Utilizing Indigenous Conservation in Canada to Strengthen Contributions to Environmental Targets and Reconciliation Goals

by

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Authors Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Indigenous-based conservation provides enhanced safeguarding techniques and hands-on stewardship over lands, waters, and ice, resulting in numerous environmental welfare and reconciliation processes that can be applied to national and international targets and goals. This research utilizes a variety of data to examine the impact that Indigenous conservation has on environmental welfare and reconciliation efforts. The approach employs a literature review followed by two case studies based on one Indigenous-led conservation area and one cooperatively governed conservation area in Canada. The analysis determines how Indigenous conservation methods have contributed to the social and economic wellbeing of local Indigenous Peoples and the enhanced safeguarding effects these conservation areas have on the environment, biodiversity, and climate regulation. The research examines how Indigenous conservation methods are beneficial for both reconciliation and environmental welfare and the subsequent recommendations are tailored towards their implementation, protection, and expansion. The results will have significant political, social, and environmental implications as this research has implications to establish the significance of Indigenous-based conservation methods and Traditional Knowledge, and further suggests that governments with local Indigenous populations may utilize Indigenous-led and co-governed conservation areas to strengthen contributions to their national and international environmental targets and reconciliation goals.

KEYWORDS: Indigenous, Conservation, Environmental Targets, Reconciliation Goals, IPCA

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I would like to acknowledge the privilege I was provided for conducting this thesis at the University of Waterloo, which is situated on the Haldimand Tract, the traditional and unceded lands of the Anishinaabe, Haudenosaunee, and Neutral Peoples.

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I would also like to acknowledge how grateful I am to the Peoples of the Tla-o-qui-aht Tribal Park, British Columbia and the Edéhzhíe National Wildlife Area / Dehcho Protected Area, Northwest Territories, and all other Indigenous Peoples taking it upon themselves to protect the natural environment for the benefit of current and future generations.

I am very thankful to my family and friends who have supported me throughout not only the entire process of this degree, but my whole life.

Professional Acknowledgements

There is controversy in society, academia and even politics over many of the terms used in this paper that may support colonial constructs and views. For example, conservation is based on a historical social construction of "wilderness" that began with land dispossession of Indigenous Peoples, and the term "traditional" to represent Indigenous knowledge has been debated in regard to both positive and negative connotations. I would like to acknowledge that this thesis is embedded with many controversial terms and ideals of environmental movements that may not represent all viewpoints.

This creation of this thesis did not involve direct engagement with Indigenous communities in Canada and therefore may be limited in reflecting the views of First Nations, Inuit, and Métis Peoples.

Additionally, I would like to acknowledge that some subject matter may be triggering for certain audiences such as Canada's history of colonization and assimilation of Indigenous Peoples, and I advise viewer discretion. (Indigenous Crisis Support Lines: Where to Find Help)

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List of Abbreviations

C2A	Calls to Action
CBD	Convention on Biological Diversity
CKS	Cultural Keystone Species
DFO	Department of Fisheries and Oceans
ECCC	Environment and Climate Change Canada
IPCA	Indigenous Protected and Conserved Area
IGP	Indigenous Guardian Program
IRH	Indigenous Rights Holders
NDC	Nationally Determined Contributions
NGO	Non-Governmental Organization
NRC	Natural Resources Canada
SDG	Sustainable Development Goal
TK / TEK	Traditional Knowledge, Traditional Ecological Knowledge, local knowledge, Indigenous knowledge/science
TRC	Truth and Reconciliation Commission
UNDA	United Nations Declaration Act (Canada)
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
WK	Western Knowledge

Chapter One: Introduction

Introduction

Within the borders of Canada, we are fortunate to find 9% of the world's total forest area, 25% of the world's wetlands and an estimated 80,000 biodiverse species (Ray et al., 2021). However, around the world, including in Canada, biodiversity is in decline and conservation is in crisis. Currently, livestock make up 62% of the world's mammal biomass; humans account for 34%; and wild mammals are just 4%, with wild mammal biomass declining an estimated 85% since the arrival of humans (Ritchie, 2022). In Canada, habitat loss and degradation from the conversion of ecosystems for human development has threatened biodiversity, resulting in one in five wild species being in danger of extirpation from Canada (CESCC, 2022; CESD, 2022). Just as our biological biodiversity is being lost, cultural biodiversity in Canada and around the world is being lost. Just like with biodiversity, modernization, commercial development, and the lack of secure rights and education are eroding the world's Indigenous cultures and practices, creating a constant threat to the cultural survival of vital knowledge systems and languages, (IIED, 2020). In Canada, a long history of assimilatory actions and policies such as the Indian Act and residential schools have resulted in major injustices and ongoing intergenerational trauma for Indigenous Peoples, causing higher rates of substance abuse, incarceration, inadequate livelihoods, and poor living conditions (United Nations Chronicle, n.d.). These injustices have caused a necessity for increased support and reconciliation between the First Nations, Métis, and Inuit populations with Canadian governments. With the loss of Indigenous culture through assimilatory actions and policies in Canada, we also lose knowledge that is critical to addressing the global and national biodiversity crisis (IIED, 2020).

IPCAs are Indigenous-led long-term commitments to sustainability that utilize Indigenous rights, responsibilities, and knowledge to protect biodiverse species, enhance conservation outcomes and improve both the livelihoods of and the relationships with Indigenous Peoples (Indigenous Leadership Initiative, n.d.). Recent research suggests that when Indigenous People are engaged and responsible for conservation areas, there is a cultural approach accompanied with the use of Traditional Knowledge (TK) which has been suggested to increase environmental outcomes established through more intensive through on-site involvement and comprehensively established conservation methods (IISD, 2022). Research suggests that this is advantageous towards environmental protection and the adaption, mitigation, and reduction of climate risks and biodiversity enhancement (IISD, 2021). Indigenous Protected and Conserved Areas (IPCAs) provide all the ecosystem services of conservation such as carbon storage, cleaner air and water, biodiversity enhancement, resource management, and natural disaster mitigation (Selinske et al., 2021). Additionally, Indigenous-based conservation is thought to aid in reconciliation with local Indigenous Peoples as it provides them a role in decision making, increased autonomy, contributes to inherent and treaty rights, and the utilization of TK and practices (Wilson-Raybould & Sinclair, 2019). There is very little on this, however existing studies suggest that IPCAs provide enhanced

conservation techniques and hands-on stewardship opportunities over lands, waters, and sacred sites, that may result in numerous environmental welfare and reconciliation processes that can be applied to national and international targets and goals. This research aims to uncover how IPCAs can be utilized to strengthen these contributions to Canadas's process of meeting both binding and non-binding environmental targets and reconciliation goals.

Problem Statement

Canada has currently not met multiple binding environmental international obligations; including, the Paris Climate Agreement and the Convention for Biological Diversity (CBD), as well as numerous customary commitments; including, Sustainable Development Goals 13 Climate Action, 14 Life Below Water and 15 Life on Land. These international obligations are reflected at a national and provincial level through Nationally Determined Contributions (NDC) and Canada Target 1, which have set numerous national-level goals which have not as of yet been met. When conservation areas are inadequately protected, it can lead to alteration of conservation lands to meet the needs of urbanization, industrialization, and deforestation, which causes a string of negative consequences such as contributing to climate change, biodiversity loss, depletion of natural resources and pollution of air and waters (Seto et al., 2017). Many government-owned and managed conservation areas were originally developed by displacing and criminalizing local Indigenous groups from their own land, contributing to colonization and genocide of Indigenous Peoples in Canada (Parks Canada Agency, 2022b). Canada has also not met a majority of reconciliation-based declarations and customary commitments with Indigenous Peoples including the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), the Truth and Reconciliation Commission (TRC) Calls to Action, multiple treaties and self-government agreements found nation-wide and Sustainable Development Goals 8 Decent Work and Economic Growth and 10 Reduced Inequalities. Reconciliation with Indigenous Peoples in Canada is integral after years of creating severed ties and mistrust through colonization, genocide, and assimilatory policies and actions including through the use of residential schools and the Indian Act (Crown-Indigenous Relations and Northern Affairs Canada, 2022a).

