unique, and will require a significant long-term commitment and collaboration from all interested parties.

As Canada continues to increase its area-based commitments to conservation of biodiversity in the future, it is becoming increasingly clear that it will need to become much more open to what it

considers to be effective long-term management for biodiversity. As it stands, significant hurdles are inhibiting buy-in for the OECM approach. Increased training, knowledge and information exchange, and resources need to be allocated to a broader range of stakeholders who are invested in maintaining biodiversity within Canada's forests. Ultimately, Canada's achievement of successful conservation of biological diversity within its forests will hinge on active engagement and collaboration with the forest sector's full suite of stakeholders, including industry.

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## APPENDIX A

### RECOMMENDATIONS FROM THE INDIGENOUS CIRCLE OF EXPERTS IN *WE RISE TOGETHER* (ICE 2018)

#### Recommendation 1

**ICE calls on federal, provincial, territorial and Indigenous governments to endorse the concept of IPCAs outlined in this report:**

Indigenous Protected and Conserved Areas (IPCAs) are lands and waters where Indigenous governments have the primary role in protecting and conserving culture and ecosystems through Indigenous laws, governance and knowledge systems. Culture and language are the heart and soul of an IPCA. However, ICE also encourages Indigenous governments to develop and refine this proposed definition according to their local environments. To be clear, any level of government can propose an IPCA; but once there is agreement to proceed, Indigenous governments will take the primary role in deciding on all aspects of management and operations. This does not mean that an Indigenous government must take an exclusive role, as it is understood that different kinds of partnerships and supports may be required or sought depending on circumstances. However, it does necessitate a deliberate elevation of Indigenous governments in decision-making processes, with appropriate recognition.

#### Recommendation 2

**ICE encourages federal, provincial and territorial governments to work with Indigenous governments to support the development and implementation of IPCAs that count, when appropriate, toward Canada's biodiversity and protected area targets, including Target 1.**

#### Recommendation 3

**ICE calls upon federal, provincial and territorial governments to support the development of IPCAs beyond the Pathway to Target 1 timeline.**

Reconciliation is an ongoing process. ICE heard from many Indigenous governments that are interested in IPCAs, but need time to build their capacity and community vision first. In many cases, this will take time, pushing beyond the 2020 timeframe for Target 1.

#### Recommendation 4

▪ **ICE recommends that federal, provincial and territorial governments support IPCAs whether they count toward Target 1 or not.**

In many cases, IPCAs will be consistent with IUCN requirements for protected areas or “other effective area-based conservation measures” (OECMs); thus, they may contribute to Canada's targets under international agreements, such as the CBD (i.e., Aichi Target 11). However, not all IPCAs may contribute; and whether or not they contribute to Canada's biodiversity targets, they should be supported by federal, provincial and territorial governments and other stakeholders.

▪ **ICE calls on the Government of Canada to support and promote its definition of IPCAs internationally—such as under international designated areas of protection, including UNESCO designations like World Heritage and Biosphere Reserves—and with regards to processes and requirements in the context of IUCN and CBD.**

### Recommendation 5

**ICE recommends that federal, provincial, territorial and Indigenous governments recognize and support the potential of IPCAs to enable sustainable, conservation- based Indigenous economies to help diversify local economies.**

Sustainable economies within IPCAs can contribute to surrounding local economies. Many local communities remain heavily invested in non-renewable resource industries. IPCAs can contribute, rather than detract from, robust local economies by providing opportunities to diversify investments.

IPCAs can be part of a just transition away from boom/bust economic cycles to a more sustainable future, which in turn may contribute to stable and predictable investment opportunities.

### Recommendation 6

▪ **ICE calls on federal, provincial and territorial governments to acknowledge and address past wrongdoings— such as appropriating lands and waters from Indigenous Peoples, refusing to recognize the rights of Indigenous Peoples, and excluding them from access to their resources—in the establishment of parks and protected areas. In the spirit and practice of reconciliation, ICE therefore also calls on governments to work with affected Indigenous communities and their governments to determine appropriate action.**

When parks and protected areas were established in the past, significant injustices were done to Indigenous Peoples. Their lands were appropriated, and they were excluded from access to resources. ICE calls on federal, provincial and territorial governments to acknowledge these wrongs and determine appropriate action in the spirit and practice of reconciliation through discussion with Indigenous governments. Appropriate actions may include governments issuing formal apologies to Indigenous Peoples.

▪ **ICE calls on federal, provincial and territorial governments to develop collaborative governance and management arrangements for existing federal, provincial and territorial parks and protected areas.**

▪ **ICE recommends that federal, provincial and territorial governments support Indigenous-designed and -led cultural programs in existing parks and protected areas to educate the public (and where applicable, government employees) about Indigenous natural laws and stewardship. This can be done through Indigenous Peoples’ geographical, geographical, spiritual, social and economic connections to a given park or protected area.**

### Recommendation 7

**ICE recommends that federal, provincial and territorial governments enter into good faith discussions with Indigenous governments that have an interest in establishing IPCAs relating to, or coinciding with, parks and protected areas where there are not enough meaningful partnerships with Indigenous governments.**

Where parks and protected areas were established without Indigenous participation, consultation, or free, prior and informed consent, ICE urges governments to engage in building relationships and good faith dialogue with Indigenous Peoples through their chosen representatives. Such dialogue will contribute to reconciliation, address present challenges, and move toward a vision of strengthened relationships and self-determination.

### Recommendation 8

**For IPCAs or other protected areas already declared by Indigenous governments, such as Tribal Parks, ICE calls upon federal, provincial and territorial governments to formally**

**respond to and engage in good faith dialogue with Indigenous governments to explore appropriate recognition, level of protection and governance sought by the Indigenous government.**

ICE encourages federal, provincial, territorial and Indigenous governments to collaborate in developing innovative ways to find common ground and resolve disputes over land and waters that may arise from a proposal to create an IPCA.

### **Recommendation 9**

**ICE recommends that federal, provincial, territorial and Indigenous governments work together on an ongoing basis to review—and, where necessary, amend—protected area legislation, policies and tools to support IPCAs.**

ICE recognizes that, at the time of the release of this report, reviews of environmental and other legislation are underway. While some of these review processes may endeavour to address issues and matters relating to Indigenous Peoples, ICE encourages those leading such reviews to strengthen and enhance Indigenous involvement.

Indigenous governments that are interested in working with Crown governments to protect areas sometimes find it difficult to fit their vision and objectives for an area into the types of existing tools that governments have available. For example, parks legislation and policies often focus on protecting lands and waters from human influence, whereas from an Indigenous perspective, continued human presence on the land and water is seen as positive and essential, with humans considered an integral part of the land. As a result of western concepts of protection, parks legislation and policies are often restrictive in terms of the types of activities that can take place in parks and protected areas. Indigenous communities that are interested in continuing or pursuing certain activities, including small-scale economic activities, often find that existing parks frameworks do not accommodate the uses they envision.

Topics the joint reviews could consider include:

- recognizing Indigenous legal orders and governance authorities,
- creating IPCAs as a distinct category of protected area, and
- enabling mechanisms for a spectrum of IPCA governance models, including Indigenous governance and co governance models and agreements that allow for joint final decision-making powers between Crown ministers and Indigenous governments.

### **Recommendation 10**

**ICE recommends that federal, provincial and territorial governments use land withdrawals and other measures to prevent development and new third-party interests in IPCA candidate areas while those areas are being considered.**

Indigenous governments often struggle to protect lands and waters from industrial development while undertaking the community engagement and governance negotiation needed to establish an IPCA. Typically, a hold on development pressures is required for an area of interest to be considered.

### **Recommendation 11**

The nation-to-nation, government-to-government and Inuit-to-Crown relationship requires significant efforts related not only to time and resources, but also to approach. ICE urges federal, provincial and territorial governments to engage directly with communities in the pursuit of IPCAs due to their geographically specific nature, and to avoid an approach that limits engagement to national

Indigenous organizations or to provincial or territorial Indigenous organizations. Further, federal, provincial and territorial governments should approach relationship-building within the framework of ethical space, which includes the minimum standards set out in UNDRIP, the TRC's CTAs, the Canadian Constitution and Canadian jurisprudence, and Treaties, Agreements and Other Constructive Arrangements.

#### **Recommendation 12**

**ICE recommends that when building relationships by developing IPCAs, federal, provincial and territorial governments respect the diversity of protocols, preferences, relationships and self-determination of Indigenous governments and regions.**

#### **Recommendation 13**

**ICE recommends that federal, provincial and territorial governments adopt a flexible approach to collaborating with Indigenous governments and Peoples when identifying and protecting sacred or culturally important areas and cultural keystone species, whether they are in an existing protected area or an IPCA. Governments should not be bound by standard objectives and criteria in these matters.**

#### **Recommendation 14**

**ICE recommends that Indigenous governments develop IPCA indicators for success, including social, economic and cultural indicators.**

These indicators should be used to assess progress and outcomes that are in line with their IPCA objectives. An Indigenous government's standards and measurements of success could be based on community priorities and evolving circumstances as successes are reached. However, ICE suggests developing indicators related to the environment, reconciliation, revitalization of language, cultural practices, protocol and ceremony, job creation, sustainable livelihoods and social well-being.

#### **Recommendation 15**

**ICE calls on federal, provincial and territorial governments to acknowledge and respect the fact that Indigenous governments will use their own unique legal traditions and knowledge systems when establishing IPCAs.**

Indigenous legal traditions and knowledge systems are whole unto themselves and are defined and owned by Indigenous Peoples and their governments.

#### **Recommendation 16**

**ICE encourages philanthropic organizations and other NGOs to support and partner with Indigenous governments (and Indigenous NGOs, where applicable) and federal, provincial and territorial governments to develop, implement and manage IPCAs.**

In example after example of successful conservation initiatives involving Indigenous Peoples, a common element has been the involvement of the non-profit sector, such as philanthropic and environmental organizations. Whether serving as active partners in developing and implementing IPCA-type projects or sourcing funds and other resources to leverage support from government, non-profit organizations should be encouraged to join the collaborative process involved in creating IPCAs.



### Recommendation 17

ICE recommends that federal, provincial and territorial governments collaborate with Indigenous governments to support Indigenous land use planning, collaborative land use planning and governance models to support them.

Such plans and processes should identify and supply resources for equitable, effective and efficient collaborations leading to mutual agreements, land use recognition (including for IPCAs), and building/maintaining long-term relationships in the spirit of reconciliation. This should occur not just among federal, provincial, territorial and Indigenous governments, but with local governments, industry, environmental NGOs and other partners. Examples could include:

- Indigenous-led or collaborative land use planning at the watershed, landscape or traditional territory scale,
- full implementation of modern land claims agreements, • full implementation of shared decision-making models outside of protected areas, and
- reconciliation of existing land use plans between Indigenous governments and federal, provincial and territorial governments.

Such plans and processes may contribute to Canada Target 1 through the OECM designation while honouring the spirit and intent of the original Treaties.

### Recommendation 18

**• ICE recommends that federal, provincial and territorial governments take a more integrated approach to conservation and biodiversity that is consistent with Indigenous worldviews and tailored to what the land and water need locally and regionally.**

**• ICE recommends the full implementation and coordination of the other Aichi Targets and their related Canadian targets, notably (in the context of ICE's mandate) Aichi Targets 14 and 18:**

#### TARGET 14

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, Indigenous and local communities, and the poor and vulnerable.

#### TARGET 18

By 2020, the traditional knowledge, innovations and practices of Indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of Indigenous and local communities, at all relevant levels.

### Recommendation 19

**ICE recommends that federal, provincial and territorial governments facilitate and support cross-boundary (inter-national, provincial/territorial) conservation strategies as they relate to IPCAs.**

Since federal, provincial and territorial government boundaries separated long-existing Indigenous sovereign lands, Indigenous governments want to protect their territories that straddle international, provincial or territorial boundaries. There is a great opportunity for cross-boundary collaboration,

cooperation and reconciliation between all levels of governments through the creation of IPCAs that straddle political boundaries.

### **Recommendation 20**

**ICE encourages the federal government to enable, fund and build on Indigenous-led processes to examine IPCAs in the marine context.**

Any subsequent marine-focused IPCA process created to provide recommendations on marine IPCAs should emulate and learn from ICE processes within Pathway to Canada Target 1. In the interest of protecting and enhancing biodiversity, the marine-terrestrial components of the Aichi Targets should be viewed holistically by governments moving forward.

### **Recommendation 21**

**ICE calls upon federal, provincial and territorial governments, philanthropic organizations, academia, environmental NGOs and industry to support the capacity of Indigenous governments, communities and associated organizations to plan, establish and manage IPCAs and engage in conservation efforts more broadly.**

Examples of capacity-building requirements emerging from the Regional Gatherings for successful IPCAs include:

- promoting and restoring Indigenous languages and cultural competency/awareness, • supporting reconnection to the land and water whenever possible, especially for Elders, youth and women,
- undertaking a holistic approach to identifying capacity requirements,
- undertaking a whole-of-government approach and breaking down silos to increase transparency,
- fostering relationships through cross-cultural training, including Indigenous knowledge systems and western systems,
- recognizing the importance of Indigenous ceremony on the land and water and its relation to building capacity,
- facilitating access to information and data held by federal, provincial and territorial governments about the lands and waters being managed while respecting culturally sensitive information,
- providing space for Indigenous governments to identify their capacity needs,
- creating safe spaces to share capacity and leverage collective knowledge,
- sharing resources across Indigenous communities, and
- providing capacity rooted in local Indigenous knowledge systems and ensuring that federal, provincial and territorial governments understand and value the importance of such local systems of knowledge

### **Recommendation 22**

**ICE encourages federal, provincial, territorial and Indigenous governments to work together to support the development of on-the-land programs (e.g., guardian programs or similar community-based initiatives) for the development and management of IPCAs.**

Many existing guardian programs are designed to steward Indigenous territories and transmit Indigenous knowledge. Guardians should be permitted to exercise their authority, where appropriate, to enforce Indigenous and Crown laws within IPCAs and to help create land use and/or watershed

governance area plans—and in some cases, to work alongside Crown staff in managing the operations of existing protected areas.

### **Recommendation 23**

**ICE recommends creating a network of IPCA managers, supported by an Indigenous-led national coordinating body in partnership with federal, provincial and territorial governments, to support the capacity, development, implementation and success of IPCAs now and beyond 2020.**

This coordinating body could play a major role in establishing a network of IPCA managers or its equivalent to facilitate the sharing of tools, resources, best practices and lessons learned. A consistent message emerged from the Regional Gatherings: Indigenous Peoples see the need for formalized mechanisms to support the work of IPCAs across the country. One example might be the formation of a national coordinating body.

Photographer: Susan Mather

An “ICE 2.0” would consider and put forward recommendations on the creation of such a coordinating body to support consistency across the federal, provincial and territorial government spectrum. This will also encourage the sharing of advances made in one area to contribute to the consistent growth and improvement of IPCAs across Canada (the “We rise together” approach).

### **Recommendation 24**

**Further to TRC Call to Action #57, ICE calls upon federal, provincial and territorial governments to educate and create mandatory skills-based training relevant to the local context for staff in intercultural competency, conflict resolution, human rights and anti-racism.**

This will develop and strengthen positive relationships between Indigenous Peoples and federal, provincial and territorial government staff. Training programs should be developed and delivered in collaboration with local and Indigenous partners.

Orientation, relationship-building and cross-cultural competency are important when different worldviews come together. Bridging methods and tools are needed if all parties are to learn how to work together respectfully.

### **Recommendation 25**

**ICE recommends that federal, provincial, territorial and Indigenous governments collaborate with educational institutions to support and encourage further research and capacity-building in IPCAs, such as with respect to the impacts and mitigation of climate change.**

IPCAs can be “beacons of teachings”: spaces for higher education research focusing on the recovery and revitalization of Indigenous knowledge systems and rooted in the guidance and teaching of Elders.

### **Recommendation 26**

**ICE calls on federal, provincial, territorial and Indigenous governments, and conservation partners, to provide or facilitate secure multi-year funding for the planning, development and management of IPCAs.**

Traditional capacity and funding models rely on Crown governments as the sole financial providers for Indigenous capacity-building programs. In many cases, this has resulted in rigid, overly bureaucratic, unreliable funding on a year- to year basis. For IPCAs, which require a long-term

commitment to conservation and relationships, a more streamlined, predictable and flexible funding model is required.

Some IPCAs may be able to secure funding by partnering with philanthropic organizations, environmental NGOs or Indigenous governments looking to partner and support IPCAs. Other IPCAs may be able to secure funding through revenue-generating activities, such as user fees. These mechanisms will not be viable for all IPCAs, and some will take time to develop. Therefore, funding commitments from federal, provincial and territorial governments will be required to ensure the success of IPCAs until they become self-sustaining.

### **Recommendation 27**

**ICE recommends that federal, provincial and territorial governments and Indigenous governments continue to support the work of ICE going forward to help guide the implementation of these recommendations.**

The ICE process has resulted in positive work, learnings, expertise and relationships among members and participants at Regional Gatherings. There is an opportunity to maintain the resulting momentum. Consideration should be given to establishing a national body on IPCAs to support Indigenous governments and local non-Indigenous communities in creating and implementing IPCAs, upon request. This could be accomplished by continuing or modifying the ICE initiative, with supporting mechanisms such as “Regional ICE bodies” and an Elder and youth advisory body. Roles and outputs could include:

- conducting a thorough national review through engagement, research, and communication of current and ongoing Indigenous-led conservation initiatives to further enhance understanding of the conservation landscape in Canada,
- engaging with Indigenous governments to assess on their interest in establishing IPCAs,
- exploring and identifying potential funding models to support successful IPCAs,
- engaging other partners who can contribute to the success of IPCAs, such as universities, non-profit organizations (including environmental NGOs and philanthropic bodies), industry and municipal governments (could include the Indigenous Leadership Initiative’s Guardian program),
- creating a multi-media toolkit for jurisdictions (drawing on existing tools like the Land Code) with a focus on improving protected and conserved areas and future IPCAs,
- participating in international dialogues on conservation and IPCAs (along with other Indigenous IPCA experts), and
- continuing to follow up with participants from previous gatherings and providing targeted support upon request.

### **Recommendation 28**

#### **Immediate Actions**

1. Federal, provincial and territorial governments should support ICE to conduct communication and outreach directly with these governments, Indigenous governments, and potential non-government partners after the ICE Report is released to support the process of building IPCAs.
2. ICE should be supported to host a National Gathering on IPCAs in 2018 for a commencement and ceremony to honour the work completed and work ahead.

3. ICE should be expanded to include youth advisers (such as from the Youth Climate Advisory Body, or some other youth-oriented group focused on topical environmental issues) and Elder advisers.



## **APPENDIX B**

### **RECOMMENDATIONS FROM THE NATIONAL ADVISORY PANEL IN CANADA'S CONSERVATION VISION (NAP 2018)**

#### **Recommendation 1**

We recommend that all governments in Canada adopt a shared conservation vision that

- recognizes Canada's globally significant natural values, and also our cultural values that align with conserving Nature;
- embraces Indigenous world views that acknowledge we are one species among many that share the Earth with the rest of life;
- achieves our collective conservation goals within a framework of reconciliation and the creation of ethical space;
- affirms that a core strategy for conserving biological diversity is an interconnected network of protected areas and OECMs, integrated into the wider landscape; and
- supports Canada in becoming a global leader in living harmoniously with Nature.