Research Questions

1. What has past research revealed about the incorporation of Indigenous knowledge in conservation practices, and the significance of this incorporation for wider processes of reconciliation?
2. How do IPCAs strengthen contributions towards meeting national and international obligations for environmental targets and reconciliation goals?
3. What are the policy recommendations that emerge to advance the creation and protection of IPCAs?

Research Objective and Contributions

The objective of this research is to establish a precedent for the establishment, expansion, and protection of Indigenous-based conservation areas in Canada, in addition to recognizing their significance and providing support to Indigenous-led conservation areas that have been unilaterally established by Indigenous Rights Holders. The argument being that although not managed by government departments entirely or at all, Canadian governments, citizens, and Indigenous Peoples all benefit greatly from Indigenous-based conservation areas through the resulting enhanced ecosystem services and strengthened contributions to national and international reconciliation goals and environmental targets.

Information compiled and the subsequent recommendations developed from this research will be beneficial to numerous groups including academia, provincial, territorial, and federal levels of the Canadian government, environmental ENGOs, Indigenous Nations and supporting groups, and theoretically to other governments with large Indigenous populations. The research being proposed is currently underdeveloped but represents an expanding research topic in academia, with a majority of research related to Indigenous conservation being utilized to meet environmental targets and reconciliation goals being primarily related to Canada Target One or UNDRIP. As a more scarcely researched topic, this research can provide evidence regarding the overall significance and capabilities of Indigenous conservation in western politics and towards the recognition of importance for Indigenous governments sovereignty and partnerships with Canadian governments. The Canadian government could sequester this research to provoke additional considerations, requirements and funding into the development and ongoing support of Indigenous-based conservation areas with or without the assistance of government departments and agencies. Similarly, environmental-based ENGOs which control large swaths of privatized land should seek the additional benefits of utilizing TK and stewardship from local Indigenous Peoples to more adequately protect conservation areas and species at risk. The aim is that this research would elucidate the benefits of providing Indigenous Peoples to have either partial or full sovereignty over lands that they have resided on for generations, providing a legitimized nation to state recognition of the use of language, culture, knowledge, and legal systems to protect and promote inherent relationships with the lands, waters, and ice (IEN, 2020). This includes not only proactively upholding treaty, inherent and constitutional rights of Indigenous Peoples, but also the benefits the Canadian government would receive in the form of strengthened contributions to national and international reconciliation goals and environmental targets given the urgency of reaching those that are both legally and non-legally binding. Additionally, if the research provided is proved beneficial in the Canadian context, additional countries with large Indigenous populations could utilize the results to increase their own levels of Indigenous-based conservation.

Thesis Outline

This thesis begins with introductory dressings to determine what the research seeks to address and why it is relevant in regard to present national interests to meet both national and international environmental targets and reconciliation goals. Chapter two reviews methodology carried out in the thesis in further detail, including any identified limitations from chapters three and four. The third chapter of this thesis consists of a literature review which entails a methodical approach to determine how conservation areas contribute to environmental goals, Indigenous Peoples past and present relationship with Canada to determine the ongoing necessity for reconciliation, how Indigenous conservation can be represented and its ability to improve environmental outcomes and reconciliatory practices, and which national and international targets and goals are strongly contributed to by establishing and expanding systems of Indigenous conservation in Canada. The fourth chapter will explore two case studies of different approaches to Indigenous-based conservation areas in Canada to further examine the benefit of establishing Indigenous-based conservation areas while demonstrating multiple methods of establishment. Chapter five reviews the results derived from the literature review and case studies followed by three concluding recommendations based on the preliminary research questions, overall research, and final results. Chapter six concludes the thesis by answering the research questions posed at the beginning of the thesis and poses further possibilities for additional research based on overarching limitations.

Chapter Two: Methodology

2.1. Study Design and Data

This thesis executed a scoping review approach of data collection and analysis to form a comprehensive understanding of IPCAs, their impacts and their benefit in relation to strengthening Canada's contributions to environmental targets and reconciliation goals. The thesis consists of a literature review which presents an overview of a very large and diverse body of literature, which is then followed by secondary research through the exemplification of case studies of two Indigenous-based conservation areas in Canada. Combining the findings from the literature review and the additional examples provided by the two case studies resulted in recommendations to the target audiences defined by the contribution of the research section in the introductory dressings. The goal of the first phase for this method is to identify and predict what will be further explored in the secondary follow-up phase of the study. Both phases of the study are then connected to generate the most accurate results regarding the impact Indigenous-led conservation has on environmental and reconciliation targets in Canada, with the results including answering the three original research questions followed by the three proposed recommendations.

2.2. Data Collection

The literature review portion of this thesis was informed by publicly available scholarly and grey literature, including reports that are authorized by Indigenous communities. The review involves an in-depth analysis of four themes that relate to the creation, implications, and successes of IPCAs in specific relation to Canada. These themes relate to how IPCAs can be utilized by Canadian governments to meet national and international targets and goals through their continued enhancement, development, and ongoing funding and recognition. The first theme is to measure conservations impact on environmental welfare in order to establish that conservation is an extremely viable method to combating the effects of climate change and human inferences, proving it is of great importance to meeting both conservation and climate change related environmental targets at both a national and international standing. This includes exploring the different ecozones Canada possesses to determine where the best locations of establishment are for future conservation areas in addition to the vast variety of ecosystem services each ecozone provides for humans and its varying species. The second theme explores the past and present relationship between Canada and Indigenous Peoples to obtain knowledge about Indigenous Peoples rights and opportunities through declarations, laws, and treaties, in addition to outlining Canada's need for meeting reconciliation goals due to a past of colonization and assimilatory actions severing these relationships. The third theme of the literature review examines Indigenous-based conservation in terms of the differences and similarities between traditional and western knowledge to provide a comparison between the different conservation techniques, in addition to the evidence of considerable benefits provided by Indigenous-based conservation from the three pillars of environment, society and economic, and the different methods for involving Indigenous Peoples in conservation. The final theme determines which environmental targets and reconciliation goals are related to the benefits provided by Indigenous-based conservation.

To support and reinforce the findings presented in the literature review, two Indigenous-led conservation areas in Canada were chosen as case studies to present two different methods of establishment in addition to two separate ecozones. In this exploratory follow-up, the purpose is to explore more directly how Indigenous TK benefits conservation impacts and how each Indigenous groups autonomy or participation in these conservation areas has altered their reconciliation processes with Canada. The two chosen case studies are the Tla-o-qui-aht Tribal Park, British Columbia, and the Edéhzhíe National Wildlife Area / Dehcho Protected Area, Northwest Territories. These areas were considered based on the characteristics of their provinces and methods of establishment. Tla-o-qui-aht Tribal Park was originally created as a response to unfair logging practices of old growth forests in the 60s-70s, with Tla-o-qui-aht Chiefs declaring the land as a Tribal Park without the assistance or cooperation from the Canadian government (Barr, 2021). The province of British Columbia was selected for its relation to the west coast and its high level of biodiversity and number of species at risk. Edéhzhíe National Wildlife Area and Dehcho Protected Area was created in conjunction with government affiliations, representing a model of shared governance that still follows the basic principles of an IPCA. Although following the lead of Indigenous knowledge and management practices, funding and decision making still falls partially under government practices. This case study was specifically selected as it was the first official IPCA to be declared by the Government of Canada.

2.3. Reliability and Limitations

The literature review contains a variety of sources including academic papers, professional journals, peer reviewed works, news articles, book chapters, conference proceedings, and statistical data from government websites. This includes many trusted sources including Government of Canada departments (Statistics Canada, ECCC, PCA, DFO, etc.), subject experts such as Ed Wilken regarding ecozones, peer reviewed papers from accredited universities, and first-hand accounts, quotes, and opinions from Indigenous Peoples. In multiple cases, references derived from older publications, in which case I would include a secondary source to corroborate findings from the older resource. However, the primary source used for defining ecozones (Ecological Stratification Working Group. 1995) was written in 1995, however I consider it acceptable as Canada's geography has not been significantly altered in the last 27 years but do acknowledge that changes in temperatures from climate change and changes in landscapes from deforestation may cause minor changes to ranges of ecozones in time. It is also important to note that section 3.3.2 on Indigenous rights and history in Canada does not involve a complete timeline of the rights and injustices of Indigenous Peoples in Canada, just the most significant points in relation to environmental and reconciliatory developments. Another limitation applicable to the thesis in its entirety, addressing conflicts arising from cultural bias and other personal issues, which is always a possibility when working with BIPOC groups. To avoid bias and respect cultural sensitivity, a disclaimer was included at the beginning of this thesis to acknowledge the fact that this thesis was created without advice and guidance from external Indigenous individuals or

groups, in addition to the disclaimer that there may be sensitive subject matter discussed such as colonization and assimilatory actions taken by Canada towards Indigenous Peoples.

The original implications associated with choosing the case study areas was attempting to find already established IPCAs in Canada to document their successes, however this proved to be difficult as many are still developing or are not officially recognized under Canadian law as they are self-declared by Indigenous governments. The lack of a web-based system that comprised proposed and established (both co-managed and autonomous) Indigenous protected areas made it difficult to originally decide which case studies to utilize for this thesis. However, there is a website that comprises investments by the federal government towards Canada Target 1 Challenge, many of which include Indigenous methods in some capacity (Canada's Nature Legacy, 2021). This limitation came into play when determining which two case studies would be chosen for review of contributions, which ended up being beneficial as the proposed recommendations include addressing this limitation. Originally three case studies and three back up case studies were chosen with the intent of conducting in-person interviews with the nations associated with each conservation area, however when reaching out to Indigenous-based conservation areas in the preliminary stages of thesis composing, it became evident that after the COVID-19 pandemic, Indigenous nations and groups were overwhelmed by requests from individuals, governments, and organizations. Responses received in response to a possible interview were not positive and it became evident that for a master's level thesis, there was not enough time to conduct interviews. In response to these findings, I chose two case studies to showcase and recommended in the conclusion that further research done comprises direct on the land interviews established within an ethical space.

Chapter Three: Literature Review

3.1. Introduction

There are three pillars of sustainability which overlap and are interconnected; they are environmental, social, and economic (Hamoud Ismail et al., 2018). This literature review will describe how environmental targets can be met by the pillar of environmental sustainability through providing evidence of the benefits of conservation practices. The review will continue to acknowledge how reconciliation targets support both the social and economic pillars of sustainability by determining how the emerging rights and opportunities for Indigenous Peoples in Canada have contributed to enhanced reconciliation practices, but acknowledging there is still much work to be done. The review will conduct further analysis into how IPCAs enhance the contributions towards environmental targets and reconciliation goals here in Canada through an examination into their methods and practices, evidence of enhanced conservation and reconciliation outcomes, and finally their methods of establishment. Finally, the review will acknowledge the most prevalent environmental targets and reconciliation goals that IPCAs can be utilized by to strengthen Canada's national and international contributions, proving IPCAs importance for recognition and protection.

3.2. Benefits of Conservation

Conservation has numerous proven benefits that have been studied a great deal by academics, organizations, and governments. Conclusions of research performed determine that conservation is a requirement for ensuring the protection and restoration of wildlife and resources, administering climate, weather, and temperature regulation, providing opportunities for education and reparation, and is of key cultural significance to Indigenous populations around the world. This section will firstly discuss the physical, social, and economic benefits of conservation areas through a review of the Millennium Ecosystem Assessment ecosystem services. Secondly, the identification of the ecozones in Canada, their characteristics, and the ecosystem services they provide to prepare a basis for tailored recommendations of priority areas for conservation. Finally, there will be a review of the significance of species protection, including species at risk and cultural keystone species.

3.2.1. Ecosystem Services

One of the most prominent methods of establishing the benefits of conservation is through the ecosystem services popularized by the Millennium Ecosystem Assessment in the early 2000's (MEA, 2005). Ecosystem services are the benefits that wildlife or ecosystems provide to humans both directly and indirectly and are grouped into the following four categories: provisioning, regulating, cultural, and supporting. Provisioning services are the products obtained directly from ecosystems including food, fresh water, fuel, genetic resources, medicines, and ornamental resources (MEA, 2003). Regulating services are the benefits obtained from ecosystem processes such as regulation of air quality, climate regulation, water regulation and purification, erosion control, pest and disease regulation, pollination, and storm protection (MEA, 2003). Cultural

services are the nonmaterial benefits that people obtain from ecosystems including spiritual and religious values, knowledge systems, education, improved mental health, inspiration, aesthetic value, cultural heritage, recreation, and ecotourism (MEA, 2003). This service is especially important to many local Indigenous communities as they are deeply connected to nature as it sustains knowledge, a sense of place and recognition in the community as stewards of the land (UNEP, 2017). Supporting services are long-forming services that are necessary to produce all other ecosystem services such as production of atmospheric oxygen, soil formation, nutrient cycling, and habitat provisioning. These do not have immediate direct benefits on humans or wildlife but are essential for all life sustaining services on earth (MEA, 2003).

Provisioning services are dependent on the stock- the amount of the ecological good, and the flow- how much is used by humans. If the stocks are depleted by overconsumption, then the resource will fall, and humans will also suffer. Regulating, cultural and supporting services are not measured the same as provisioning services. Rather than measuring the level of production, the services are either enhanced or diminished by the ecosystem's ability to regulate, which consequently impacts the benefits or harms for humans. For example, if a large swath of forest was cleared instead of conserved, the provisioning services would provide a flow of forest products, however the stock would not replenish itself for decades to come – assuming it was left untouched. Regulating, cultural and supporting services would also be diminished causing a variety of negative consequences such as poorer air and water quality, reduced storm defence, the release of carbon dioxide that was stored irregulating the climate and temperature, loss of knowledge and often the displacement of Indigenous communities.

3.2.2. Canada's Ecozones

Canada is the second largest country at 9.985 million square kilometers and has the largest coastline in the world containing three major coastlines measuring 243 thousand kilometers (Statistics Canada, 2016). These large swaths of terrestrial and marine environments across Canada are contained across 15 different terrestrial ecozones. Ecozones are areas defined by uniform environmental conditions including climate, landforms, and soil characteristics (USEPA, 2022). Ecozones differ in respect to their environmental conditions as they do to the ecosystem services and opportunities they provide. In Canada we have five primary biomes that can be split further into 15 distinct terrestrial ecozones (Statistics Canada, 2021), they are: Tundra: Arctic Cordillera, Northern Arctic, Southern Arctic; Boreal Forest/taiga: Taiga Plains, Taiga Shield, Taiga Cordillera, Boreal Cordillera, Boreal Shield, Boreal Plains, Hudson Plains; Mountain: Montane Cordillera; Temperate Grassland: Prairies; Temperate Deciduous Forest: Atlantic Maritime, Mixedwood Plains, Pacific Maritime.