#### **Recommendation 2**

We support the recommendations of the House of Commons Standing Committee on Environment and Sustainable Development in their report on protected areas and, in particular, "that the Government of Canada set even more ambitious targets for protected areas than those established in the Aichi Target 11."

#### **Recommendation 3**

We recommend that Canada create a new nature conservation architecture consisting of a new federal Nature Conservation Department, a Pan-Canadian Agreement for Nature Conservation, and a Nature Conservation Advisory Council, enabled by a new federal Act.

#### **Recommendation 4**

We recommend that provincial and territorial governments also streamline responsibilities for conservation within one department that aligns with Canada's obligations to the UN Convention on Biodiversity (CBD).

#### **Recommendation 5**

We recommend that the federal government move immediately to create a Nature Conservation Department with the following aims and responsibilities:

- To ensure that Nature is effectively conserved in Canada and that our international obligations under the CBD are met on an ongoing basis
- To oversee all areas of federal jurisdiction relating to nature conservation, including protected areas such as national parks, wildlife sanctuaries, and marine protected areas, as well as those managed by other federal agencies, like the National Capital Commission

- To lead nationwide delivery on CBD obligations and provide knowledge support and funding to other levels of government and partners to enable them to meet international standards and commitments
- To support the Pan-Canadian Agreement for Nature Conservation (See Recommendation 6.).

### **Recommendation 6**

We recommend that federal, provincial, and territorial governments enter into a Pan-Canadian Agreement for Nature Conservation: an interjurisdictional political commitment to achieving Canada's biodiversity conservation commitments, starting with Aichi Target 11–Canada Target 1. We also recommend that there be an ongoing intergovernmental ministers council focused on implementing the Agreement in a framework of reconciliation, and building on the Pathway to Canada Target 1 process. (The proposed elements of this agreement are articulated in Recommendation 1.).

### **Recommendation 7**

We recommend the creation of a Nature Conservation Advisory Council of thought leaders, with equal membership of Indigenous and non-Indigenous appointees and supported by a budget and secretariat that is independent of the Nature Conservation Department. The Nature Conservation Advisory Council would advise governments and report to Canadians at least every two years on Canada's progress on (1) achieving our collective conservation goals and responsibilities within a framework of reconciliation, and (2) creating ethical space for the integration of Indigenous knowledge systems and Western scientific approaches.

### **Recommendation 8**

We recommend that the Government of Canada work with all jurisdictions to review protected areas and OECMs for consistency with IUCN definitions and guidance, and to rigorously apply these definitions and guidance in their reporting. This should be done through a transparent public process coordinated by the new federal Nature Conservation Department. Private, comanaged, Indigenous, Crown, and local government protected areas and OECMs should all be counted when they meet the IUCN definitions and guidance. The Government should appoint an external advisory committee to assist with this work, and to make publicly available their recommendations for upgrading protection of areas, where necessary for them to meet the IUCN definitions and guidance.

### **Recommendation 9**

We recommend that the mandate of the Office of the Auditor General of Canada be modified to include tracking and reporting every two years on the performance of all federal aspects of the new nature conservation architecture, and CBD obligations, including adherence to international standards, and that the Office be provided with the resources to do so. We further recommend that equivalent provincial and territorial auditors general be given a similar mandate to track performance.

### **Recommendation 10**

We recommend, by 2019, the completion of a gap analysis of existing protected areas and OECMs in Canada to inform the identification of future protected areas and OECMs needed to fulfill the representation, connectivity, and key areas for biodiversity elements of Aichi Target 11–Canada Target 1 and long-term conservation goals.

### **Recommendation 11**

We recommend that jurisdictions utilize the Canadian Ecological Framework as an equivalent comparative framework to guide ecological representation in conservation planning.



### **Recommendation 12**

We recommend that, by 2020, Canadian ecoregions should be the basis for determining and reporting on ecological representation at the national level. We further recommend that Canadian ecoregions (circa 1996) be updated to ensure alignment with Canadian ecozones (circa 2014).

### **Recommendation 13**

We recommend that all jurisdictions in Canada apply the global IUCN Key Biodiversity Area (KBA) standard to identify globally significant areas of importance for biodiversity. We further recommend that jurisdictions work together and with partners to develop and apply a Canadian standard, consistent with this global standard, to identify nationally significant areas of importance for biodiversity to inform conservation planning.

### **Recommendation 14**

We recommend that the federal government lead the development, by 2020, of a nationwide ecological connectivity strategy. The strategy will be based on science and Indigenous knowledge, involve collaboration with partners, and contain the following actions:

- Evaluate the current status of ecological connectivity in terrestrial and freshwater ecosystems, and identify priorities for action appropriate to each ecosystem and regional context (part of the gap analysis referenced in Recommendation 10).
- Define measures and standards for assessing connectivity at multiple scales. - Use structural connectivity indicators at the national scale to evaluate the current network and to plan for new protected areas and OECMs. - Elaborate functional connectivity indicators for focal species to establish management targets at regional and local scale.
- Invest in existing ecological connectivity initiatives in Canada. • Reflect climate change considerations.
- Consider the emerging IUCN Connectivity Conservation Area guidelines.
- In areas without transborder connectivity initiatives, investigate opportunities for developing connectivity initiatives across borders within Canada and with the United States.

### **Recommendation 15**

We recommend that all jurisdictions apply management effectiveness assessments according to CBD guidance, and commit to having 60 percent of protected areas and OECMs assessed for effective management by 2020 and 100 percent assessed by 2030. Management effectiveness should be measured both at the network scale and the site-specific scale every five years. Canada should report results to the World Database on Protected Areas.

### **Recommendation 16**

We recommend that to achieve effective management, protected areas and OECMs have ecological integrity monitoring programs that are based on Western science and Indigenous knowledge and, where possible, include Indigenous Guardians and other stewardship initiatives in their implementation.

### **Recommendation 17**

We recommend that the relevant government assure equitable distribution of costs and benefits of protected areas by mitigating costs and risks; sharing benefits fairly; addressing barriers to accessing

benefits that may exist for marginalized groups; and assuring a broad understanding of the benefits, costs, and risks, while balancing the broader national interest.

#### **Recommendation 18**

We recommend that Aichi Target 11–Canada Target 1 be achieved primarily through protected areas. OECMs could be used to complement protected area networks and may play a greater role post-2020.

#### **Recommendation 19**

We recommend that to achieve the short-term quantitative target of 17 percent protection by 2020, governments should start by completing protected area proposals and commitments already underway. To fill the remaining gap, ongoing landscape-level planning initiatives may provide opportunities to protect more areas: for example, Indigenous-led land-use planning, forest management planning, non-governmental conservation planning initiatives, and plans to protect critical habitat for caribou and other recovery planning for species at risk. In all cases, protected areas and OECMs should be created within a framework of reconciliation, including through free, prior, and informed consent of Indigenous peoples.

#### **Recommendation 20**

We recommend that all jurisdictions fund and actively encourage the use of all legal and policy mechanisms supporting Indigenous participation in establishing and managing protected areas.

#### **Recommendation 21**

We recommend that federal, provincial, and territorial governments engage in ethical space with Indigenous governments and peoples to develop new legal and policy mechanisms for Indigenous protected areas and OECMs that meet international standards for protecting areas over the long term, and that public funding be designated for the establishment and management of these areas.

#### **Recommendation 22**

We recommend that federal, provincial, and territorial governments engage in ethical space with Indigenous governments and peoples to reconcile Western and Indigenous legal mechanisms with the goal of establishing and supporting IPAs at all levels, including by promoting the use of existing legal and policy mechanisms and creating additional supportive tools where needed.

#### **Recommendation 23**

We recommend that the experience of engaging in ethical space to support Indigenous protected areas, along with associated Indigenous principles and values, should be applied to all existing and projected protected areas in Canada, as these are effective tools for reconciliation with each other and Mother Earth, and because each protected area has a place on the spectrum of Indigenous-Crown governance models.

#### **Recommendation 24**

We recommend that systems be put in place so that protected areas, including Indigenous protected areas, build Indigenous capacity for management and meaningful operational participation on the land, prioritizing Indigenous ways of connecting with the land as a long-term strategy to conserve biodiversity.

#### **Recommendation 25**

We recommend that all forms of protected areas and OECMs explicitly promote cultural exchange and understanding, leading to engagement in ethical space for conservation decision-making.

### **Recommendation 26**

We recommend that the following key principles of landscape-level conservation planning be adopted by all jurisdictions:

- Understand and obtain clear evidence about what is needed to maintain ecological integrity and function at the local, regional, and national levels, and incorporate findings into conservation planning and management, and sustainable development.
- Commit to working on a nation-to-nation or Inuit-to-Crown basis with Indigenous peoples, including valuing both Indigenous and non-Indigenous ways of knowing and creating an ethical space to reconcile people and Nature.
- Understand the value of the land (ecological, traditional, spiritual, and socioeconomic), and ensure that the significance of different values are considered in conservation planning.
- Use all legal and policy instruments, innovative technologies, and creative partnerships to meet conservation objectives.

### **Recommendation 27**

We recommend the Government of Canada and also provincial, territorial, and Indigenous governments and governance bodies place priority on landscape-level conservation planning across Canada.

### **Recommendation 28**

We recommend identifying and prioritizing opportunities for landscape-level conservation in areas of national and hemispheric importance to conservation and connectivity, such as Prairie grasslands, the Hudson and James Bay Lowlands, Canada's Northwest Passage, the Mackenzie Basin, the Yellowstone-to-Yukon region, the Algonquino-Adirondacks region, and the Northern Appalachians-to-Nova Scotia region.

### **Recommendation 29**

We recommend that federal, provincial, and territorial governments enact means to protect aquatic ecosystems through the development of a pan-Canadian water strategy.

### **Recommendation 30**

We recommend all jurisdictions investigate designations such as Heritage Rivers, Ramsar wetlands, Biosphere Reserves, with the aim to determine how strengthening the protection associated with such designations may provide opportunities for Canada to meet our Convention on Biological Diversity targets.

### **Recommendation 31**

We recommend that a special emphasis be applied to identifying and supporting the various ways Canadians can act to advance protected areas and OECMs within their spheres of influence. We further recommend that Pathway to Canada Target 1 support and celebrate the contributions of civil society and private interests, as well as governments, to effective, well-connected networks of protected areas and OECMs.

### **Recommendation 32**

We recommend that federal government funding programs include support for municipal and regional government protected areas and OECMs that meet international standards as well as landscape-level planning, particularly to address connectivity.

### **Recommendation 33**

The NAP recommends additional federal investment for nature conservation that includes the following priorities:

#### **Federal action**

1. Federal “house-in-order.” \$100M over three years and \$50M per year ongoing to support getting the federal house in order to lead a nationwide effort to conserve biodiversity in the long term; includes establishing a new Act, Nature Conservation Department, and Nature Conservation Advisory Council and Secretariat
2. Federal protected areas. \$94M per year ongoing for establishing new national parks and national wildlife areas by 2020, and improving management of existing federal protected areas; also a one-time \$50M investment to resolve third-party interests in proposed protected areas
3. Federal leadership. \$6M per year, ongoing to support federal leadership and collaboration among government and non-government partners, and policy/ legislative upgrades
4. Connectivity strategy. \$3M per year for three years to develop a nationwide ecological connectivity strategy, with government and nongovernment partners Incentives for other government and non-government action
5. Other government new protected areas and OECMs. \$120M per year ongoing for a fund to support planning, establishment, and management of new protected areas and OECMs by provincial, territorial, municipal, and Indigenous governments; to be fully funded for Indigenous governments and cost-shared for provincial, territorial and municipal governments
6. Capacity building for Indigenous protected areas (IPAs). \$200M per year ongoing to support capacity building and necessary legal and other institutional arrangements to support Indigenous protected areas; including Guardians and other IPA capacity-building initiatives
7. Privately protected areas. \$50M per year for NGO’s and others to protect private lands
8. Resolving third-party interests. \$100M one-time investment for resolution of third-party interests to enable establishment of protected areas
9. Coordinated conservation policy framework. \$50M over three years to support development of a Canada-wide, coordinated, conservation policy framework and agreement that aligns with Convention on Biological Diversity and United Nations Declaration on the Rights of Indigenous Peoples
10. Planning for conservation. \$200M over five years and \$50M per year ongoing to support regional planning initiatives focused on identifying conservation needs and based on Western science and Indigenous knowledge
11. Effective management. \$30M over three years to assess management effectiveness for existing protected areas; ramped-up funding (to \$250M per year) to support management upgrades and meet standards
12. Public engagement partnerships. \$20M per year ongoing to support a partnership fund with the goal of engaging the public in conserving Canada’s land and inland waters

13. Knowledge centres. \$130M over three years and \$100M per year ongoing to support five university-based Conservation Knowledge Centres (focused on conservation practices that integrate Western science and Indigenous knowledge), and a TriCouncil (NSERC, SSHRC, CIHR) Strategic Research Network program

#### **Recommendation 34**

We recommend the federal government explore innovative financing mechanisms to help fund nature conservation across Canada, including the idea of Nature Conservation Bonds.

#### **Recommendation 35**

We recommend Canada's landscape-level planning include consideration of how to maximize the protection, maintenance, and enhancement of carbon-rich ecosystems, and that Canada allocate funding earmarked for climate change mitigation and adaptation for this purpose.

#### **Recommendation 36**

We recommend that Canada develop a carbon inventory based on the best available science and monitoring, and that counts terrestrial and aquatic carbon exchanges as part of Canada's commitment to climate change: for example, an enhanced carbon budget model that builds upon the carbon budget model developed by Natural Resources Canada.

#### **Recommendation 37**

We recommend that all jurisdictions include in their climate change adaptation strategies an objective of completing networks of well-connected protected areas and OECMs that contain climate change refugia. Climate adaptation funding should be allocated to help deliver on this objective.

#### **Recommendation 38**

We recommend that research is commissioned and funded and that adaptive management tools are developed, disseminated, and applied to better understand and accommodate species range shifts in the face of climate change.



## APPENDIX C

### DECISION SUPPORT TOOL SCREENING CRITERIA EXAMPLE

Canadian Forces Base Shilo. [https://www.conservation2020canada.ca/s/EN\\_Canadian-Force-Base-Shilo.docx](https://www.conservation2020canada.ca/s/EN_Canadian-Force-Base-Shilo.docx) [March 1, 2021]

#### Decision Support Tool – Screening Criteria

All criteria in Tables 1 and 2 of the Decision Support Tool are intended to help practitioners determine whether an area meets the Pan-Canadian standards and is therefore eligible to be reported as a Protected Area or an “Other Effective Area-based Conservation Measure” (OECM) under the pan-Canadian standards. Criteria in Table 1 apply similarly to both Protected Areas and OECMs. Criteria in Table 2 help to both define and distinguish between Protected Areas and OECMs. All criteria in Table 2 must be met at the PA level for an area to be reported as protected, or at the OECM level or combination of OECM and PA levels for an area to be reported as an OECM. **This template is intended to be used in conjunction with the decision support tool and detailed interpretation guide.**

BASIC INFORMATION	
Name of Site	Canadian Forces Base Shilo
Designation	Canadian Forces Base
Province/Territory	Manitoba
Year of Establishment / Securement	In 1910 Dominion of Canada's Militia Department acquired land within the former Spruce Woods timber reserve. The current area of the base was established as a regular army base in October 1946.
Area (ha)	23,061 ha
Management Authority	<i>e.g. for FPT governments: provide government, department and division/branch</i> Department of National Defense (DND)
Explanation of Management Authority (optional)	<i>Only provide description if management authority is very complex or not well understood. This is not necessary for most sites.</i>
Governance Type (CPCAD type)	Government - federal
Legal Basis / mechanism(s)	Acceptance of a Transfer of Administration and Control from Her Majesty in Right of a Province. Order in Council No. 429/2013 (Lease Agreement between Manitoba and Canada)
Explanation of legal basis / mechanism(s) (optional)	<i>Only provide description if legal basis or mechanism(s) is very complex or not well understood. This is not necessary for most sites</i> The OIC stipulates that DND shall develop and maintain an environmental protection plan, known as the Canadian Forces Base Shilo Long Term Natural Resources Management Framework.
Summary of Essential / Relevant natural, social and cultural values	<i>Maximum 3-4 sentences intended to provide overall site context and connection to in-situ conservation of biodiversity</i> CFB Shilo as a whole supports a wide-range of military training by both home and visiting units. Training consists of small arms, grenades, artillery, rocketry, air weapons, tank and anti-tank firing. <b>Areas A and B and 1, 2 and 9</b> are areas that are intensely utilized for training and may contain significant infrastructure that make the sites incompatible with the conservation of biodiversity. These areas are not being considered in this case study or for reporting. <b>Areas C through F and 3 through 8</b> of CFB Shilo that are the focus of this case study are natural habitats that are relatively undisturbed and support plant and wildlife communities in mostly pristine conditions. The site is located on the outwash plain of glacial Lake Agassiz, and contains four different plant communities: mixed-grass prairie, deciduous forest, mixed-forest, and tamarack-black spruce wetland. The habitat distribution within the base area is close to what would be expected naturally. Other areas surrounding the base have been experiencing aspen encroachment and loss of open sand and prairie habitat due to lack of



	<p>wildfire and natural disturbance, such as grazing by large bison herds. The management plans indicate awareness of this issue and an intent to take preventative measures to protect the natural habitat proportions.</p> <p>CFB Shilo is adjacent to Douglas Marsh Provincial Forest and Spruce Woods Provincial Park, both of which have considerable portions of their land base protected.</p> <p>Shilo Environmental Advisory Committee was established in 1974. It is a committee that connects researchers from Universities, Manitoba Sustainability, Environment and Climate Change Canada, Manitoba Environment, MB Parks, Nature Conservancy of Canada, Conservation Data Centre with military members from our G3 branch (Operations and Training) and Base Environment Officer and Base Biologist.</p>
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TABLE 1: STANDARDS COMMON TO PROTECTED AREAS AND OECMS				
CRITERIA:	INTENDED EFFECT OF THE CRITERION	SCREENING CHOICE	EVIDENCE-BASED RATIONALE Rationale/evaluation of how area meets or does not meet the intended effect of the criterion	MEETS INTENDED EFFECT?
<b>GEOGRAPHICAL SPACE</b>	Demarcates the area to facilitate the in-situ conservation of biodiversity.	A. The geographical space has clearly defined and agreed-upon borders.	Legal boundaries are shown on a plan filed in the office of the Director of Surveys at Winnipeg as No. 19596. The boundaries of CFB Shilo are signed and fenced and the shapefile is publically available for free on the Manitoba Land Initiative website. The boundary for each Area is delineated as shapefiles, on maps, and on ground through fireguards and trails.	Yes
<b>EFFECTIVE MEANS – 1</b>	Activities incompatible with the in-situ conservation of biodiversity do not occur and compatible activities are effectively managed.	A. The mechanism(s) provide(s) the ability to prevent incompatible activities and manage all other activities within the area, such that the in-situ conservation of biodiversity can be achieved	The OIC gives the Department of National Defence sole jurisdiction over the base and therefore DND has the power to manage all activities in the area, including those that are likely to have impacts on biodiversity. Any access to the subsurface would be dependent on a negotiated mutually acceptable access agreement.	Yes
<b>EFFECTIVE MEANS – 2</b>		B. The mechanism(s) does/do not compel the authority(ies) to prohibit activities incompatible with the in-situ conservation of biodiversity but incompatible	The CFB Shilo Long Term Natural Resources Management Framework does place an emphasis on the maintenance of biodiversity. While the OIC does define several ecologically important areas within the base that are out of bounds to vehicles, the mechanism does not compel DND to prohibit activities that may be incompatible with biodiversity in other parts of the area under consideration. For security and safety reasons DND prohibits most activities that would have a negative impact on conservation of biodiversity. There are a number of unexploded ordnance	Yes

TABLE 1: STANDARDS COMMON TO PROTECTED AREAS AND OECMS				
CRITERIA:	INTENDED EFFECT OF THE CRITERION	SCREENING CHOICE	EVIDENCE-BASED RATIONALE Rationale/evaluation of how area meets or does not meet the intended effect of the criterion	MEETS INTENDED EFFECT?
LONG TERM		activities are not likely to occur.	devices located throughout the Base and consequently CFB Shilo will not authorize activities which will disturb the ground as the risk of an accident is too great. Additionally, allowing developments within the boundaries of the Base would affect training as they would be unable to conduct training activities in their vicinity.	
	The area is permanently protected or conserved and not easily reversed.	B. The mechanism(s) is/are expected to be in effect for the long term and not easily reversed.	CFB Shilo has been in operation since 1946. The OIC establishing the base will be in place until December 31, 2033, with an option to renew again for a period of 20 years. Given the nature of the training it is anticipated that lease will be renewed and will continue to be in operation for the long term. The designation can be removed by rescinding the OIC, which requires cabinet approval. Alternatively, the OIC could be permitted to expire without renewal in 2033, although this is not likely as indicated above.	Yes
TIMING	Biodiversity is protected or conserved year-round.	A. The mechanism(s) is/are in effect year-round	There are no seasonal components to the designation.	Yes

TABLE 2: STANDARDS THAT FURTHER DEFINE AND DISTINGUISH BETWEEN PROTECTED AREAS AND OECMS				
CRITERIA:	INTENDED EFFECT OF THE CRITERION	SCREENING CHOICE	EVIDENCE-BASED RATIONALE: Rationale/evaluation of how area meets or does not meet the intended effect of the criterion	OUTCOME
SCOPE OF OBJECTIVES	Objectives have sufficient scope to result in the in-situ conservation of biodiversity.	C. The area has objectives consistent with, whether intentionally or otherwise, the in-situ conservation of biodiversity.	<p>The CFB Shilo Long Term Natural Resource Management Framework (NRM Framework) acknowledges that the base is “only a small portion of a larger ecosystem, the natural region, or habitat”, and defines the responsibilities of DND for environmental management. These include responsibilities for the Range and Training Area (RTA) as follows:</p> <ul style="list-style-type: none"> <li>• Maintain clean and uncontaminated surface and ground water</li> <li>• Maintain abundant and diverse wildlife populations</li> <li>• Maintain and preserve mixed-grass prairie</li> <li>• Maintain ecotypes as defined in 2006 vegetation classification</li> <li>• Identify and protect all known archaeological sites in the NRM Framework outlines the following objectives that are associated with biodiversity conservation:</li> <li>• Identify relative abundance, frequency, and diversity of small and large mammals, birds, reptiles and amphibians.</li> <li>• Identify and maintain database of SARA species and update yearly.</li> <li>• Maintain sustainable populations of small and large mammals, birds, reptiles, and amphibians through habitat preservation.</li> <li>• Identify and determine relative abundance, frequency, richness and diversity of fish and invertebrates.</li> <li>• Review wildlife populations via surveys every five years on a rotational basis.</li> <li>• Maintain a yearly invasive weed control program.</li> <li>• Maintain and annual burn plan on a rotational basis.</li> </ul>	Yes - OECM

TABLE 2: STANDARDS THAT FURTHER DEFINE AND DISTINGUISH BETWEEN PROTECTED AREAS AND OECMS				
CRITERIA:	INTENDED EFFECT OF THE CRITERION	SCREENING CHOICE	EVIDENCE-BASED RATIONALE: Rationale/evaluation of how area meets or does not meet the intended effect of the criterion	OUTCOME
			<ul style="list-style-type: none"> <li>Identify and develop a long term removal plan for areas of pine and aspen encroachment on prairie areas.</li> <li>Maintain yearly veg monitoring on a rotational basis.</li> </ul>	
PRIMACY OF OBJECTIVES	Objectives are such that they result in the in-situ conservation of biodiversity.	D. Based on evident intent (e.g., management intent, stated or implied objectives, allowable and prohibited activities), primary and overriding objectives are not expected to result in adverse impacts on the in-situ conservation of biodiversity.	<p>The primary mandate of the base is to provide a space for military training. This mandate takes priority in a case of conflict with conservation objectives, although all measures are taken to mitigate possible impacts on biodiversity. In addition, some activities carried out by DND on the site, including prescribed burns and artillery practice, enhance biodiversity by preventing aspen encroachment on areas of mixed-grass prairie.</p> <p>Although not a stated objective, for security and safety reasons DND prohibits most activities that would have a negative impact on conservation of biodiversity. Any subsurface developments would pose a great risk to the developer due to unexploded ordnance being buried throughout CFB Shilo; consequently permits would not be issued due to public risk. Additionally, any developments would restrict the area available for training which would not be compatible with the Bases purpose.</p> <p>Therefore, although not clearly defined in policy, allowable and prohibited activities support conservation of biodiversity overall in practice.</p>	Yes - OECM
GOVERNING AUTHORITIES	The in-situ conservation of biodiversity is not jeopardized by relevant governing authorities.	C. All relevant governing authorities acknowledge and abide by a management regime that delivers	<p>In the context of the current lease agreement, Manitoba transferred the administration and control of Provincial Crown land to Canada. Consequently, DND is the sole governing authority of the site and abides by its self-imposed conservation objectives. As for the sub-surface rights, subject to prior negotiation, Manitoba (Minister/Agents) may have limited access to the Crown land to explore, assess, and</p>	Yes - OECM

TABLE 2: STANDARDS THAT FURTHER DEFINE AND DISTINGUISH BETWEEN PROTECTED AREAS AND OECS				
CRITERIA:	INTENDED EFFECT OF THE CRITERION	SCREENING CHOICE	EVIDENCE-BASED RATIONALE: Rationale/evaluation of how area meets or does not meet the intended effect of the criterion	OUTCOME
		the in-situ conservation of biodiversity.	extract mineral and petroleum resources. Given the use of the land, permitting is unlikely. Any subsurface developments would pose a great risk to the developer due to unexploded ordnance being buried throughout CFB Shilo; consequently permits would not be issued due to public risk. Additionally, any developments would restrict the area available for training which would not be compatible with the Bases purpose.	
<b>BIODIVERSITY CONSERVATION OUTCOMES</b>	Biodiversity is conserved in-situ.	C. The area is being managed in a way that delivers the in-situ conservation of biodiversity.	<p>CFB Shilo has documented 63 species of mammals, over 200 species of birds, 7 species of reptiles, 8 species of amphibians, and 450 species of flora. There are 17 resident species at risk located in CFB Shilo while an additional 11 species at risk have been seen or heard on the site but a breeding population was not confirmed.</p> <p>CFB Shilo has a number of ongoing monitoring programs including using Landsat imagery to document habitat changes over time, breeding bird surveys every two years, and yearly nocturnal owl, common nighthawk, chimney swift, bat, and prairie skink surveys, vegetation transect monitoring (every year on a five year rotational basis and hairy prairie clover mapping and change detection.</p> <p>Assessments of habitat distribution in CFB Shilo indicate little change in the proportion and distribution of habitat types throughout the base. Bird monitoring has indicated a slow decline over time for SAR however this is likely due to loss of habitat and other factors found along their migration corridors and wintering areas and is reflective of a larger global trend. Reptile and amphibian surveys have had consistent results over years.</p>	Yes - OECM

SUMMARY OF ASSESSMENT	
<b>OUTCOME / EVALUATION</b>	<p><b>Screening Outcome:</b> OECM (meets all criteria)</p> <p>Is this an Interim Target 1 area: no</p> <p><b>Is this a candidate Target 1 area: no</b></p> <p><b>Currently reported to CPCAD/CARTS? No</b></p> <p><b>Total Area (ha) to be reported to CPCAD/CARTS: 23,061</b></p>
Identify deficiencies that could be overcome in order to report as PA or OECM	<i>What, if any, actions could be undertaken to meet the Pan-Canadian criteria and standards for reporting?</i>
Lead evaluator / assessor	<i>Names and organizations of lead evaluator and contributors, date of contribution, relationship to site</i> Screening originally conducted by the Canadian Council on Ecological Areas (CCEA) and the Department of National Defense in 2016 using the draft CCEA Screening Tool. The case study was then reviewed by Environment and Climate Change Canada. The case study has been updated to use the pan-Canadian guidance included in the Decision Support Tool.
Communications / Engagement	<i>Names of governing authorities and others consulted, including names and positions of contact people and dates</i> Department of National Defense, Manitoba Sustainable Development, Manitoba Infrastructure.
Approvals	<i>Names of governing authorities (including landowners, right holders and the responsible jurisdiction) that have approved the content and results of this screening as being accurate and complete to the best of their knowledge and agree to reporting of data.</i> Saleem Sattar, Director General, Department of National Defense

Tags: Manitoba, MB, Federal, OECM, Government of Canada, DND, National Defense, Deciduous forest, Prairie, Mixed-forest, Grassland, Wetland, 2019.

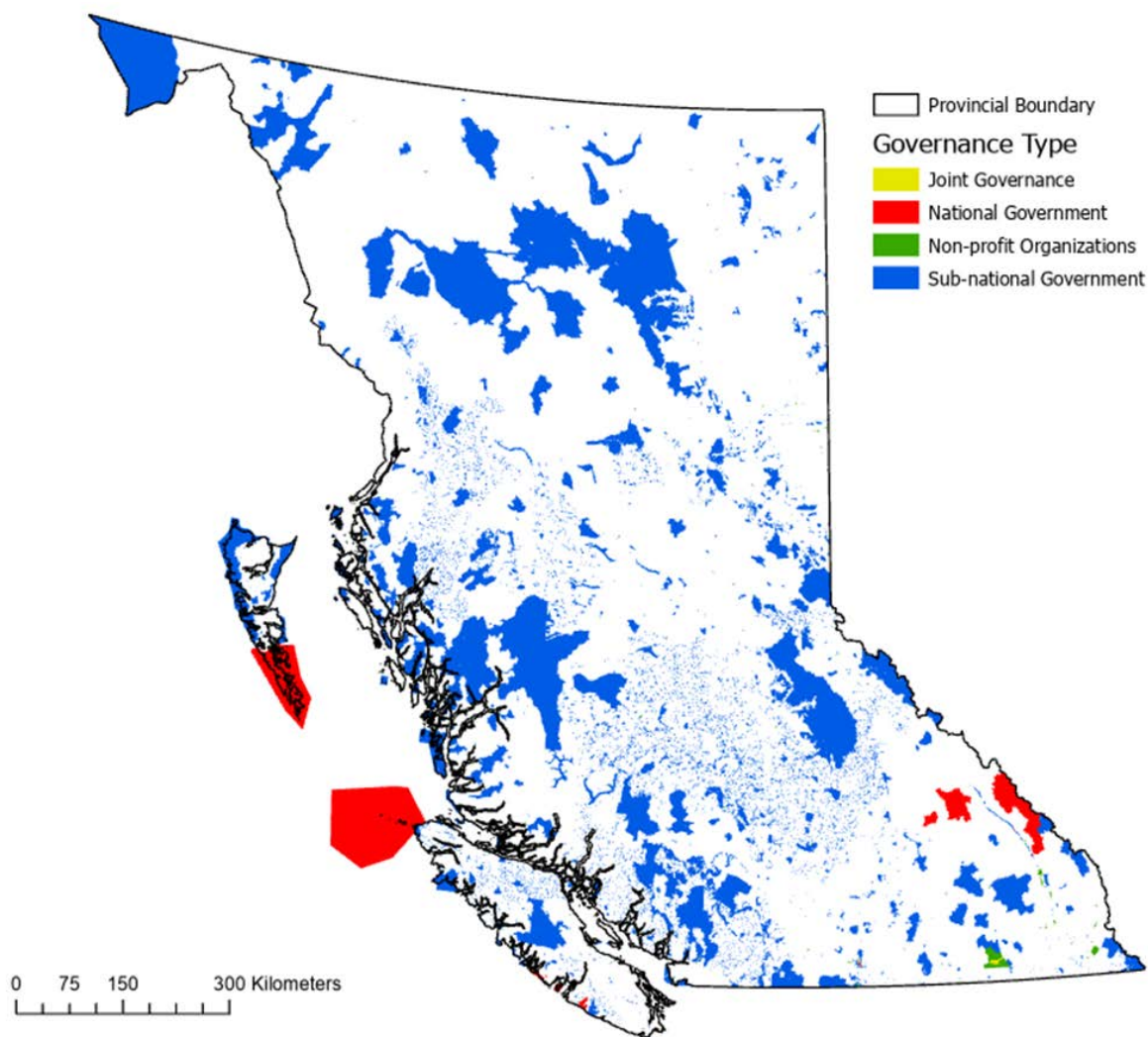




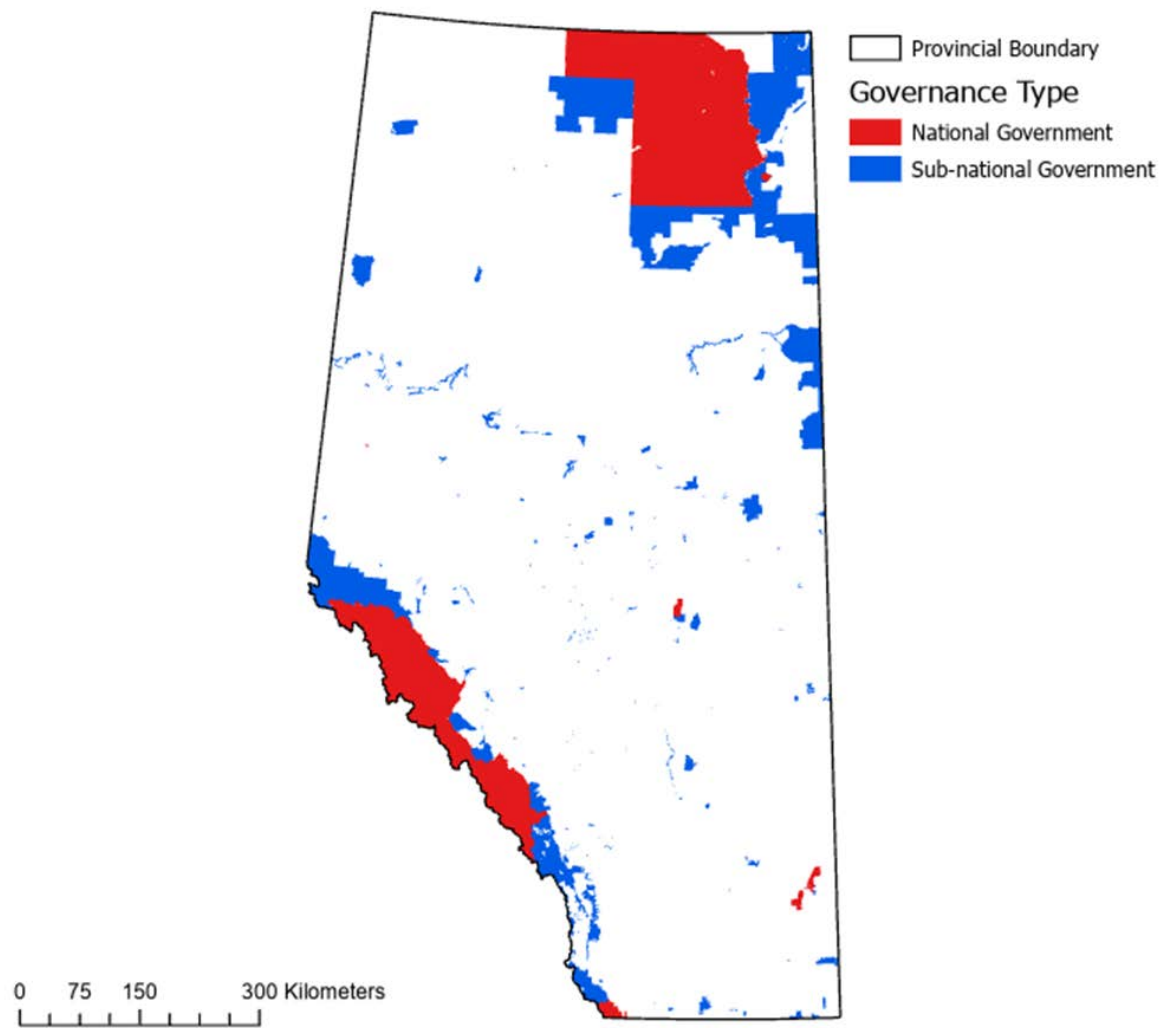
## APPENDIX D

### PROTECTED AND CONSERVED AREAS BY GOVERNANCE TYPE

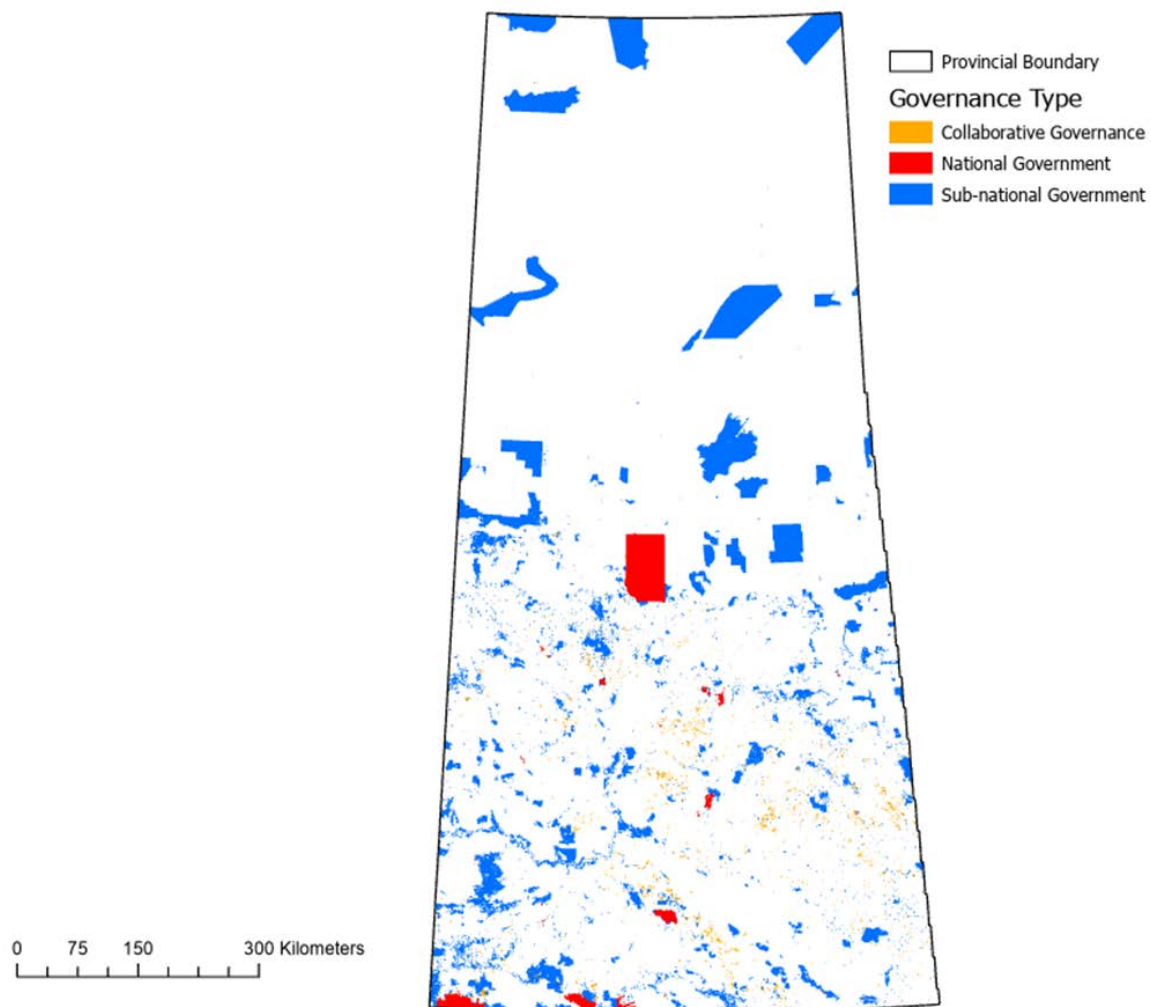
All maps created from data compiled within the Canadian Protected and Conserved Areas Database (ECCC 2021b).