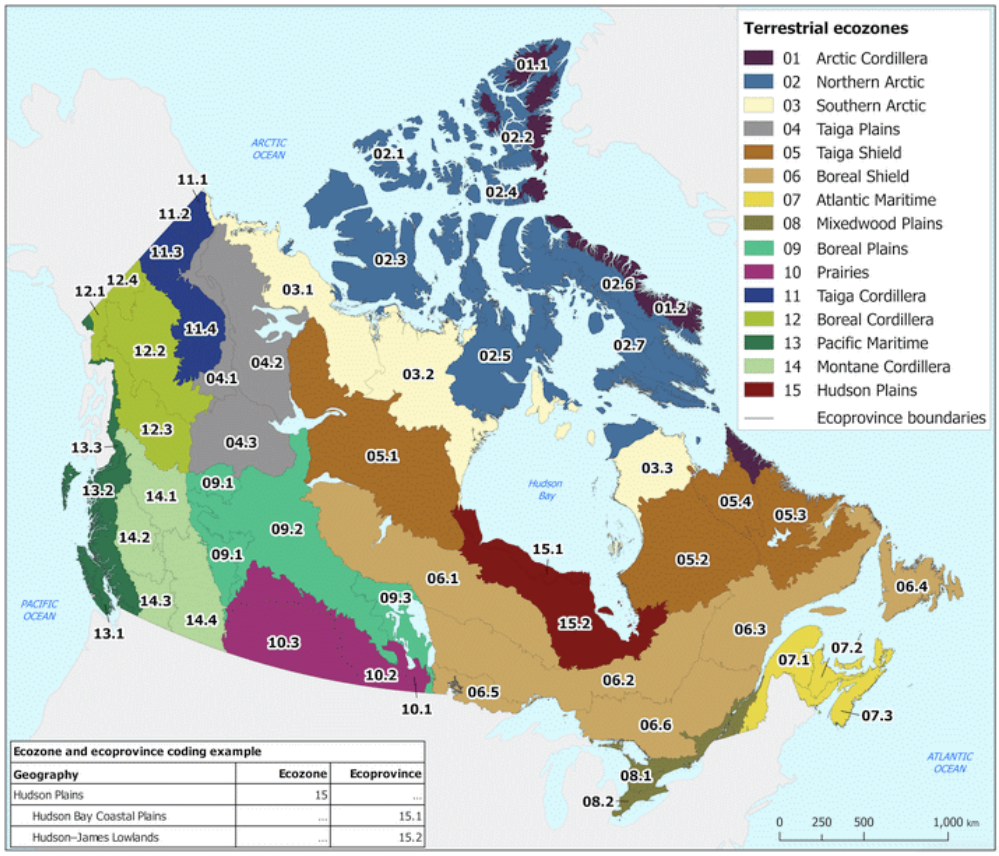

Figure One: Terrestrial Ecozones of Canada (Statistics Canada, 2021)

Tundra biomes are classified as being a treeless environment with a long cold winter and a short cool growing season consisting of little precipitation and restricted evaporation due to cold and frozen conditions (Freedman, 2018). As Canada is geographically a northern country, there are multiple ecozones in the tundra biome, namely the Arctic Cordillera, Northern Arctic, Southern Arctic (Statistics Canada, 2021). The Arctic Cordillera occupies the northeastern islands of the Northwest Territories and Labrador, exhibiting a mountain chain of alpine glaciers. The climate is extremely cold and dry, with little precipitation and scarce vegetation (ESWG, 1995). The Northern Arctic ecozone or the "polar desert" occupies the non-mountainous areas of the Arctic Islands and northern Quebec, while also dry and cold with rare precipitation, a harsh climate with high winds results in dwarfed vegetation (ESWG, 1995). The Southern Arctic ecozone reaches across the northern points of Yukon to Quebec with long cold winters and short, cool summers (ESWG, 1995). The short summers allow for sparse vegetation and provides a vegetative transition between the tundra of the arctic to the boreal forest. Little human activity takes place in these ecozones with a large majority consisting of hunting and fishing from Inuit populations. However, the population of the arctic ecosystems actually rose over 90% between 1981 and 2006, with thousands joining the population of these northern ecozones (Statistics Canada, 2008). With little vegetation or population, the tundra does not provide as many ecosystem services as other biomes, but the tundra still provides multiple services. Icecaps provide numerous regulating and supporting

services such as fresh water, reflection of the sun's light rays to maintain earth's temperature and also provide a large natural carbon sink. For the local Inuit populations, the tundra provides abundant cultural services including spiritual value, knowledge systems and cultural heritage, in addition to provisioning services such as food from hunting and freshwater. Despite the sparse vegetation, Indigenous Peoples in the north have become frontiers through a system of traditional hunter-gatherer food systems of agroecology (Latta et al., 2022b).

Boreal Forest or Taiga is the largest biome in Canada, consisting of dominating coniferous trees, cold winters and short but warm growing seasons (Freedman, 2018). Unfortunately, boreal forests are subjected to periodic disturbances due to the dense forest landscape such as wildfire and insect epidemics. Canada's largest biome is the boreal forest as it contains over half of Canada's ecozones, namely, Taiga Plains, Taiga Shield, Taiga Cordillera, Boreal Cordillera, Boreal Shield, Boreal Plains, and Hudson Plains (Statistics Canada, 2021). The Taiga Plains is comprised in southwestern Northwest Territories and Northern British Columbia and Alberta while the Taiga Shield is comprised of the northern point of Alberta to Labrador. The word taiga refers to the northern edge of the boreal forest, where there are long and cold winters with cool summers influenced by the arctic air. Vegetation primarily consists of slow growing and open conifer dominated forests with many major river systems and wetlands including the Mackenzie River Delta and Great Bear Lake (ESWG, 1995). Wildlife is similar to those from the northern tundra biome and human activity is also similar since the local economy majorly relies on primary subsistence activities such as hunting and fishing, but additionally there are developments such as mining and hydroelectric exploration. The taiga ecozones connect to Canada's largest biome, the Boreal Shield, which extends from northern Saskatchewan to Newfoundland. Long cold winters and short warm summers are often modified by large bodies of water such as the Great Lakes or Maritimes, creating more precipitation and temperature regulation for the area, resulting in an abundance of flora and fauna, however still majorly coniferous vegetation (ESWG, 1995). For humans, the boreal shield ecozone comprises a larger amount of Canada's population with many large urban towns developed around rich natural resource bases such as forestry, mining, and hydropower (ESWG, 1995). Agriculture in the area is limited, and human activities still include subsistence hunting, fishing, and trapping, however, a majority of employment revolves around retail and public administration. Conversely, some studies have actually found that while a changing climate is negatively affecting northern communities traditional hunting activities, it is actually expanding the envelope of suitable agricultural land in the boreal region (Bysouth, 2021). This may alter land use in the Boreal Forest ecozone in the future towards agricultural purposes rather than forestry or conservation efforts.

There are four more ecozones that fall into the Boreal Forest biome; however, their qualities differ slightly from the large Boreal Shield ecozone due to their geography affecting factors such as temperature and precipitation patterns. The Taiga Cordillera, in the Northern Yukon and Northwest Territories and Boreal Cordillera in Southern Yukon and Northern British Columbia

are characterized by their high mountain ranges with ranges of vegetation at different elevations and sparse populations that work primarily in mining and forestry. The Boreal Plains range from Eastern British Columbia to Manitoba and still consists of primarily coniferous species, however it is strongly influenced by continental climatic conditions, providing longer annual growing seasons than the Boreal Shield ecozone with considerably less lakes. The Hudson Plains ecozone lies primarily across Northern Ontario and is strongly influenced by the cold and moisture of the Hudson Bay and Polar air masses, making this lowland plain a cold transition between the Tundra and Boreal Forest. The Boreal Forest biome is the largest in Canada and provides countless ecosystem services including providing habitat for about two thirds of Canada's plant, animal, and micro-organism species (Canadian Wildlife Federation, 2006). The Boreal Forest based ecozones comprise numerous provisioning services for Canada's population including providing opportunities in forestry, mining, agriculture, and hydropower, in addition to providing sustenance in the form of food, fresh water, fuel, medicines and a plethora of resources. Humans and wildlife benefit greatly from the ecozones regulating processes including water regulation and purification, erosion control, pollination, storm protection, climate regulation and greatly enhanced air quality through carbon sequestration, in addition to the longer-forming supporting services including oxygen production, soil formation, nutrient cycling and habitat provisioning. Finally, the boreal ecozones provide numerous cultural services, especially for local Indigenous populations, including spiritual value, use and development of TK systems, educational opportunities, and ecotourism and recreational opportunities that result in inspiration and improved mental health. The plethora of ecosystem services can be argued as an important reason for the conservation of boreal ecozones.

Mountain biomes are similar to the Boreal Forest biome as it is dominated by coniferous trees, however the biome occurs at sub-alpine altitudes on mountains (Freedman, 2018). The Taiga Cordillera and Boreal Cordillera although mountainous, are still considered a portion of the Boreal Forest biome due to their uniform environmental conditions, including cold temperatures and coniferous dominated vegetation (Freedman, 2018). Canada's mountain biome is contained in the Montane Cordillera ecozone located in most of British Columbia and a portion of Southwestern Alberta. This ecozone is the most diverse in Canada as the climate and precipitation levels range due to changes in elevation, causing the ecozone to contain alpine tundra, coniferous forest, grasslands and freshwater lakes and river systems, including the Fraser River and Columbia River (ESWG, 1995). As a result, vegetation and wildlife are very diverse with decreasing elevation, however a majority of grasslands that existed to the south have been replaced by agriculture and urban settlements. Significant human activities take place in the ecozone including forest operations, mining, oil and gas production, farming, and tourism. Multiple national and provincial parks in addition to unilaterally established IPCAs have formed in the area to protect from increasing logging operations, wildlife sanctuary and for ecotourism.

Temperate Grassland biomes are temperate regions with a level of precipitation that allows soil to prevent desertification while also not being able to support the growth of forest (Freedman, 2018). This biome consists dominantly of grass vegetation; however, it has become an endangered ecosystem due to its high rate of conversion into agricultural land (Freedman, 2018). The Temperate Grassland is also often referred to as prairies, which in Canada contains portions of Alberta, Saskatchewan, and Manitoba. This is the most human altered biome as the open Temperate Grasslands provide characteristics highly suitable for agricultural practices (ESWG, 1995). Ecosystem services in this biome primarily are related to both plant and animal agriculture, as these practices have resulted in significant species reduction and endangerment, apart from the remaining wetlands which provide a major breeding ground for more than half of North American waterfowl (Ducks Unlimited, n.d.). With the biome being so important for food production, it is important to protect remaining wetlands not only for wildlife habitat, but for erosion control, pest and disease regulation, pollination, soil formation and nutrient cycling.

Temperate Deciduous Forest biomes are relatively moist and contain a mixture of vegetation that has adapted to changing temperatures, namely a short moderately cold winter and a longer warm summer (Freedman, 2018). The Temperate Deciduous Forest biome in Canada consists of the Pacific Maritime ecozone on the west coast and the Atlantic Maritime, Mixedwood Plains on the east coast. The Pacific Maritime ecozone on the Pacific coast of BC has some of the wettest and warmest climatic conditions across Canada. The resulting coastal forests are composed of a mixture of vegetation, where many of the trees are large and long growing to form ancient old growth forests, which store a large quantity of carbon which becomes released during intensive logging practices. With forest productivity highest in the country, a large majority of the land is subjected to harvesting and logging (ESWG, 1995). Other major activities include fishing, tourism, and transportation. The Atlantic Maritime ecozone in New Brunswick, Nova Scotia and Prince Edward Island have a more moderate, moist climate from the Atlantic Ocean which allows for productive conifer and deciduous forest growth. Humans utilize this regulated temperature for forestry and agriculture, while also participating largely in fishing and mining as primary economic mainstays in the ecozone. The Mixedwood Plains biome covers the Great Lakes and St. Lawrence River valley across Southern Ontario and Quebec. This is the most intensely used and populated biome in Canada due to its abundant rainfall and warmer climate, with approximately half of Canada's population inhabiting. This area was once heavily forested but now has been damaged by high levels of urbanization, including agriculture, industrial complexes, service industries and manufacturing. With an increase in non-porous surfaces, flooding becomes an increased risk in densely populated areas, costing insurers millions in damages every year (Brown et al., 2020). Temperate Deciduous Forests are especially important for ecosystem services directly benefiting humans due to the very large number of populations residing in the ecozones, including storm protection, air quality regulation and temperature regulation. In the Temperate Deciduous biome, ecotourism has become a very large industry as cultural benefits are recognized for its aesthetic value, improvements to mental health, recreation, and spiritual and religious connections.

All five biomes and their ecozones across Canada provide integral ecosystem services that are essential to Canadians physical, emotional, and economic survival. The Tundra biome is increasingly important for temperature regulation, carbon sequestration, reflection of the sun's rays and protection of northern wilderness and Inuit cultural and spiritual values. The Boreal Forest and Taiga biome is the largest in Canada and protects a majority of Canada's wildlife, in addition to providing large amounts of carbon sequestration, air and water purification, climate regulation, and provides prominent cultural and economic significance, especially for local Indigenous populations. Canada's mountainous ecozones provide numerous ecosystem services dependant on elevation, but most prominently provide a large amount freshwater from major river systems, increased precipitation, snow, and ice melt. Cordilleras additionally provide an excellent source of ecotourism and cultural services. Grassland biomes are majorly developed for food sustenance through plant and animal agriculture, however with the biome still containing numerous wetlands for bird migration and nesting, there are still ecosystem services that are provided through regulating and supporting services. Finally, the Temperate Deciduous Forest biome provides abundant ecosystem services while holding the majority of Canadas total population. With a large majority of Canada's population residing in this biome, it provides the opportunity for urban parks that assist with multiple regulating and cultural services including flood management, air quality regulation, aesthetic value, improved mental health and recreation. Each biome has numerous ecosystem services that can be protected and enhanced through appropriate conservation advances, which are tailored further by recommendation two.