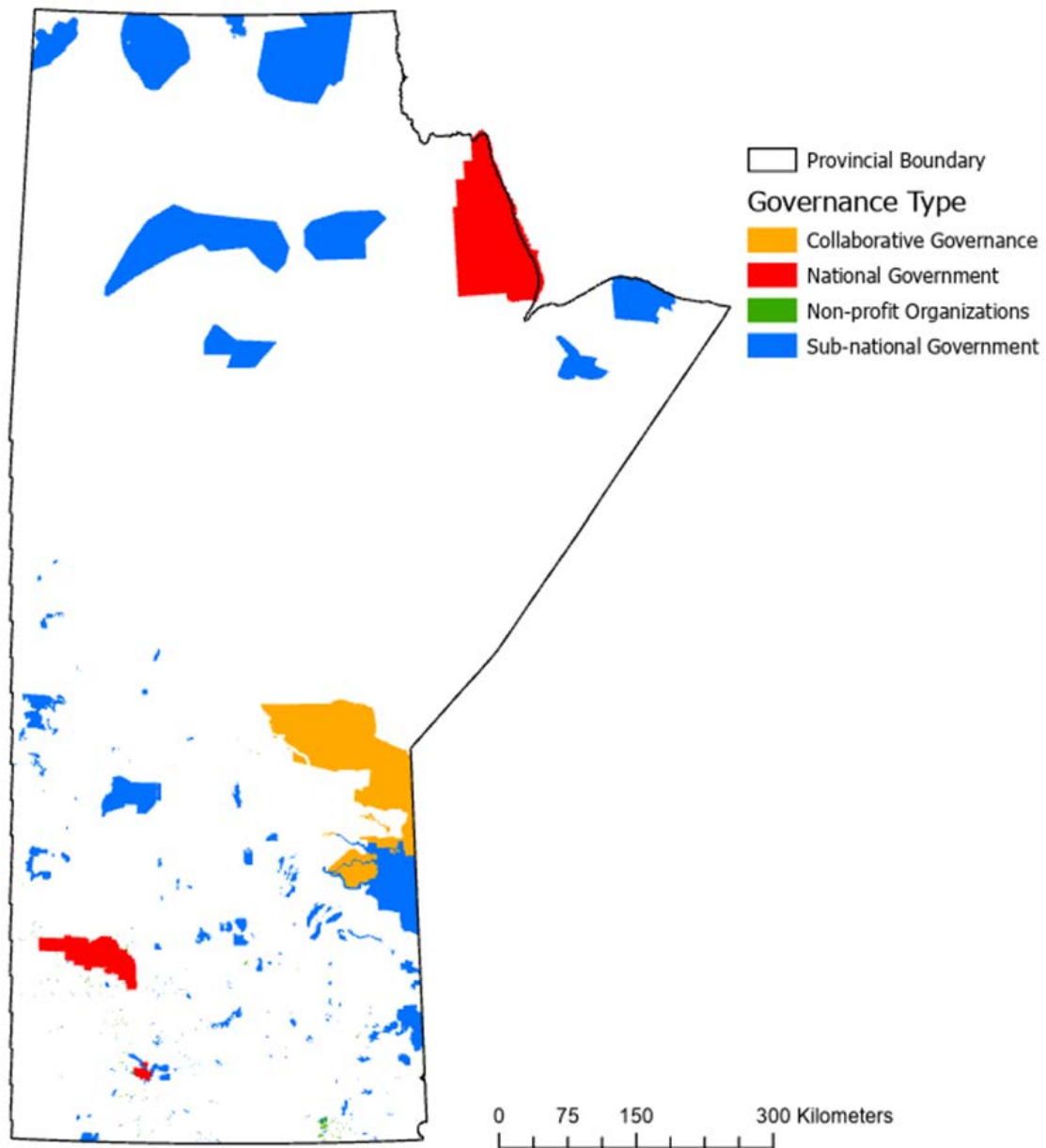
**Figure D1.** Protected and Conserved Areas by Governance Type in British Columbia



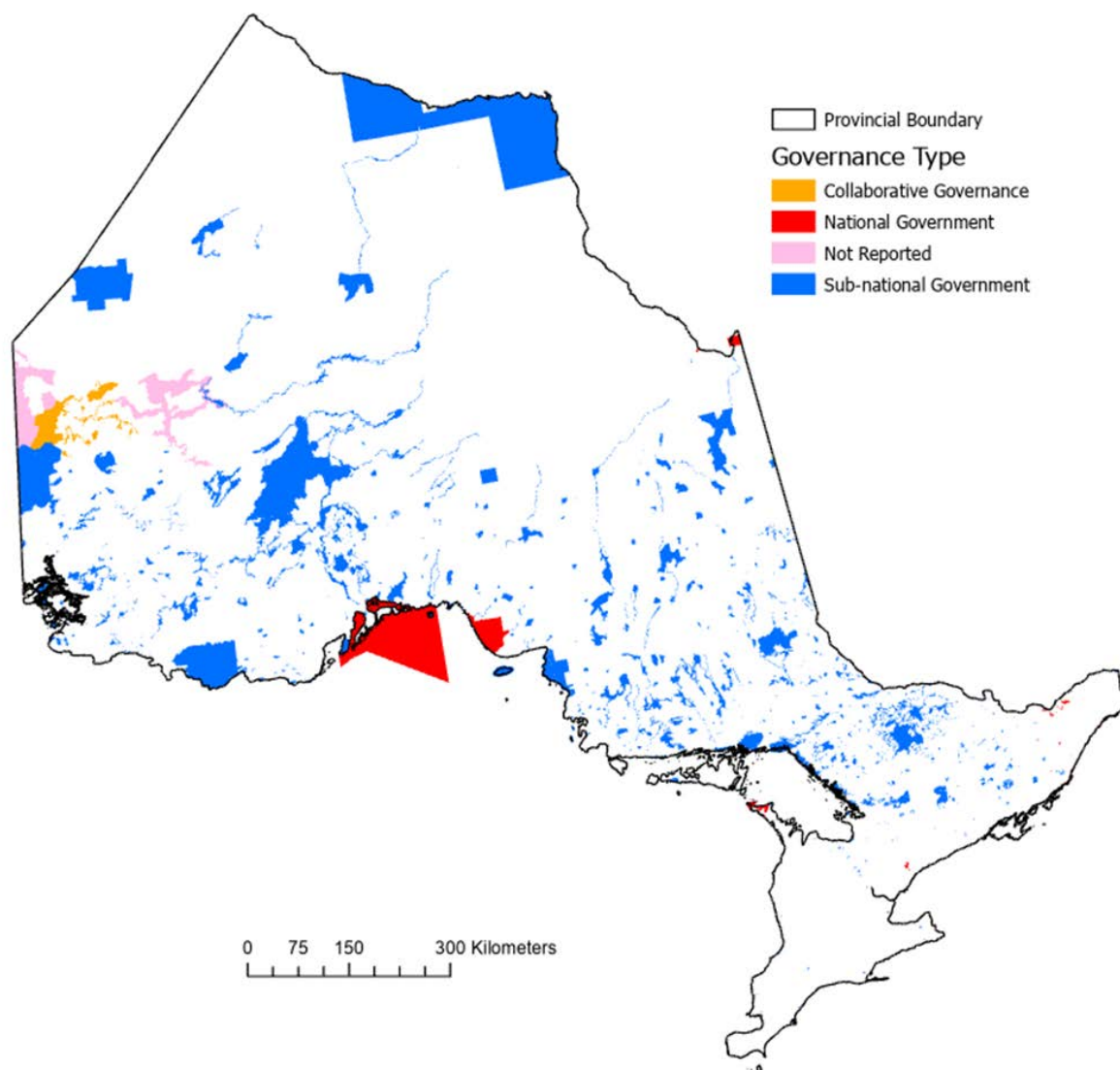
**Figure D2.** Protected and Conserved Areas by Governance Type in Alberta



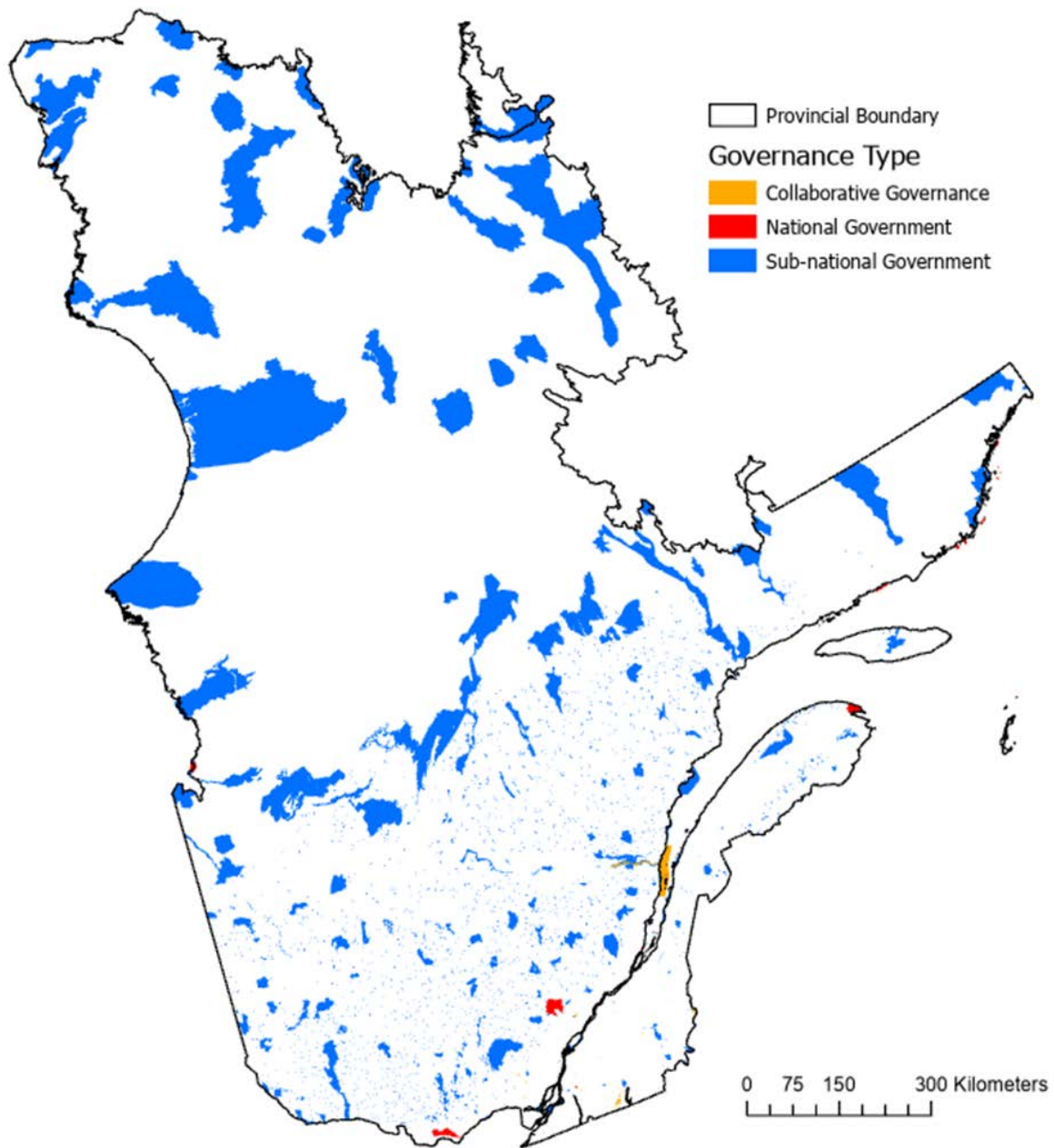
**Figure D3.** Protected and Conserved Areas by Governance Type in Saskatchewan