3.2.3. Species Protection

Plants, animals, insects, and microorganisms all provide essential ecosystem services but are constantly at risk from overexploitation, energy production, pollution, climate change, invasion and disease, human disturbances, urbanization, transportation, geological events, agricultural activity, and system modifications (WWF Canada, 2020). The key factor of these overlapping risks is that they are exacerbated by anthropogenic activity which has shifted ecosystems' natural equilibriums. When ecosystems thrive, they provide ecosystem services which benefit both wildlife and humans, many of these services would not be possible without species protection. For example, climate regulation services occur primarily from the sequestration of carbon including trees and other plant species in terrestrial environments and phytoplankton, whales, and oysters in marine environments. Another example of species led ecosystem services is pollination services. Insects, birds, and small mammals are integral to spreading pollen and seeds that support the pollination process and provide humans with over half the world's agricultural yield (Klein et al., 2007).

Species may also provide significant cultural ecosystem services through the Indigenous utilization of cultural keystone species. Cultural keystone species play important roles in Indigenous communities and range from one culture to another. These species are embedded into Indigenous

People's cultural traditions and narratives, including stories, dances, and ceremonies, and are depended upon for necessities of life such as food, clothing, shelter, fuel, and medicine (Garibaldi and Turner, 2004). In terms of both conservation efforts and cultural persistence, cultural keystone species are integral to protect, however, the characterization of these species is complex as the cultural significance of a species varies depending on a variety of factors. This includes access to lands and resources, knowledge transmission, natural disturbances, population fluctuations and economic systems (Garibaldi and Turner, 2004). In other words, the identification of cultural keystone species is dependent on communications with each Indigenous Nation to determine which species are of cultural significance to them. Communication, direct participation, and decision-making from Indigenous Right Holders aids in determining both a species ecological significance and related traditional and land-based knowledge that has been cultivated for their protection.

To monitor the status of species protection and provide a precedent for the legal protection of wildlife, the Government of Canada created the Species at Risk Act in 2002 which has since spurred hundreds of critical habitat orders, protection statements and descriptions which have been utilized to protect species at risk in certain areas through the development of recovery strategies (NRC, 2023b). The process begins with the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), an independent advisory panel consisting of academic, government and non-governmental organizations meet twice a year to assess the status of wildlife species at risk of extinction in Canada (COSEWIC, 2021). This includes an Aboriginal Traditional Knowledge Subcommittee which would assist in evaluating species through TK systems in addition to better identification of cultural keystone species. Species, or certain populations of a species, are evaluated and ranked under one of the following categories: extinct, extirpated, endangered, threatened, special concern, data deficient or not at risk (COSEWIC, 2021). After COSEWIC releases its recommendation on species status, the government consults with ministers, wildlife management boards and the public to determine whether a species will be listed under SARA based on possible environmental, social, and economic concerns. Once a species is listed under the SARA, the species becomes protected under federal lands, such as national parks, First Nation reserve lands, National Marine Conservation Areas, military training areas and some migratory bird sanctuaries, and is followed by a recovery strategy or action plan depending on its status (GoC, 2020).

When a species is listed under Schedule 1 of SARA, certain measures to protect and recover the listed species will apply. This includes prohibitions against killing, harming, capturing, possessing, buying, selling, or trading individuals of the listed species or destroying their residences such as nests or dens (GoC, 2020). Recovery strategies or action plans are developed either by Parks Canada Agency, Environment and Climate Change Canada (ECCC) and/or the Department of Fisheries and Oceans (DFO) depending on jurisdiction. A recovery strategy or action plan's main job is to determine a species critical habitat in need of protection, and since species do not have

knowledge of federal boundaries, oftentimes surrounding province and public lands will need to be consulted (GoC, 2012). Parks Canada Agency creates a majority of recovery plans and manages a majority of species at risk on federal lands, including Canada's 37 national parks and 10 national park reserves (PCA, 2022a). Management of species at risk usually involves collecting information on species distribution and recovery, leading or supporting recovery teams, supporting priority actions identified in recovery strategies and educating Canadians on species at risk through public education projects and park signage (GoC, 2012). In order to maintain the integrity of all species, including species at risk and cultural keystone species both inside and outside of park boundaries, it would require partnership between all levels of Canadian government, Indigenous Peoples and governments, industry, and environmental and conservation NGOs for cooperative critical habitat and species maintenance, protection, and recovery efforts.

3.3. Emerging Rights and Opportunities for Indigenous People in Canada

The Truth and Reconciliation Commission defines reconciliation as establishing and maintaining a mutually respectful relationship between Aboriginal and non-Aboriginal peoples in this country through awareness of the past, acknowledgement of the harm that has been inflicted, atonement for the causes, and action to change behaviour (TRC, 2015b). It has been recognized that in Canada, there is a lot to reconcile for in relation to Indigenous Peoples. This includes aggressive assimilation policies, displacement of Indigenous populations from their lands, racist and outdated doctrines such as the Indian Act, Indian residential schools, disproportionate rates of incarceration and missing and murdered woman, lack of access to basic human rights including clean drinking water, education, and safety, and intergenerational trauma which has led to higher suicide rates, drug and alcohol abuse, and poor metal health (Canadian Geographic, n.d.; TRC, 2015b). Indigenous People have had their knowledge and languages stripped from them creating a detrimental loss of TK in relation to the land, have had restricted access to traditional practices such as hunting and gathering, have been forcibly removed from their lands in order to create settlements and national parks, and on average experience higher rates of environmental racism such as disproportionate siting of polluting infrastructure in their communities including pipelines, mines and higher risk of flooding hazards (Chakraborty et al., 2021; McGill, 2020; Parks Canada, 2022b). This section of the literature review will further discuss Canada's past and current legislative developments to determine the need for and the current progress of reconciliation. Since this thesis is majorly based on Canada's ability to strengthen contributions to environmental and reconciliation goals from the utilization and promotion of Indigenous conservation practices, this section of the literature review will focus majorly on reconciliation practices in Canada with attention to conservation and environmental factors related to Indigenous rights.

3.3.1. Treaties

Treaties are agreements made between the Government of Canada and Indigenous Nations, often with the inclusion of provinces and territories, which define the ongoing rights and obligations of all parties involved (CIRNAC, 2020b). Colonial governments and Indigenous Nations forged

relationships through treaties which established trade and military alliances, however over many centuries, treaties and their fostered relationships were eroded by colonial practices and policies which diminished Indigenous sovereignty, governance, culture, and traditions and further led to colonial injustices still challenging Indigenous Peoples today (CIRNAC, 2020b). The Royal Proclamation of 1763 set the foundation for the process of establishing treaties, including stating the need for consent and for Indigenous Nations to be fully compensated for any land or resources taken by colonists. Section 25 of the Canadian Charter of Rights and Freedoms recognizes and affirms the rights and freedoms for Indigenous Peoples set in the Royal Proclamation (UBC, n.d.c). However, throughout history there have been many instances where treaty rights have not been respected, especially in terms of land or resources taken. For example, a majority of Canada's National Parks were established by forcibly removing and displacing Indigenous Peoples from their lands despite Treaty rights, as was the case of Jasper Park Forest Reserve created in 1907 despite Treaty 6, signed 1876, and Treaty 8, signed 1899 (Parks Canada, 2022). In modern times, Parks Canada Agency which manages those National Parks is working towards reconciliation from these past injustices through Indigenous engagement, consultation, and acknowledgements.