**Figure D4.** Protected and Conserved Areas by Governance Type in Manitoba

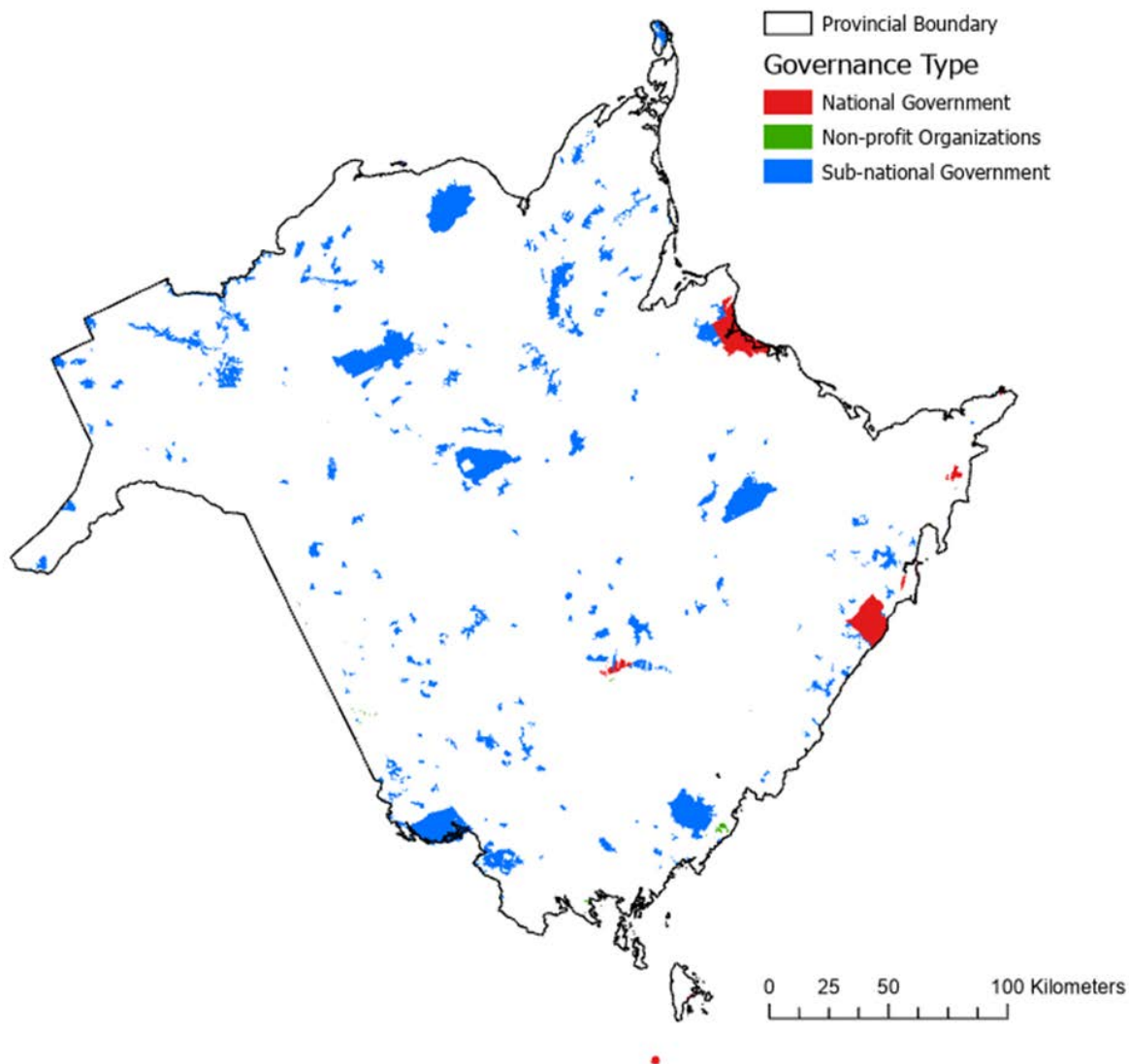


**Figure D5.** Protected and Conserved Areas by Governance Type in Ontario

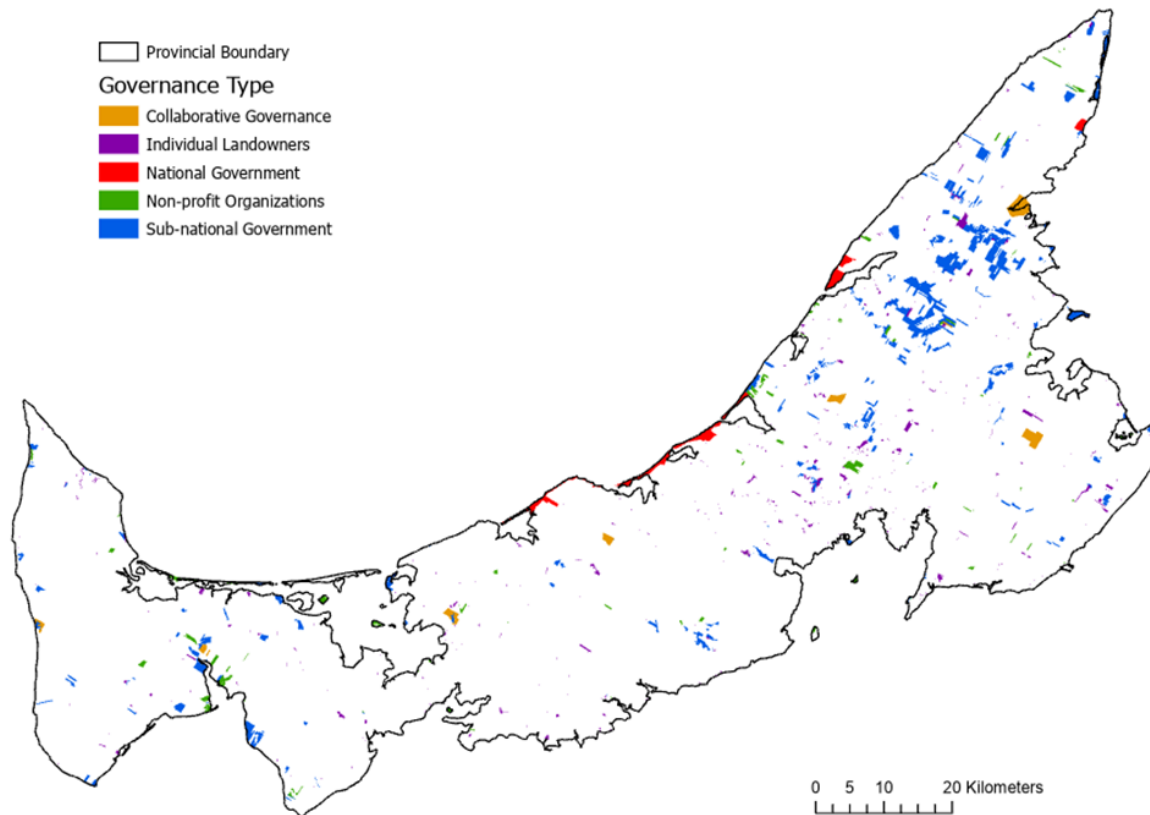


**Figure D6.** Protected and Conserved Areas by Governance Type in Québec



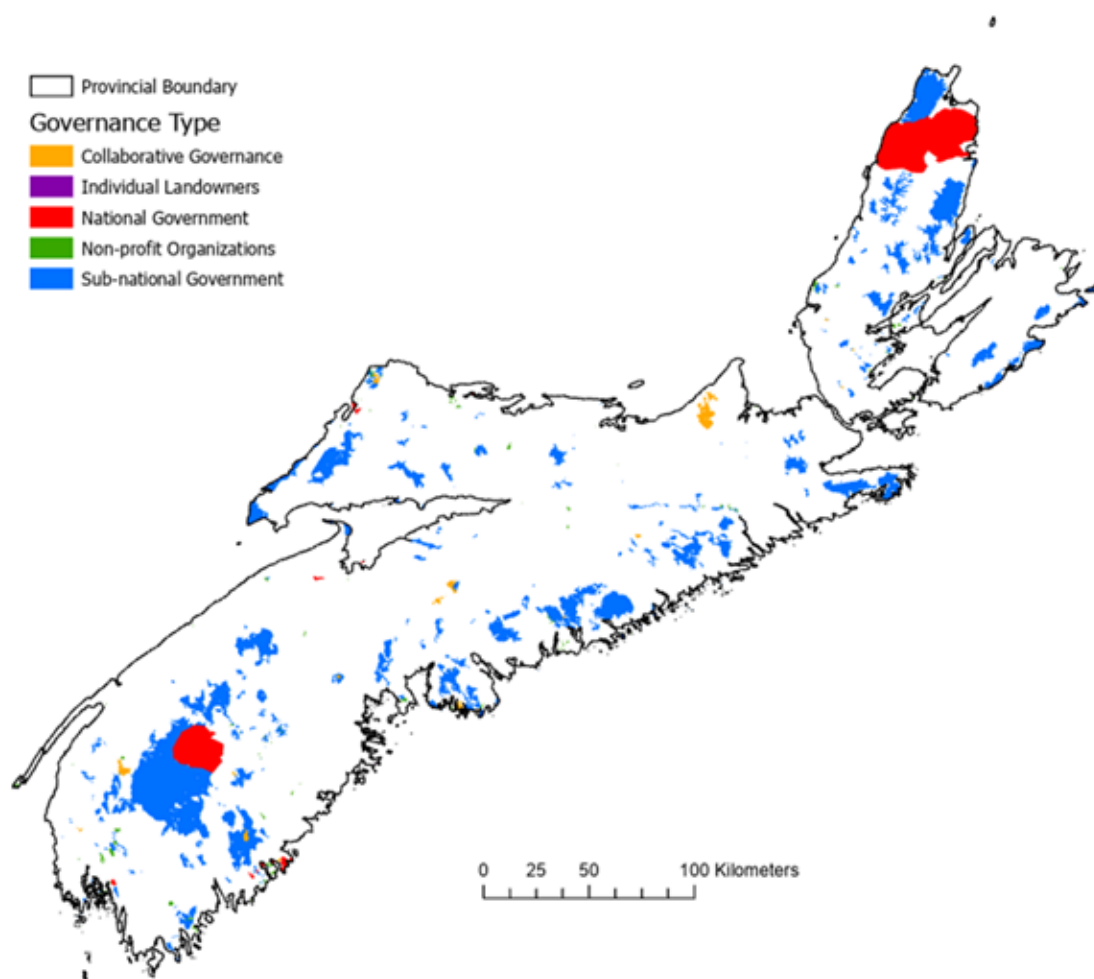


**Figure D7.** Protected and Conserved Areas by Governance Type in New Brunswick

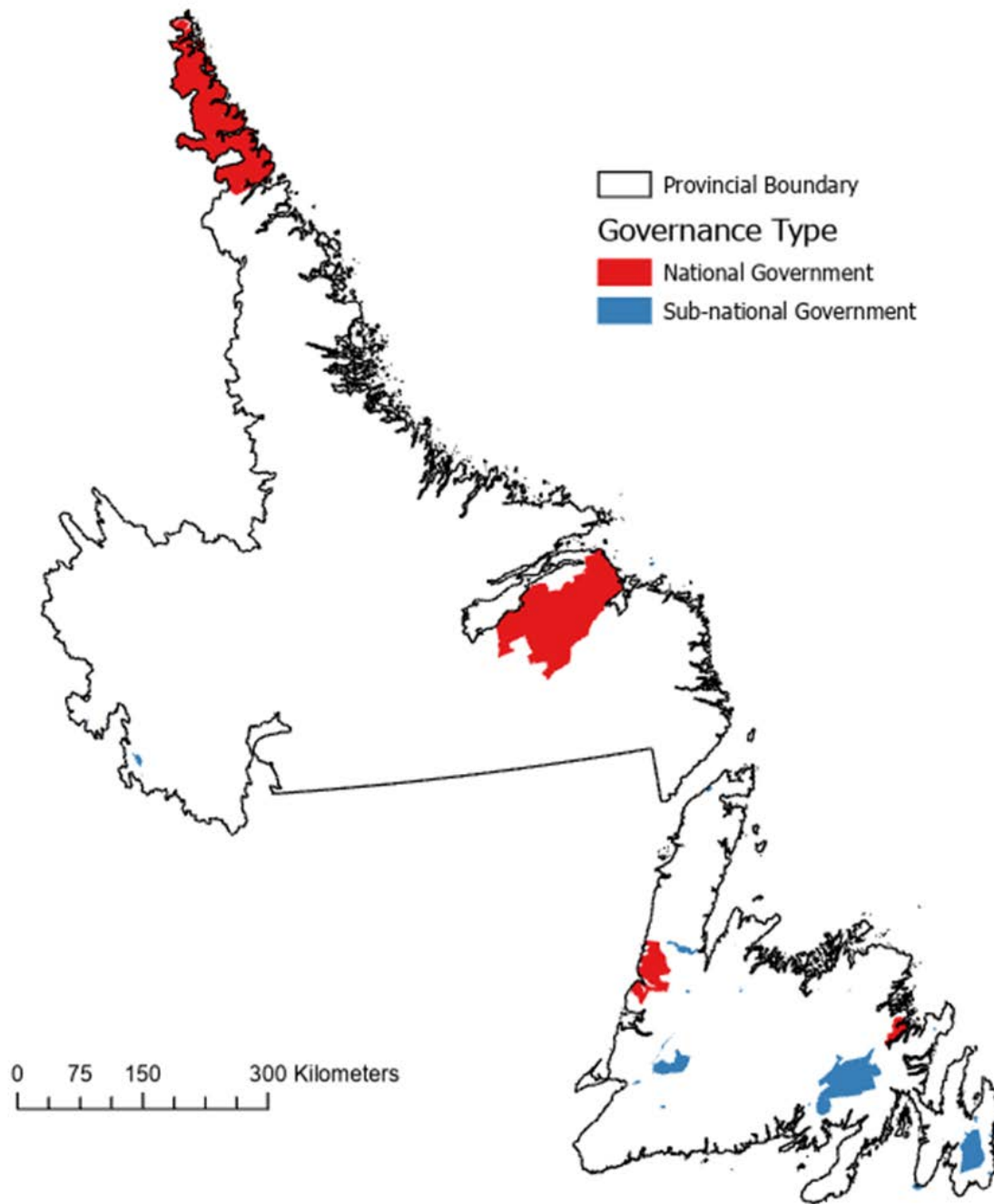


**Figure D8.** Protected and Conserved Areas by Governance Type in Prince Edward Island

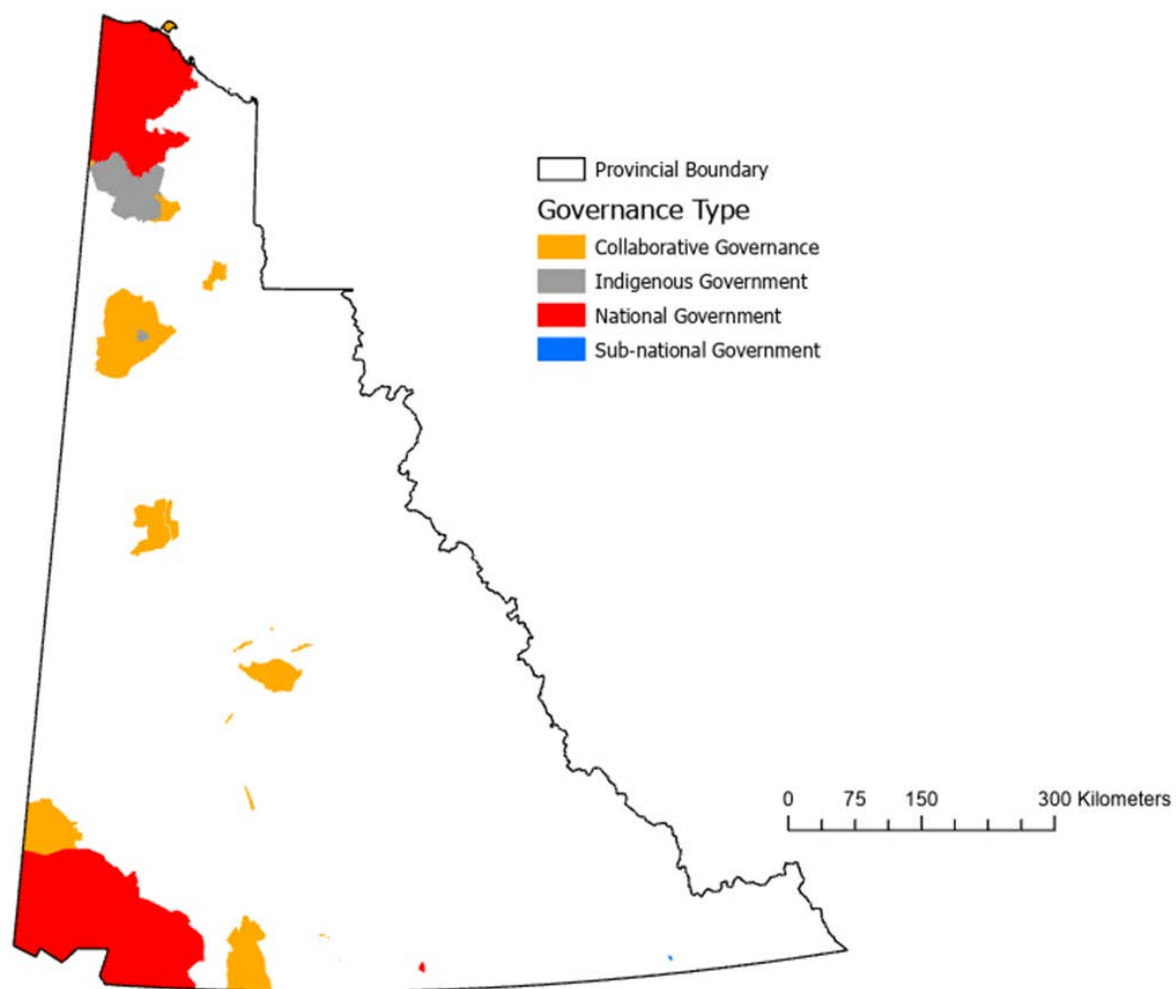




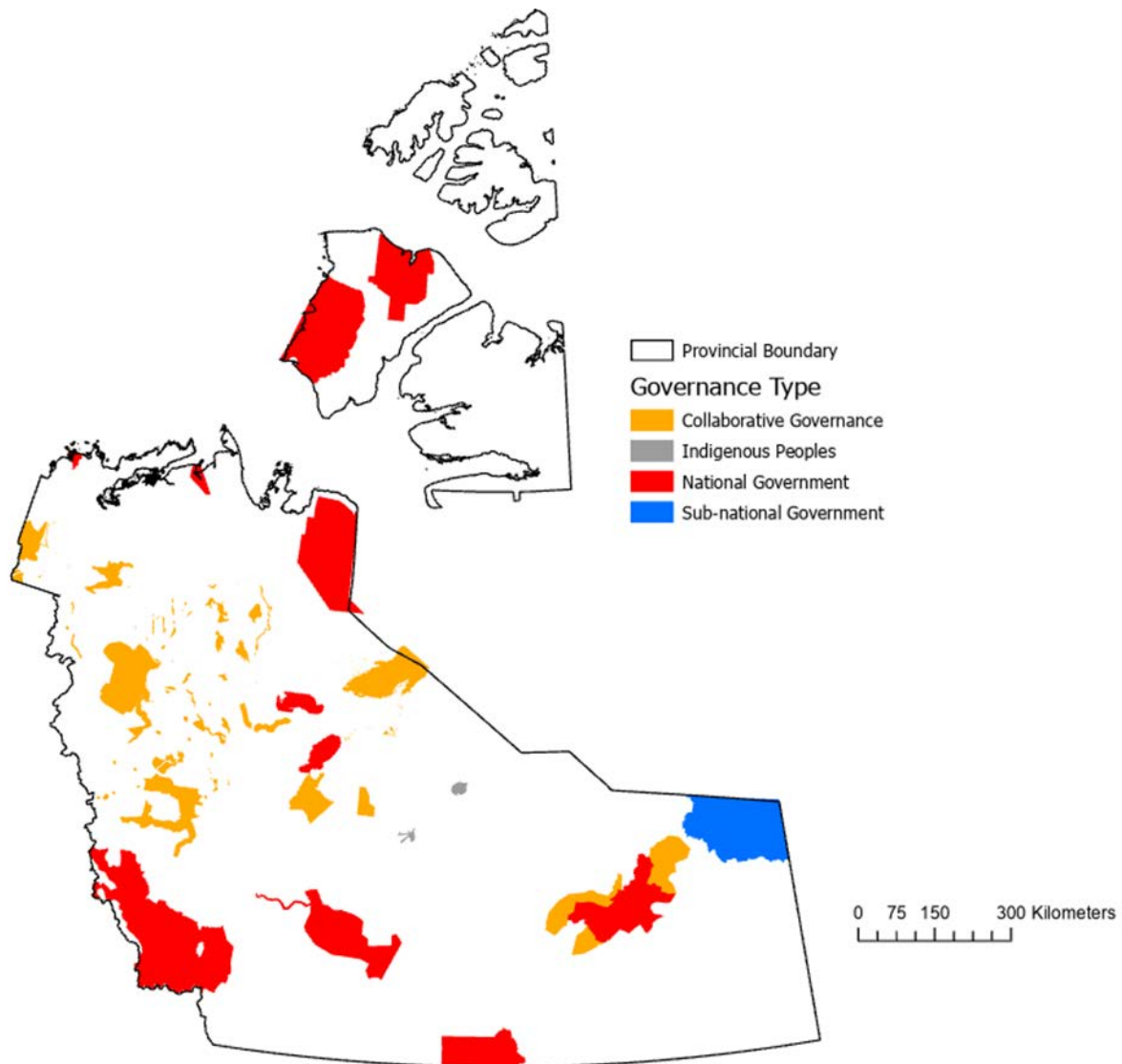
**Figure D9.** Protected and Conserved Areas by Governance Type in Nova Scotia



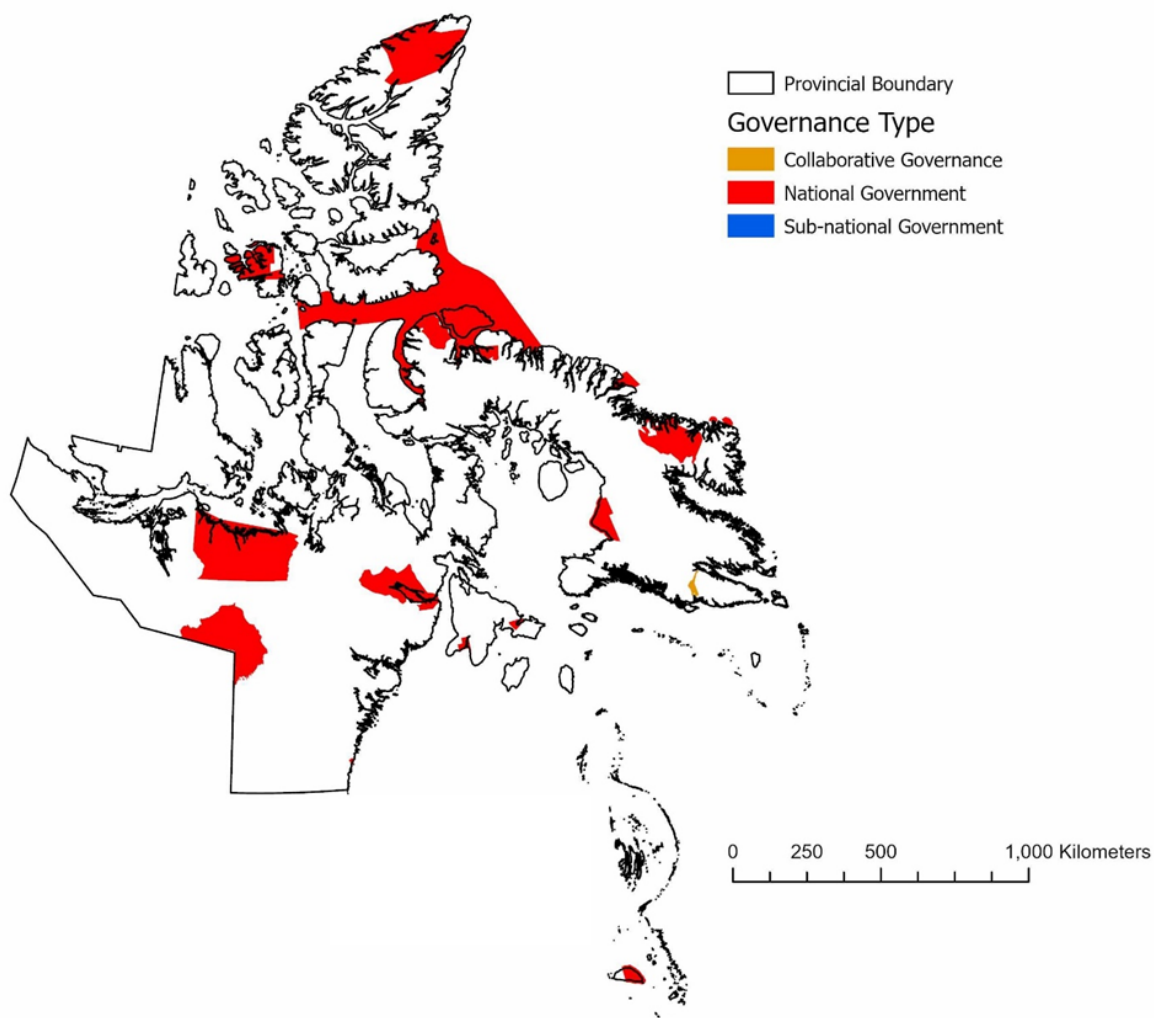
**Figure D10.** Protected and Conserved Areas by Governance Type in Newfoundland and Labrador



**Figure D11.** Protected and Conserved Areas by Governance Type in Yukon



**Figure D12.** Protected and Conserved Areas by Governance Type in Northwest Territories



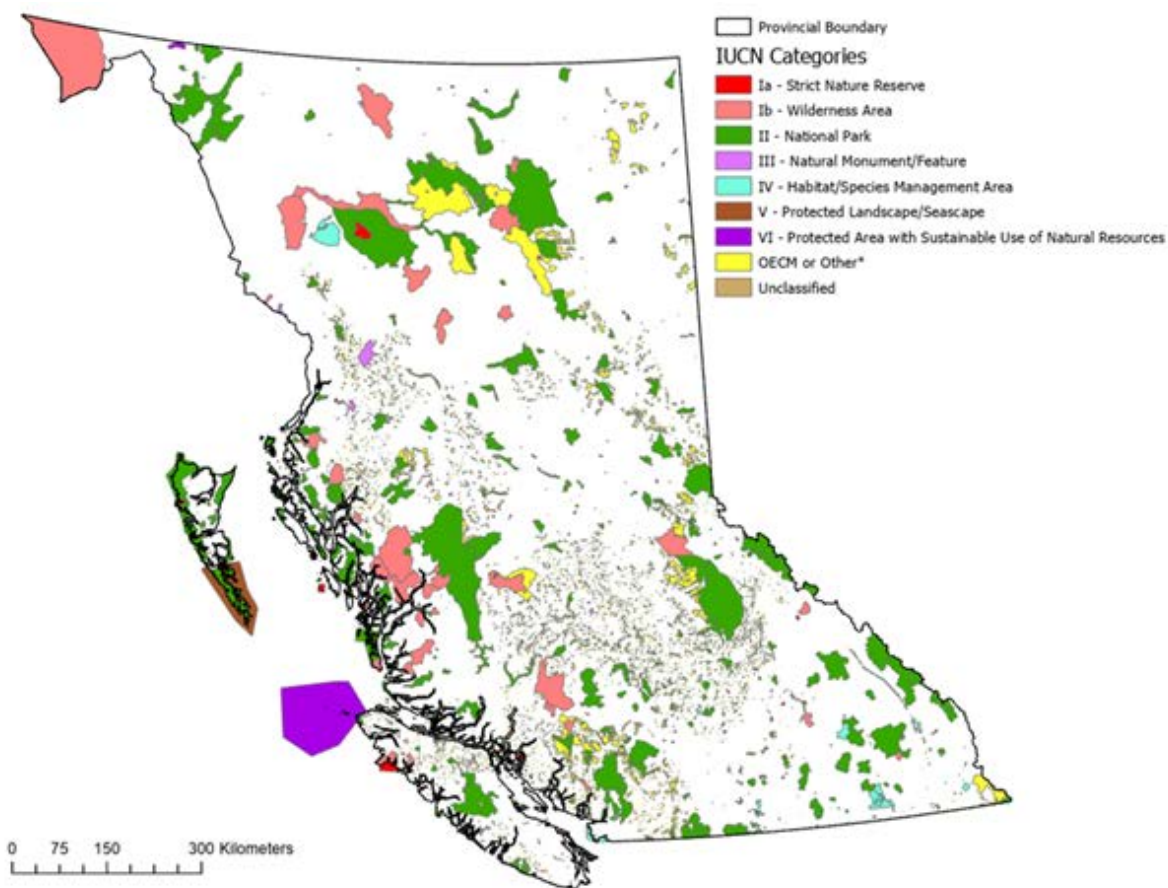
**Figure D13.** Protected and Conserved Areas by Governance Type in Nunavut



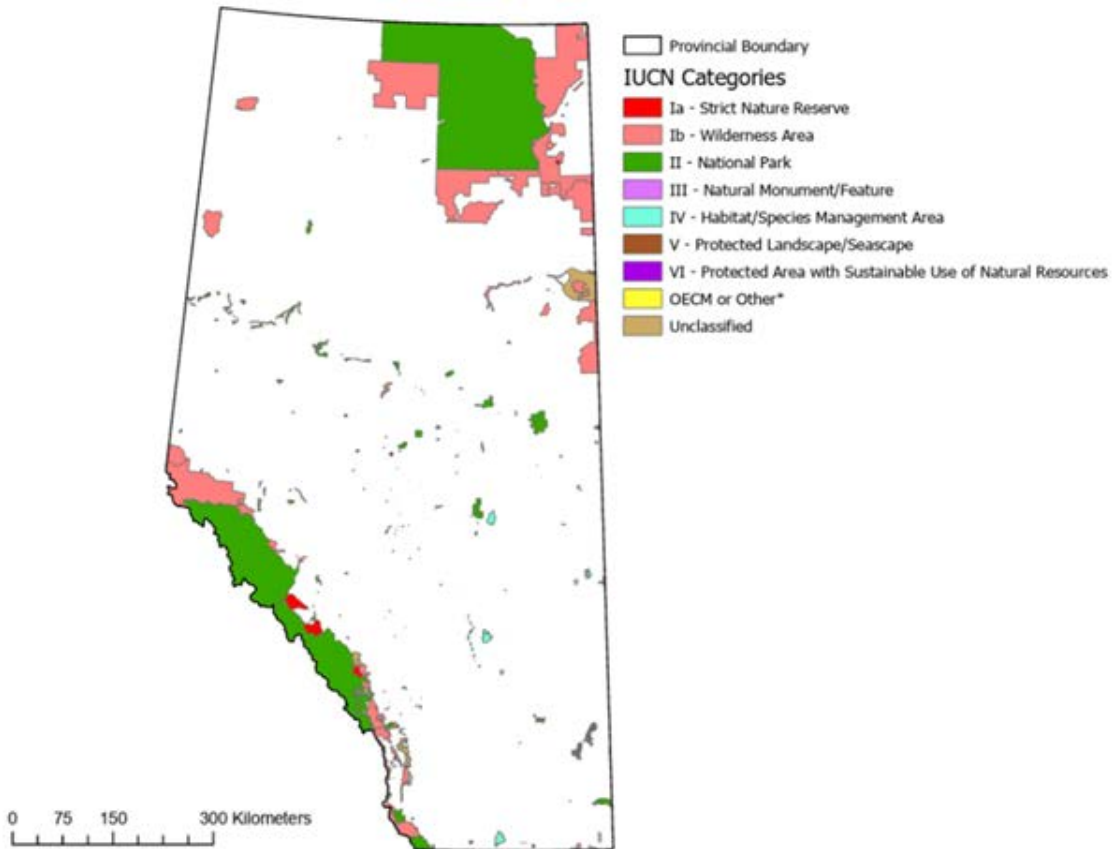
## APPENDIX E

### PROTECTED AND CONSERVED AREAS BY IUCN CATEGORY

All maps created from data compiled within the Canadian Protected and Conserved Areas Database (ECCC 2021b). In these maps the IUCN category “Other\*” refers to sites that do not meet the protected areas definition.