The Government of Canada presently recognizes 70 historic treaties signed between 1701 and 1923 which represent 364 First Nations, in addition to 25 modern treaties signed since 1975 which represent 97 Indigenous communities (CIRNAC, 2020b). Historic treaties were formed by the British Crown with Indigenous Nations to define respective rights in regard to existing Indigenous Peoples and European settlers. Historic treaties after 1763 began to designate larger areas to the Crown and established reserve lands for Indigenous Peoples, there use today is primarily to set geographic boundaries to delineate the broad areas described within treaties where the signatory Nations can assert and exercise their Section 35 rights (CIRNAC, 2020b). Often while historic treaties were being developed, they administered tricky language as well as not respecting Indigenous recognition and use of oral histories and agreements, which Indigenous Peoples in modern times often argue that since original signatories did not understand the terms of the treaty, they should not have to follow its rules and boundaries today (The Canadian Encyclopedia, 2017). Fortunately, court rulings in Canada have continued to shape treaty relations such as *R. v, Sioux 1990*, where the Supreme Court of Canada determined that treaties "must therefore be construed, not according to the technical meaning of its words to learned lawyers, but in the sense in which they would naturally be understood by the Indians" (Supreme Court of Canada, 1990).

Modern treaties began in 1973 after the Supreme Court of Canada case *Calder et al. v. Attorney-General of British Columbia*, which recognized Aboriginal rights and title to land existed prior to colonization and resulted in the development of the Comprehensive Land Claims Policy and the first modern treaty, the *James Bay and Northern Québec Agreement* of 1975 (CIRNAC, 2020b). Modern treaties demonstrate how the process of treaty-making has continued to evolve by improved negotiation processes, clarity with respect to land and resource rights and management, and identification of how Indigenous groups may exercise and control their inherent rights and

decision-making processes. For most modern treaties the outcome of this evolving process includes more comprehensive land claim policies and resulted in 19 out of 25 modern treaties including provisions pertaining to self-governance or accompanying self-government agreements (CIRNAC, 2021). Canada's modern treaties currently cover 40% of Canada's land mass, covering topics such as ownership and management of lands, waters, and ice, harvesting fish and wildlife, environmental protection, employment and economic opportunities, capital transfers and cultural enhancement (Land Claims Agreements Coalition, n.d.a).

Although being negotiated in drastically different settings, the development and recognition of both historical and modern treaties sources a vast divide between the perspectives of the Canadian government and Indigenous Peoples. Often, the government's view of treaties encapsulates treaties as legal agreements that have surrendered Indigenous rights, while on the other hand, Indigenous Peoples often view treaties as instruments to foster relationships between autonomous groups to share land and resources (The Canadian Encyclopedia, 2017). Not all treaties recognize specifically the right to self-govern, primarily because Indigenous Nations have viewed treaties in such a manner that they didn't believe defining they are autonomous to be necessary. Even when self-governance is identified in treaties, it may not be defined or recognized by both parties to mean the same. This is evident in the *Sioux Valley Dakota Nation Governance Agreement,* which was signed by Sioux Valley Dakota Nation, the Province of Manitoba, and the Canadian federal government in order to recognize the Sioux Valley Dakota Oyate Government and establish a government-to-government relationship with Canada. A portion of the Treaty exemplifies how vague the right to self-govern is by specifically stating:

D. "The Government of Canada recognizes and affirms the right of self-government is an existing aboriginal right;
E. Sioux Valley Dakota Nation and Canada may have different legal views as to the scope and content of any right of self-government;
F. By this Agreement, Sioux Valley Dakota Nation and Canada intend to set out Sioux Valley Dakota Oyate government arrangements without taking positions about how a right of self-government may be defined at law."

In Canada, modern treaties already have the means and motive to achieve a plethora of environmental and reconciliation goals if they were more adequately recognized and effectively implemented. As an example, most if not all modern treaties include provisions for environmental protection mechanisms, such as the *Tsawwassen First Nation Final Agreement*. The Treaty signed by Canada, British Columbia and the Tsawwassen First Nation was created to provide the transfer of land and self-government jurisdiction to Tsawwassen First Nation. Chapter 15 on Environmental Management exemplifies the requirement of environmental protection under the rights of Tsawwassen First Nation through a clause that states:

> "1. Tsawwassen Government may make laws applicable on Tsawwassen Lands to manage, protect, preserve, and conserve the Environment including laws in respect of:
> a. the prevention, mitigation and remediation of pollution and the degradation of the Environment;
> b. waste management, including solid wastes and wastewater;
> c. protection of local air quality, but such laws will include standards that meet or exceed the standards set by the Greater Vancouver Regional District in bylaws in respect of the protection of local air quality; and
> d. response to an Environmental Emergency."

It can be interpreted that Tsawwassen First Nation has the right to conserve their lands to prevent environmental degradation and pollution along with their right to self-government. However, according to the Land Claims Agreements Coalition, which incorporates members from most of the modern treaties in Canada, although they negotiated and signed modern treaties in good faith, the federal government has refused to fully implement modern treaties and the necessary improvements outlined in these treaties over the last four decades (Land Claims Agreements Coalition, n.d.b). This includes implementing the treaty rights encompassing the qualities that structure IPCAs such as the right to the use, protect and manage treaty lands, waters and ice, and the species that inhabit them. The establishment and promotion of IPCAs in Canada is beneficial for undertaking the environmental-based obligations set in modern treaties as well as strengthening commitments towards national and international targets and goals.

3.3.2. Legislative Developments and Evolving Relationships

Indigenous Peoples in Canada since the time of colonization have had very slow developments for their rights, including rights in relation to voting, governance systems, land use, economic interests, harvesting access, healthy communities, safety, and culture. Not all developments to Indigenous rights in Canada have been progressive, especially in regard to earlier developments. The most prominent of which is the creation of the Indian Act first passed in 1876. The Indian Act was created to provide a way of understanding Indigenous identity, namely authorizing the federal government to regulate and govern matters concerning status, assimilation, bands, and reserves by imposing a colonial governance system where authority rested primarily with the federal Minister (UBC, n.d.b; CIRNAC, 2020a). For over a century the Indian Act has controlled Indigenous life, and even though it has undergone numerous amendments since it was first passed, it still largely retains its original form (Khushal, 2022). The Indian Act historically only applied to Indigenous Peoples that the Crown had recognized as "Indian" which originally excluded Métis, Inuit, and Indigenous women and children who married into a non-status family (Grammond, 2009). To those the act applied to, they were placed on reserves and received the rights associated with them, including an extended hunting season, less restrictions to bear arms, some medical coverage and more freedom over managing game and tobacco. For the Inuit, Métis and women and her children who had their status taken away, they did not have the right to live on reserves or access band

resources. Additionally, Indigenous women were not allowed to vote, run in Chief and Council elections, serve in the armed forces, get a college or university degree, leave their communities for long periods, or become a professional such as teacher or lawyer (BCcampus, 2019). The long-term poverty, violence and marginalization of Indigenous communities, and especially Indigenous women, due to the repercussions of the Indian Act are still being overcome today. At present, the Indian Act is still in force, remaining as a controversial piece of legislation despite the amendments removing many discriminatory clauses including amendments to gender equality in line with the Canadian Constitutions Charter of Rights and Freedoms. Numerous prevalent organizations, including the United Nations, Amnesty International and the Canadian Human Rights Commission have outwardly criticized the Indian Act as human rights abuse for its legal ability (until 1985) to extinguish Indigenous rights and title, and its continued ability to control Indigenous Peoples through the declaration of status and the rights that follow (UBC, n.d.b).