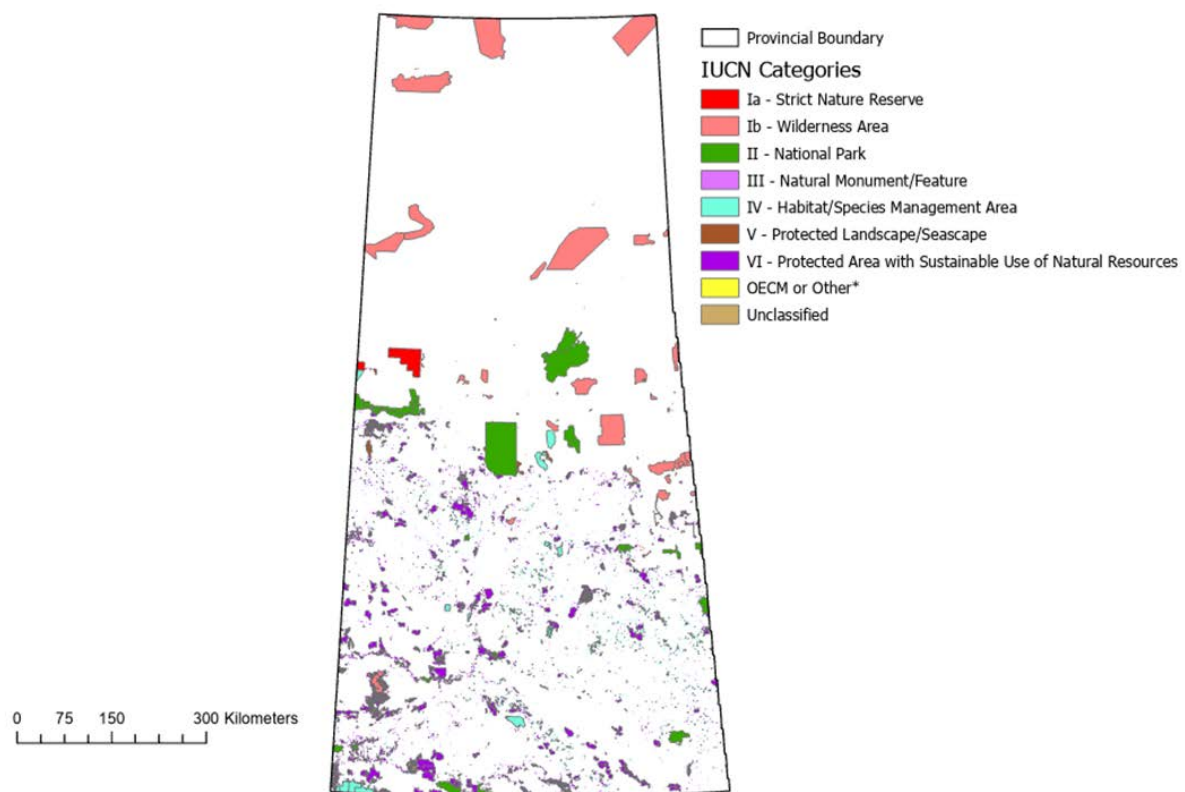


**Figure E1.** Protected and Conserved Areas by IUCN Category in British Columbia

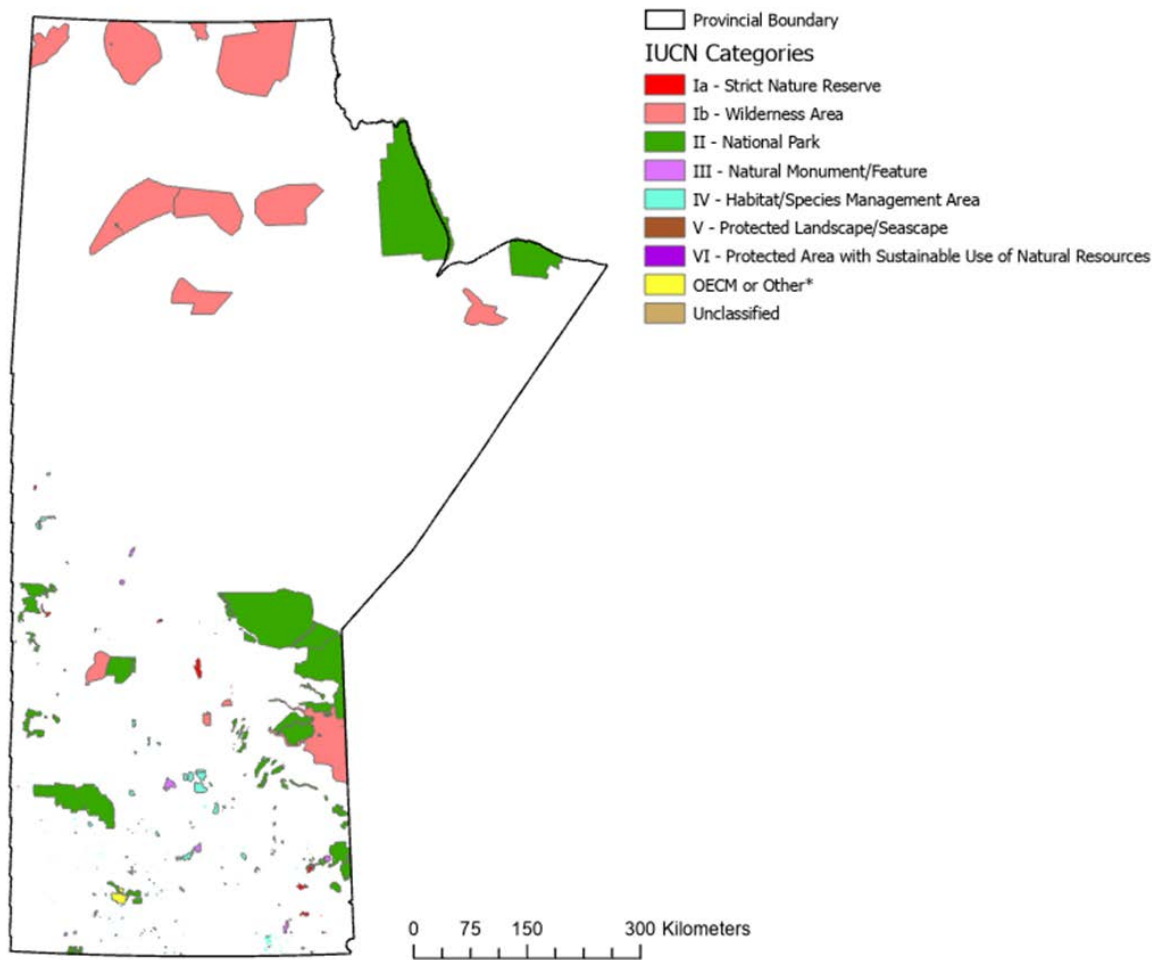


**Figure E2.** Protected and Conserved Areas by IUCN Category in Alberta

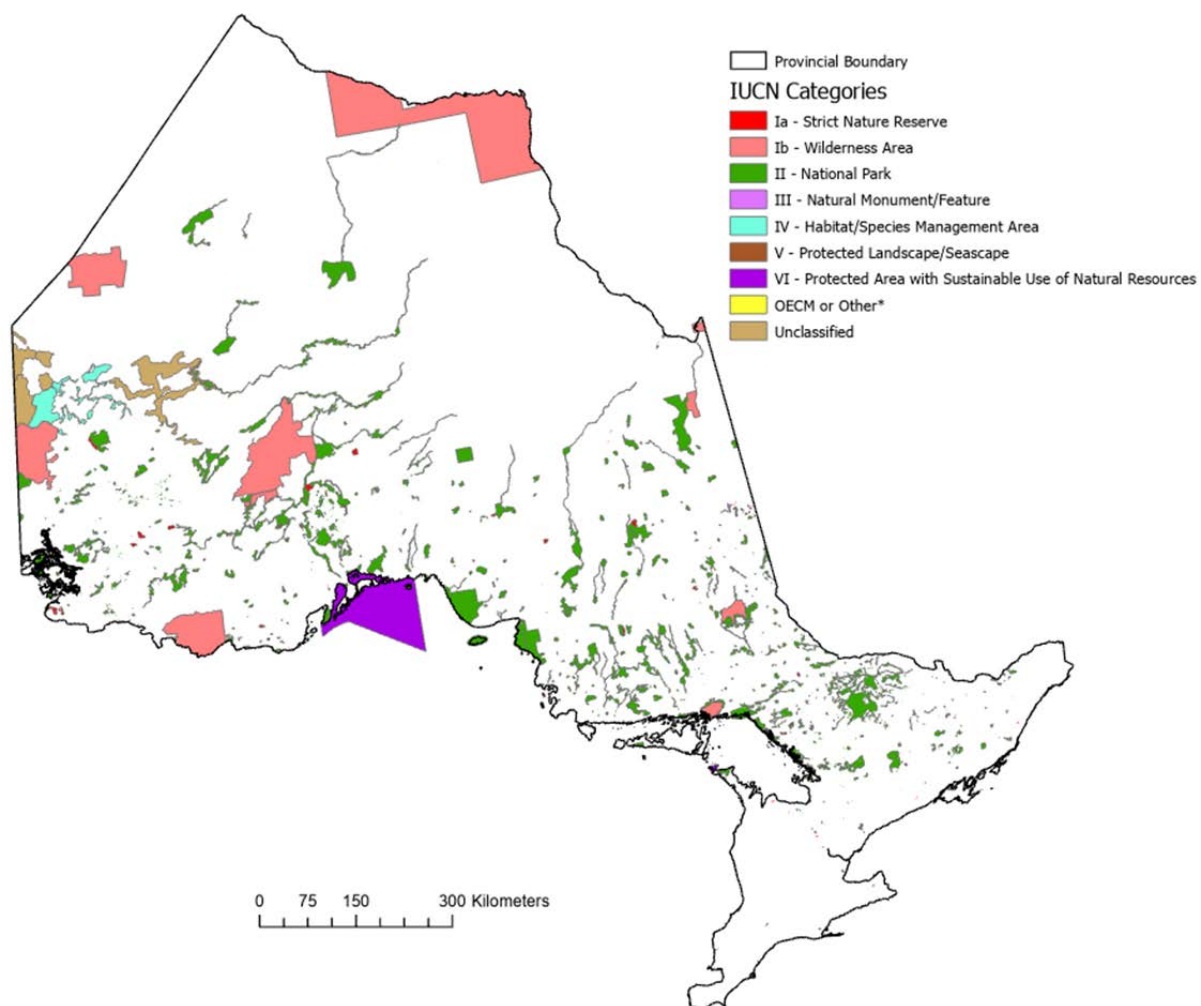




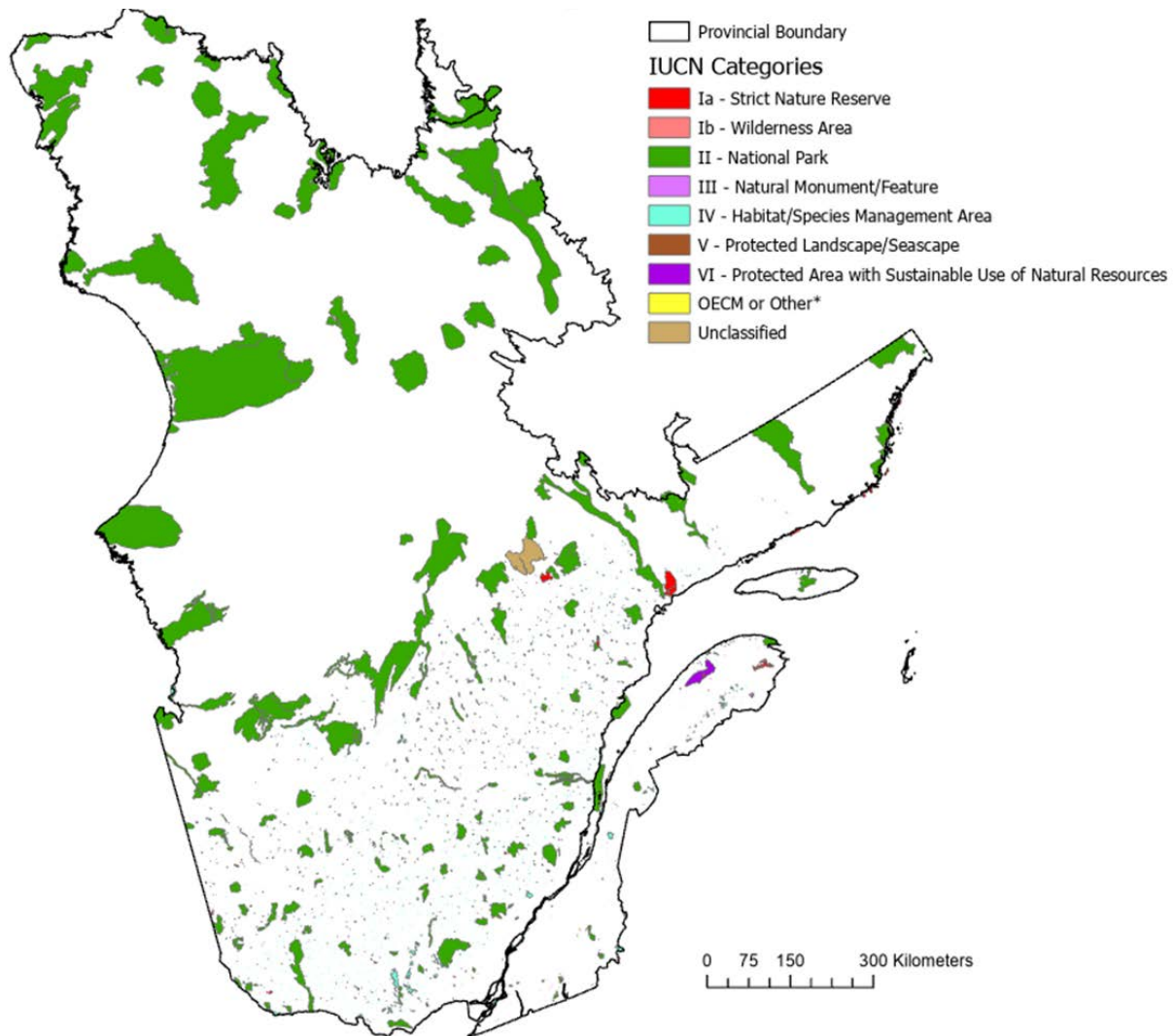
**Figure E3.** Protected and Conserved Areas by IUCN Category in Saskatchewan



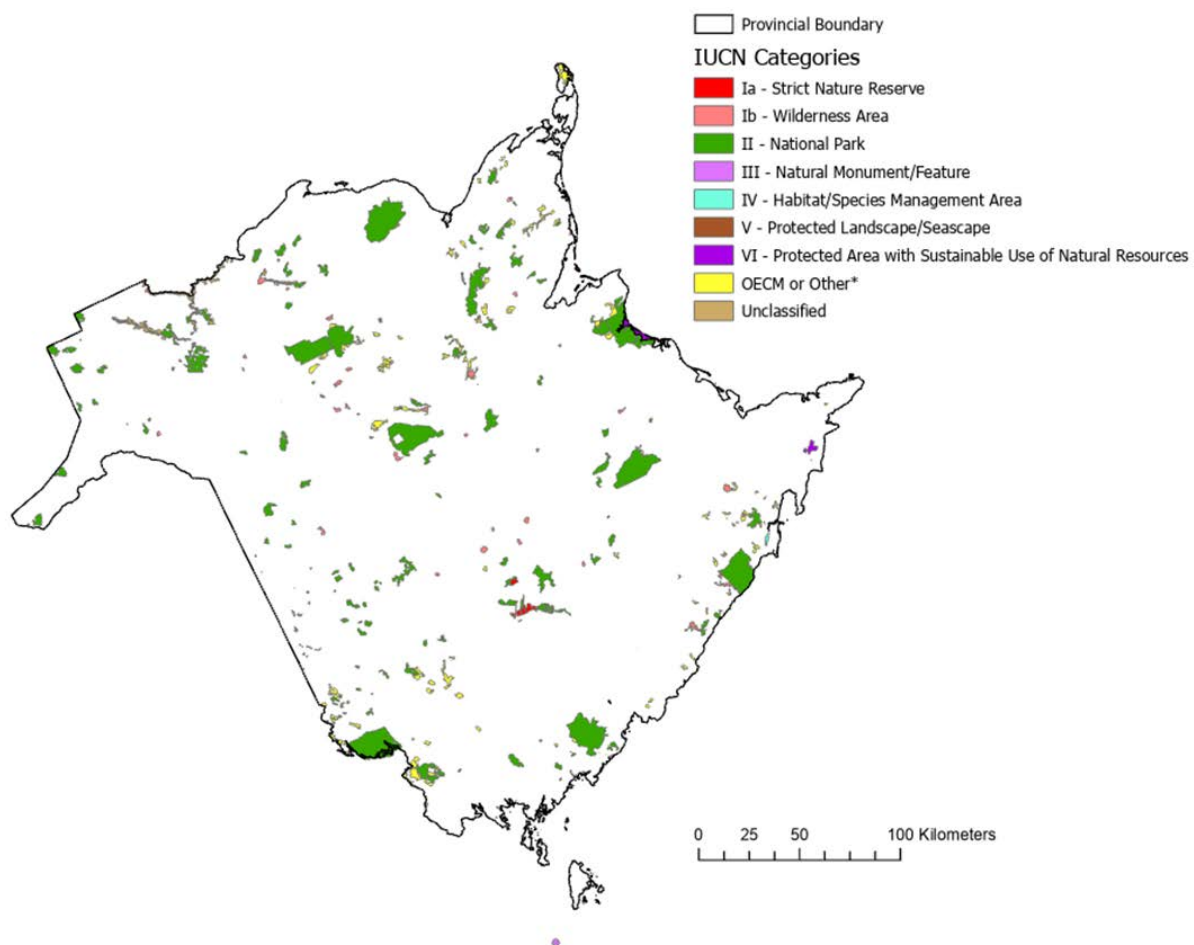
**Figure E4.** Protected and Conserved Areas by IUCN Category in Manitoba



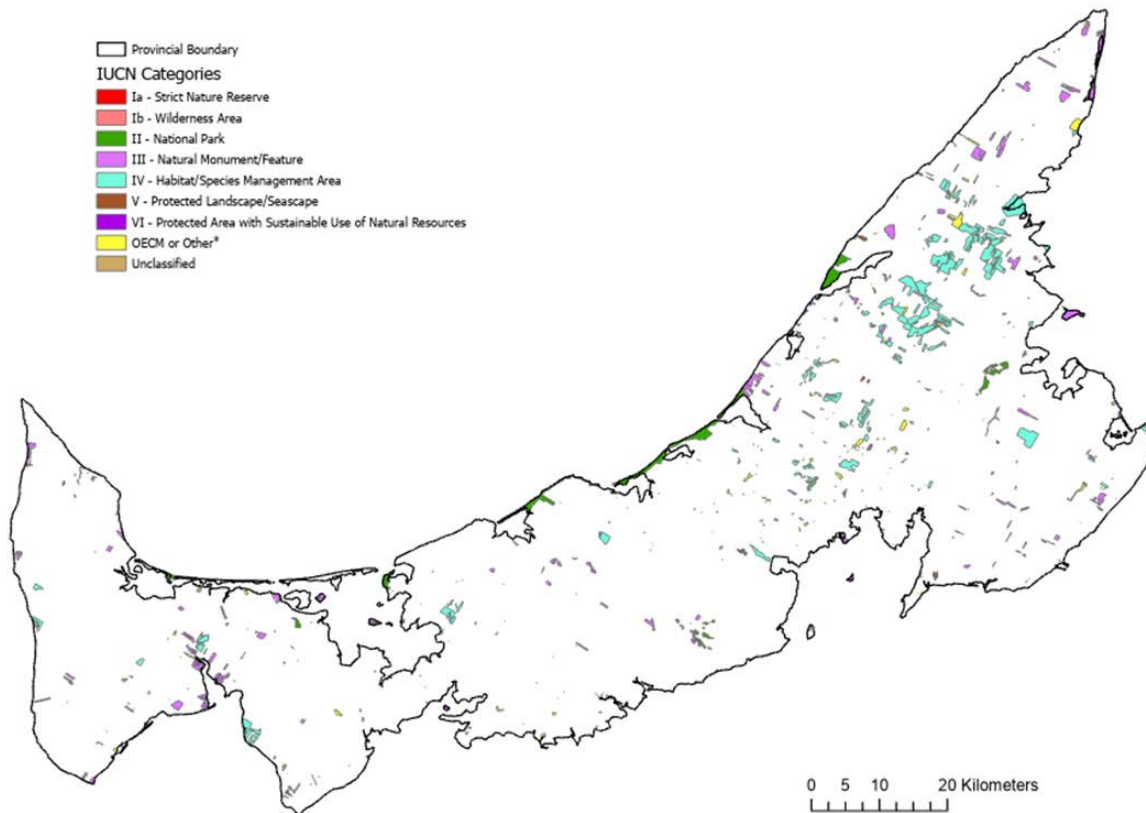
**Figure E5.** Protected and Conserved Areas by IUCN Category in Ontario



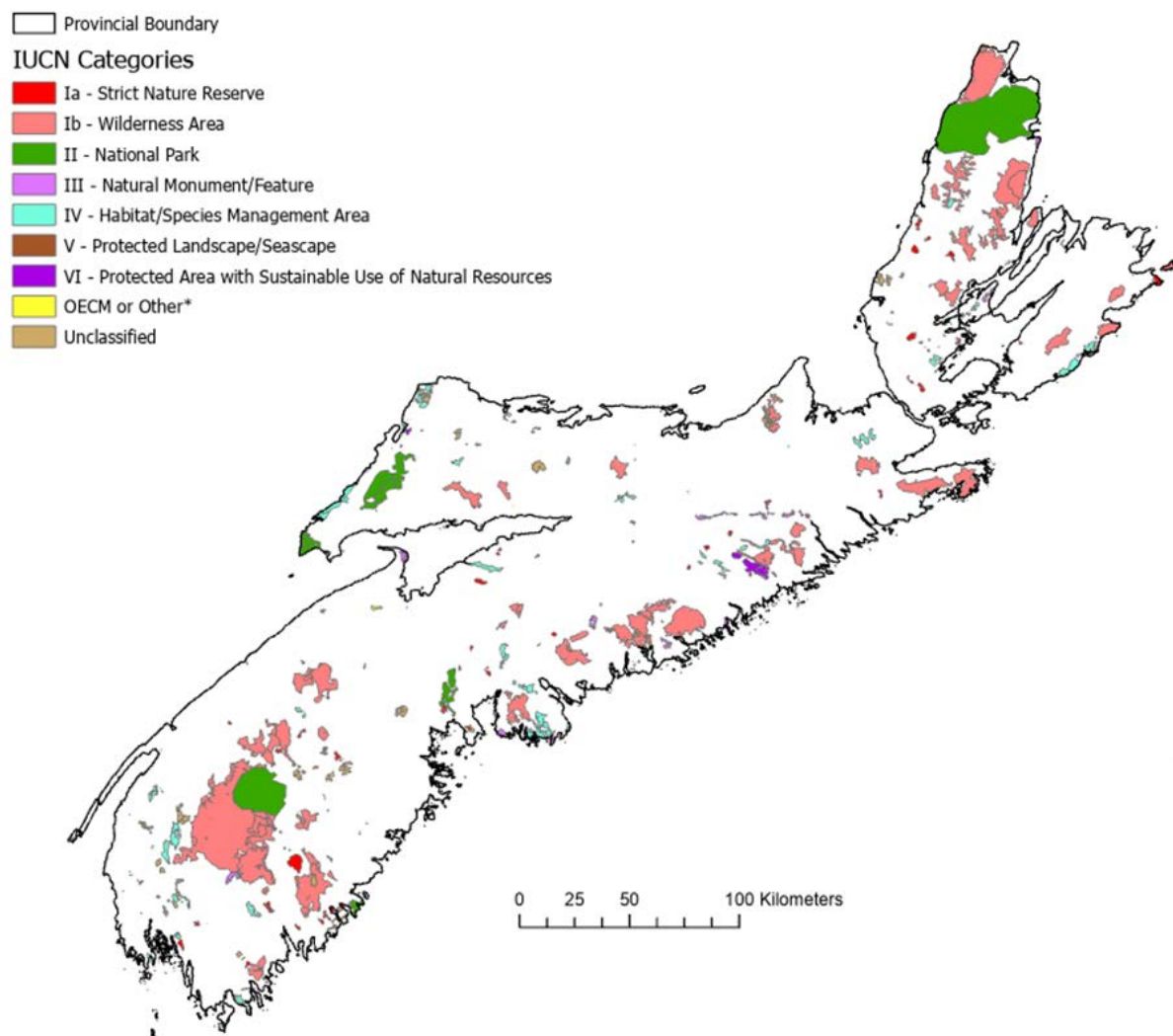
**Figure E6.** Protected and Conserved Areas by IUCN Category in Québec



**Figure E7.** Protected and Conserved Areas by IUCN Category in New Brunswick

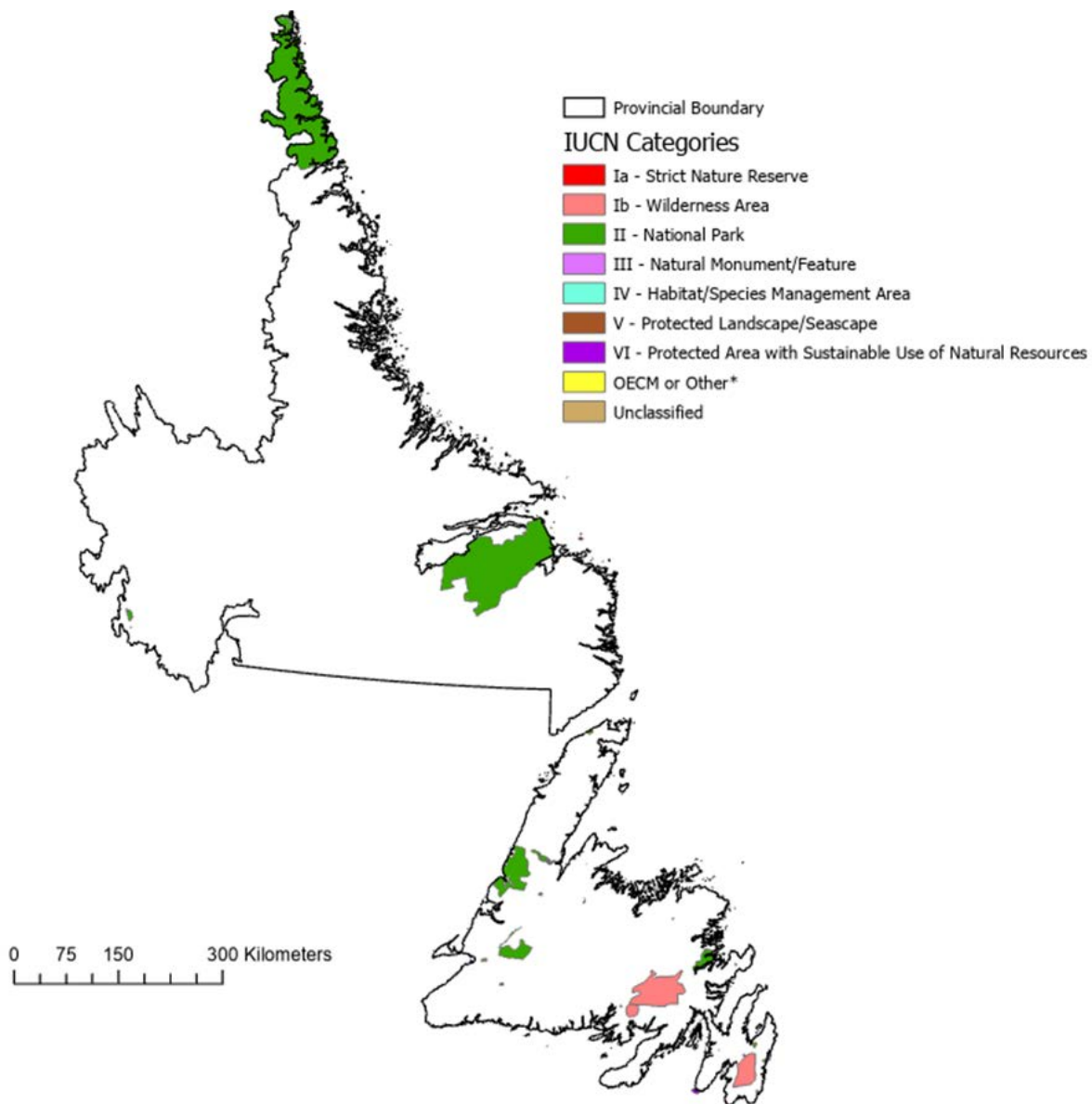


**Figure E8.** Protected and Conserved Areas by IUCN Category in Prince Edward Island



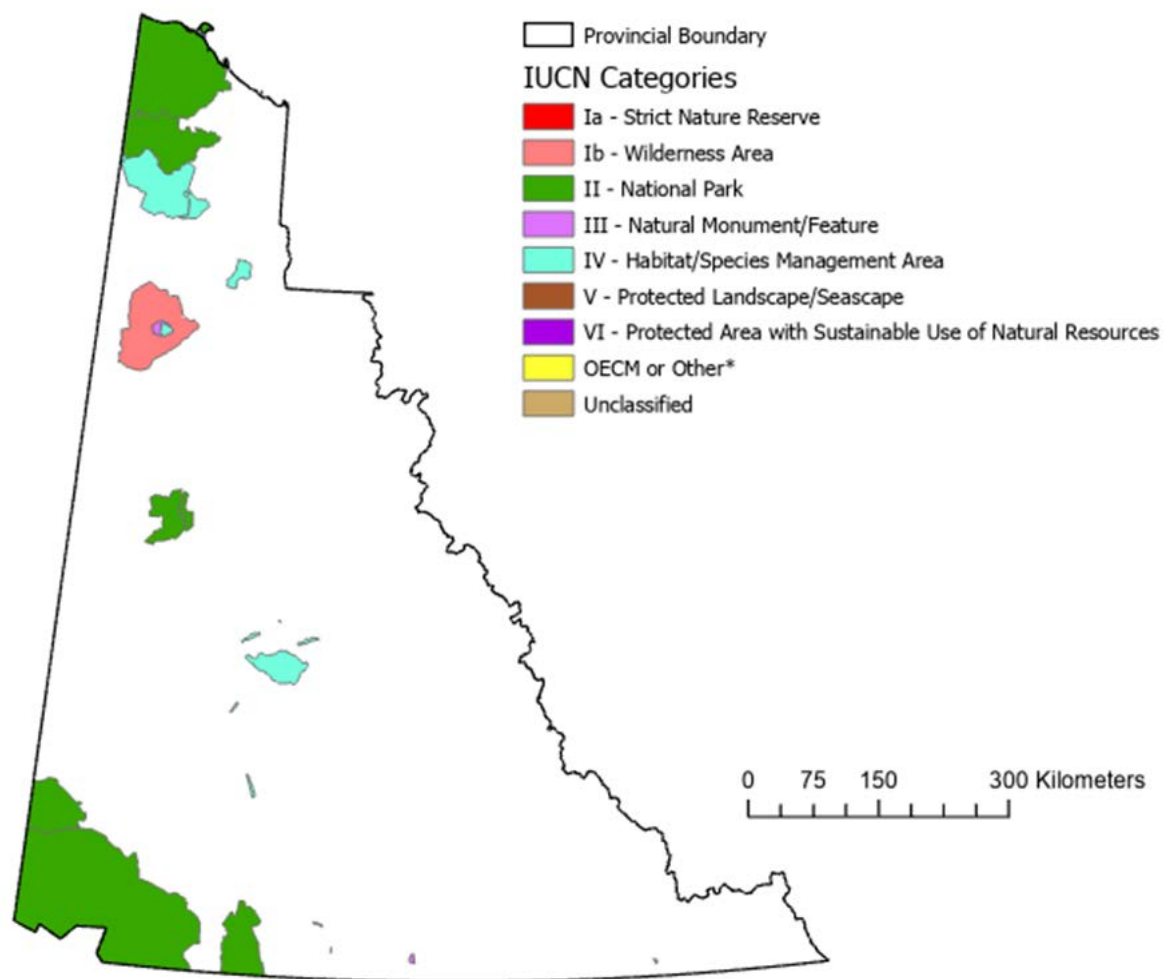
**Figure E9.** Protected and Conserved Areas by IUCN Category in Nova Scotia



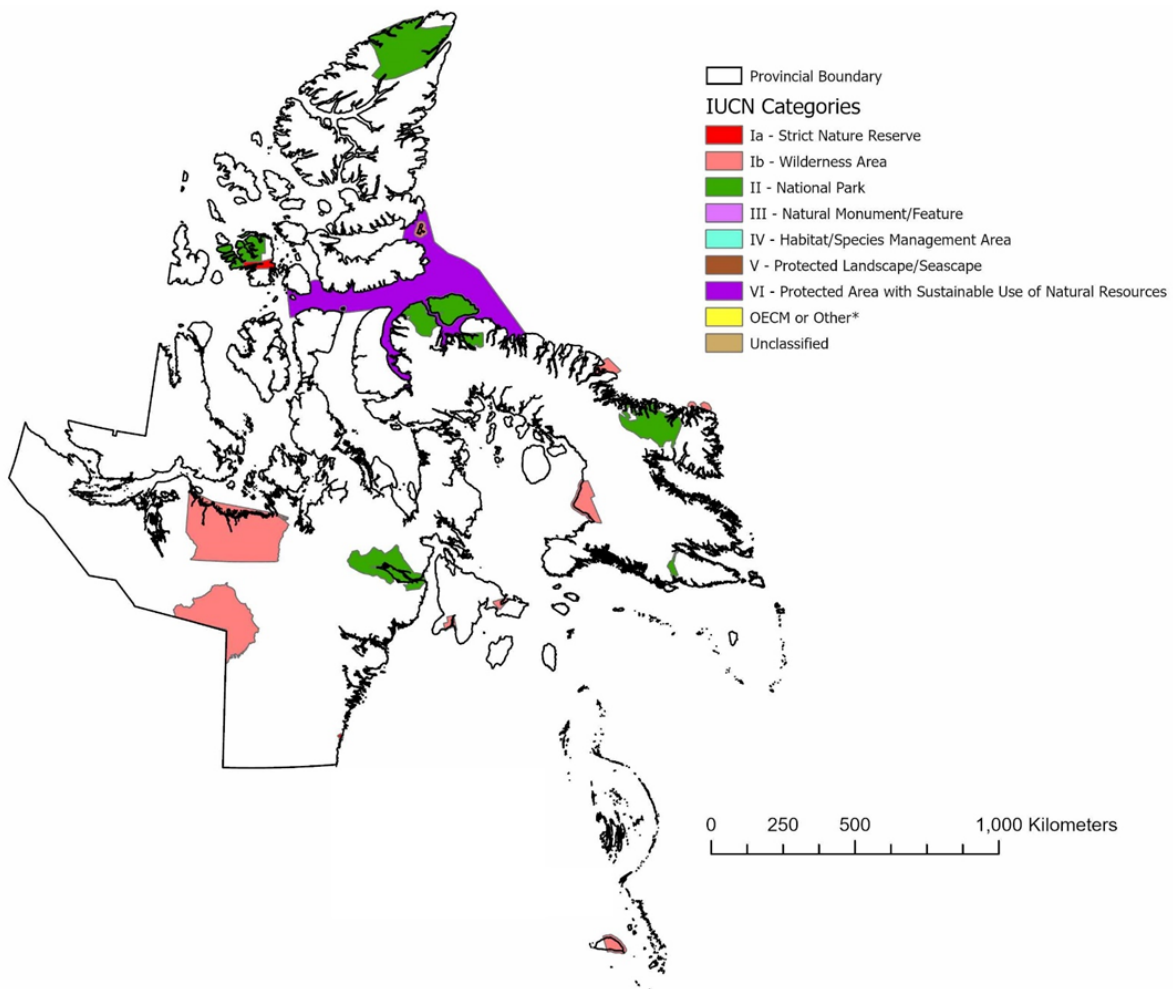


**Figure E10.** Protected and Conserved Areas by IUCN Category in Newfoundland and Labrador

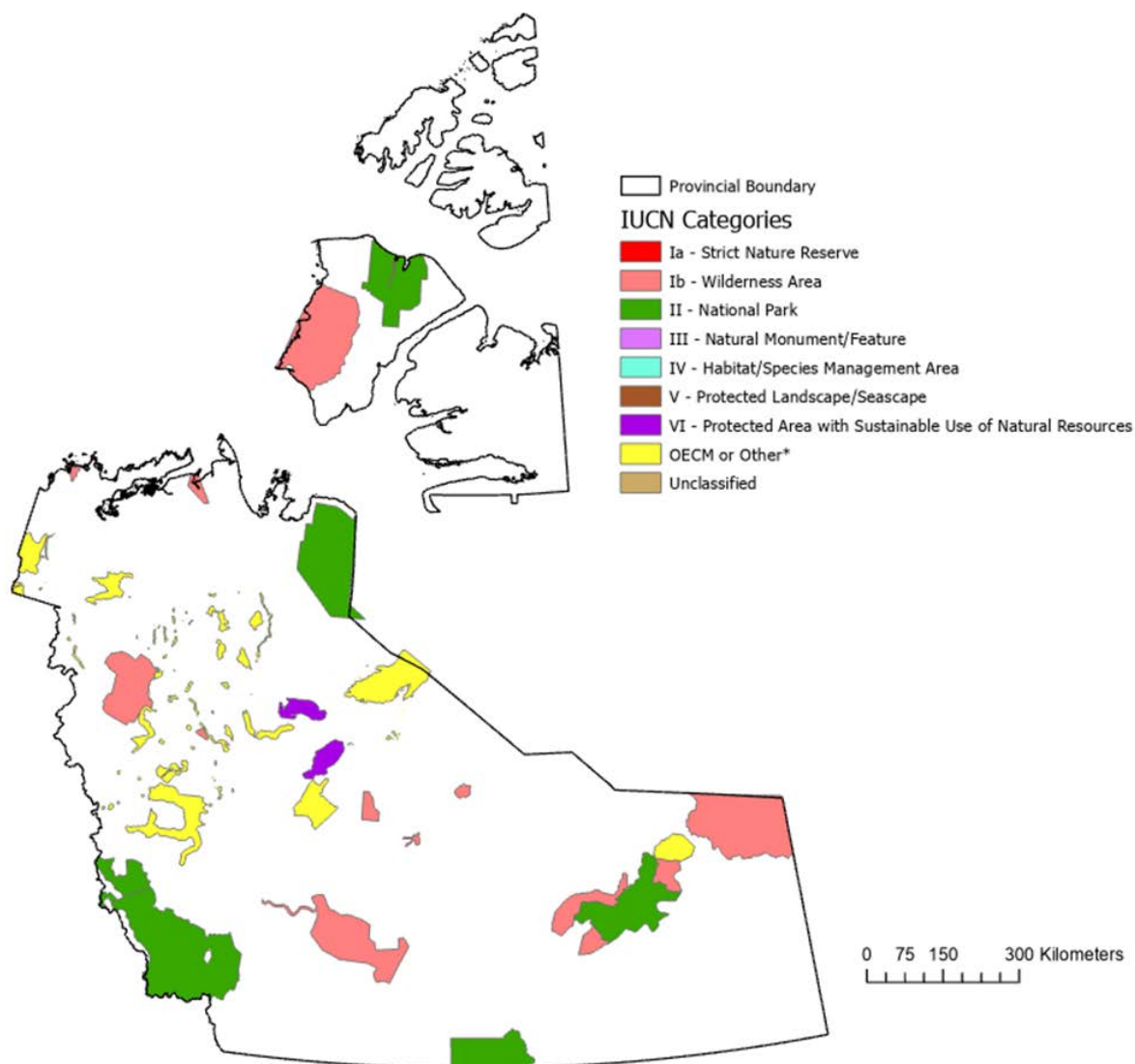




**Figure E11.** Protected and Conserved Areas by IUCN Category in Yukon



**Figure E12.** Protected and Conserved Areas by IUCN Category in Nunavut



**Figure E13.** Protected and Conserved Areas by IUCN Category in Northwest Territories



## APPENDIX F

### LEADERS PLEDGE FOR NATURE ACTIONS

We will ensure that our response to the current health and economic crisis is green and just and contributes directly to recovering better and achieving sustainable societies; we commit to putting biodiversity, climate and the environment as a whole at the heart both of our COVID-19 recovery strategies and investments and of our pursuit of national and international development and cooperation.

- (1) We commit to the development and full implementation of an ambitious and transformational post-2020 global biodiversity framework for adoption at the 15th Conference of Parties of the UN Convention on Biological Diversity (CBD CoP 15) as a key instrument to reach the Sustainable Development Goals that includes:
  - a. A set of clear and robust goals and targets, underpinned by the best available science, technology, research as well as indigenous and traditional knowledge;
  - b. Commitments to address the direct and indirect drivers of biodiversity loss and halt human induced extinction of species, to ensure species populations recover, and to significantly increase the protection of the planet's land and oceans through representative, well connected and effectively managed systems of Protected Areas and Other Effective Area-Based Conservation Measures, and to restore a significant share of degraded ecosystems;
  - c. Commitment to the full and effective participation of indigenous peoples and local communities in decision making and recognition of their rights, as acknowledged in relevant national and international instruments;
  - d. Commitments backed up by a strong monitoring and review mechanism, and means of implementation commensurate with the challenge of halting and reversing the decline in biodiversity;
  - e. Commitments to strengthen the cooperation among relevant multilateral environmental agreements, international organizations and programmes to contribute to effective and efficient implementation of the biodiversity framework.
  
- (2) We will re-double our efforts to end traditional silo thinking and to address the interrelated and interdependent challenges of biodiversity loss, land, freshwater and ocean degradation, deforestation, desertification, pollution and climate change in an integrated and coherent way, ensuring accountability and robust and effective review mechanisms, and lead by example through actions in our own countries.
  
- (3) We commit to transition to sustainable patterns of production and consumption and sustainable food systems that meet people's needs while remaining within planetary boundaries, including by:
  - a. Accelerating the transition to sustainable growth, decoupled from resource use, including through moving towards a resource-efficient, circular economy, promoting behavioral changes and a significant scale-up in nature-based solutions and ecosystem-based approaches on land and at sea;
  - b. Supporting sustainable supply chains, significantly reducing the impact on ecosystems caused by global demand for commodities and encouraging practices that regenerate ecosystems;
  - c. Shifting land use and agricultural policies away from environmentally harmful practices for land and marine ecosystems and promoting sustainable land and forest

management to significantly reduce habitat loss, unsustainable land use change, deforestation and fragmentation, achieve land degradation neutrality and maintain genetic diversity;

- d. Eliminating unsustainable uses of the ocean and its resources, including illegal, unreported and unregulated fishing as well as unsustainable fishing and aquaculture practices, and working collaboratively to develop a coherent global approach to protect the ocean and sustainably use its resources, including by aiming to conclude at the next intergovernmental conference, the negotiations for an effective international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction;
  - e. Significantly enhancing our efforts to reduce the negative impacts of invasive alien species;
  - f. Significantly reducing pollution in the air, on land, in soil, freshwater and the ocean, in particular by eliminating plastic leakage to the ocean by 2050 as well as pollution due to chemicals, excess nutrients and hazardous waste, including through the strengthening of global coordination, cooperation and governance on marine litter and microplastics, with focus on a whole life-cycle approach and supporting an ambitious outcome for the process on the Strategic approach and sound management of chemicals and waste beyond 2020;
- (4) We commit to raising ambition and aligning our domestic climate policies with the Paris Agreement, with enhanced Nationally Determined Contributions and long-term strategies consistent with the temperature goals of the Paris Agreement, and the objective of Net Zero greenhouse gas emissions by mid-century, strengthening climate resilience in our economies and ecosystems and promoting convergence between climate and biodiversity finance.
  - (5) We commit to ending environmental crimes which can seriously impact efforts to tackle environmental degradation, biodiversity loss, and climate change, and can undermine security, the rule of law, human rights, public health, and social and economic development. We will ensure effective, proportionate and dissuasive legal frameworks, strengthen national and international law enforcement and foster effective cooperation. This also includes tackling environmental crimes involving organized criminal groups, such as the illicit trafficking of wildlife and timber, as serious crimes, acting along the whole supply chain, reducing the demand for illegal wildlife, timber and by-products, and engaging with local communities to ensure sustainable solutions for people, nature and the economy.
  - (6) We commit to mainstreaming biodiversity into relevant sectoral and cross-sectoral policies at all levels, including in key sectors such as food production, agriculture, fisheries and forestry, energy, tourism, infrastructure and extractive industries, trade and supply chains, and into those key international agreements and processes which hold levers for change, including the G7, G20, WTO, WHO, FAO, and UNFCCC and UNCCD. We will do this by ensuring that across the whole of government, policies, decisions and investments account for the value of nature and biodiversity, promote biodiversity conservation, restoration, sustainable use and the access to genetic resources and the fair and equitable sharing of benefits arising from their utilization.
  - (7) We commit to integrating a “One-Health” approach in all relevant policies and decision-making processes at all levels that addresses health and environmental sustainability in an integrated fashion.

- (8) We will strengthen all financial and non-financial means of implementation, to transform and reform our economic and financial sectors and to achieve the wellbeing of people and safeguard the planet by, inter alia:
- a. Incentivizing the financial system, nationally and internationally, including banks, funds, corporations, investors and financial mechanisms, to align financial flows to environmental commitments and the Sustainable Development Goals, to take into account the value of nature and biodiversity, promote biodiversity conservation, restoration and its sustainable use in their investment and financing decisions, and in their risk management, as well as including through encouraging the use of taxonomies;
  - b. Enhancing the mobilization of resources from all sources, public and private, maximizing the effectiveness and efficiency of the use of existing resources and facilitating access to support where needed, in order to significantly scale up support for biodiversity, including through nature-based solutions, which contribute effectively not only to the achievement of biodiversity and climate goals, but to sustainable development, livelihoods and poverty alleviation where needed;
  - c. Eliminating or repurposing subsidies and other incentives that are harmful to nature, biodiversity and climate while increasing significantly the incentives with positive or neutral impact for biodiversity across all productive sectors;
  - d. Improving the efficiency, transparency and accountability in the use of existing resources, including through co-benefits, finance tracking and reporting frameworks.
- (9) We commit that our approach to the design and implementation of policy will be science-based, will recognize the crucial role of traditional and indigenous knowledge as well as science and research in the fight against ecosystem degradation, biodiversity loss and climate change; and will engage the whole of society, including business and financial sectors, indigenous peoples and local communities, environmental human rights defenders, local governments and authorities, faith-based groups, women, youth, civil society groups, academia, and other stakeholders.





## **APPENDIX G**

### **ACRONYMS**

AB	Government of Alberta
AOP	annual operating plan
BC	Government of British Columbia
BfN	Bundesamt für Naturschutz (German Federal Agency for Nature Conservation)
CBD	Convention on Biological Diversity
CCEA	Canadian Council on Ecological Areas
CCFM	Canadian Council of Forest Ministers
CESCC	Canadian Endangered Species Conservation Council
CFS	Canadian Forestry Service
CITES	Convention of International Trade in Endangered Species and Wild Fauna and Flora
COP	Conference of the Parties
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPCAD	Canadian Protected and Conserved Areas Database
DST	Decision Support Tool
EC	Environment Canada
ECCC	Environment and Climate Change Canada
ESA	Ecological Society of America
FAO	Food and Agriculture Organization (of the United Nations)
FMA	forest management agreement
FMP	forest management plan
FPAC	Forest Products Association of Canada
FSC	Forest Stewardship Council
FSP	forest stewardship plan
GBO	Global Biodiversity Outlook
HCV	high conservation value
ICCA	Indigenous and community conserved area
ICE	Indigenous Circle of Experts
IPBES	Intergovernmental (Science-Policy) Platform on Biodiversity and Ecosystem Services
IPCA	Indigenous Protected and Conserved Area
IUCN	International Union for Conservation of Nature
IUPN	International Union for the Protection of Nature
MCEC	Manitoba Clean Environment Commission

MEA	Millennium Ecosystem Assessment
MECC	Minister of Environment and Climate Change
MNDMNRF	Ministry of Northern Development, Mines, Natural Resources, and Forestry
MNRF	Ministry of Natural Resources and Forestry
MSSC	Minister of Supply and Services Canada
NAP	National Advisory Panel
NBSAP	National Biodiversity Strategy and Action Plan
NCASI	National Council for Air and Stream Improvement, Inc.
NFI	National Forest Inventory
NFS	National Forest Strategy
NGS	National Geographic Society
NRCan	Natural Resources Canada
OECM	Other Effective Area-Based Conservation Measure
OGMA	old-growth management area
OMNR	Ontario Ministry of Natural Resources
OPM	Office of the Prime Minister
PA	protected area
PPA	privately protected area
QC	Government of Québec
SARA	Species at Risk Act
SCBD	Secretariat of the Convention on Biological Diversity
SFI	Sustainable Forestry Initiative
SPN	Société du Plan Nord
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States (of America)
WCMC	World Conservation Monitoring Centre (UNEP)
WCPA	World Commission of Protected Areas (IUCN)