The Canadian Constitution Act was not in force until 1982, 106 years after the initial indoctrination of the Indian Act. Most prolifically for Indigenous Peoples in Canada, after over a century of the Canadian government controlling Indigenous rights, the Constitution delivered some of those rights back to Indigenous Peoples through recognition and interpretation (GoC, 1982). Section 25 and 35 of the Constitution Act are very important for Indigenous right holders in Canada. Beginning with Section 25, this portion of the Charter of Rights and Freedoms section of the act recognizes the rights and freedoms for Indigenous Peoples set in the Royal Proclamation of 1763. This is important as the Royal Proclamation has never been overruled and set the foundation for the process of establishing treaties, including stating the need for consent and that Indigenous groups are to be compensated for any land or resources taken, which in the past has not been respected, especially in terms of developing on Indigenous lands without consent (UBC, n.d.c). Section 35 of the Constitution Act states that aboriginal and treaty rights are recognized and affirmed without actually defining what those rights are (GoC, 1982). The resulting corollary of Section 35 is that the Crown must defend the rights and accommodations of Indigenous Peoples set out in treaties and land claims, including the duty to consult, the right to self-governance, the rights to use lands for traditional purposes, and right to practice their own cultures (UBC, n.d.a). Although not specifically defined in the Constitution Act, the two most common rights to emerge from Section 35 is the right to self-determination and the duty to consult. Self-determination can be defined as an ongoing process of choice to ensure that Indigenous communities and governments can each meet their social, economic, and environmental goals, not about creating a separate Indigenous state (AHRC, n.d.). The duty to consult can also be inferred from Section 35 rights, being established by the Supreme Court of Canada decision *Haida Nation v British Columbia*, 2004. (Shelsen, 2019). The duty to consult is a major theme explored by the UNDRIP, in addition to the topic of FPIC. The duty to consult is a constitutional right that holds no veto powers, however, sets the legal precedent that Indigenous Peoples must be consulted in areas that directly affect them. This law is continually evolving and being redefined which leads to a lack of clarity, causing Nations to have to deal with hundreds of referrals for consultation. This causes a

strain on many nations' human and financial resources, where Nations are often treated like stakeholders rather than legitimized decision makers (Yellowhead Institute, n.d.). FPIC is not an extension of the duty to consult, despite how it is often treated as such by Canadian governments. FPIC is a fundamental component of self-determination that requires voluntary consent of Indigenous Rights Holders given well in advance and throughout the process of an activity, while providing nations with the full and detailed information. The powers from FPIC are more limited as the international declaration it derived from is non-binding, however settler states often still see FPIC as a threat due to its declared right to not threaten "territorial integrity or political unity of sovereign states" (UNDRIP Article 46) (Patzer, 2019; Yellowhead Institute, n.d.).

A convention that is said to have paved the way for the development of UNDRIP, is the Indigenous and Tribal Peoples Convention (ILO 169) developed in 1989 by the International Labour Organization. The intention of this convention is for "recognising the aspirations of these Peoples to exercise control over their own institutions, ways of life and economic development and to maintain and develop their identities, languages and religions, within the framework of the States in which they live" which is overall similar to the ramifications that are outlined in UNDRIP (International Labour Organization, 1989). ILO 169 contains important distinctions and priorities including the right to decide development priorities, education systems, conditions of employment, customs and customary law, cross-boundary cooperation, Indigenous institutions, and self-governance (International Labour Organization, 1989). However, only 24 of 187 ILO member states ratified this convention in comparison to 144 out of 159 UN member states voting to support the adoption of the UNDRIP Declaration, with Canada being on the "no" vote for both (International Labour Organization, 2021; UNDESA, 2021). Although both instruments advocate for important rights and standards of life for Indigenous People internationally, ILO 169 was developed earlier and was a legally binding document, while UNDRIP was developed later when there was more momentum and is not legally binding, however the principles of UNDRIP can become legally binding if a country develops it into law such as Canada with the United Nations Declaration Act of 2021 (Chris Swartz, 2019; Henricksen, 2008).

After six years of hearings on Canada's residential school systems, in December 2015 the Truth and Reconciliation Commission of Canada (TRC) released its final report consisting of 94 Calls to Action to advance the process of reconciliation with Indigenous Peoples in Canada. Many of the recommendations focused on the government and industries implementation of UNDRIP, especially the process of seeking to obtain FPIC (Fasken, 2021). The creation of the TRC derived from the largest class-action settlement in Canadian history, the Indian Residential Schools Settlement Agreement. One of the elements of the agreement that was implemented in 2007 was to establish the TRC to facilitate reconciliation for the wrongdoings of the Canadian Indian residential school system (CIRNAC, 2022). The Calls to Action posed in the report are non-binding, and since its release in 2015 there is a conflicting number of Calls to Action that have been completed. The Federal government claims 17 out of the 94 Calls to Action have been

completed as of 2022, however separate organizations such as CBC, Yellowhead Institute and Indigenous Watchdog have reported lower numbers of completed actions, with all 4 organization only agreeing on 5 of the Calls to Action being completed (Indigenous Watchdog, 2022). One of these goals the federal government deemed as "fully implemented" was Call to Action 43 "We call upon federal, provincial, territorial, and municipal governments to fully adopt and implement the *United Nations Declaration on the Rights of Indigenous Peoples* as the framework for reconciliation" (CIRNAC, 2021). This however is false as the articles of UNDRIP have yet to be put fully into practice by federal, provincial, territorial, and municipal governments as an action plan is still being developed and not expected to be completed until June 2023, with implementation of the action plan to follow within the subsequent years (GoC, 2022a).

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) is perhaps the most substantial declaration developed towards improving Indigenous rights internationally. The Declaration was developed over almost 25 years of deliberations between U.N. member states, experts, and Indigenous groups, including Indigenous representatives from Canada which had been involved in the process since the 1970s (UBC, n.d.d). The Declaration was officially adopted by the U.N. General Assembly in September of 2007, with 144 countries voting to support adoption while 11 abstained and 4 countries voted against (UNDESA, 2021). The four countries which voted against were Canada, the United States, Australia, and New Zealand for what they claimed to be legal concerns; however, many academics believe that U.N. member states were worried about any undermining of their own political authority (UBC, n.d.d; Fraser-Kruck, 2009). The four countries have similar colonial pasts with Indigenous Peoples that have led to severed relationships and each country argued that UNDRIP was problematic in terms of land disputes and natural resource extraction, while other countries, including Canada's at the time Conservative-led government, argued that it may override existing laws, treaties, or human rights (Fraser-Kruck, 2009). Canada's then minister of Indian Affairs, Chuck Strahl, also commented that this document is inconsistent with Canada's Constitution (Edwards, 2007). However, many experts and academics have pointed out that the Declaration does not override existing rights or laws, it commands states to observe and enforce new and existing agreements by outlining the minimum human rights standards (UBC, n.d.d). Since the adoption of the Declaration by the United Nations General Assembly, all four no votes have reversed their positions in support of the Declaration. In Canada, British Columbia was the first to implement the UNDRIP into law prior to the federal government's development of the United Nations Declaration Act (UNDA) in 2021. British Columbia implemented UNDRIP into legislature in 2019 through the Declaration on the Rights of Indigenous Peoples (Declaration Act), becoming the first province to implement UNDRIP into law and create an Action Plan for implementation. British Columbia developed the Declaration Act Action Plan in cooperation with Indigenous Peoples, and it outlines 89 specific actions that every government ministry in B.C must take in partnership with Indigenous peoples in B.C and must implement between 2022 and 2027 (Government of British Columbia, 2022). The federal government followed suit through the creation of the United Nations Declaration on the Rights of

Indigenous Peoples Act, receiving Royal Assent in June 2021. With no Action Plan yet in place for this Act, and with many experts, academics, and Indigenous Peoples skeptical of Canada's intentions for implementing UNDRIP, there is continued scrutiny and confusion in regard to the powers that UNDRIP holds and over the Government of Canada's genuine level of endorsement. Many Indigenous Peoples see Canada's current position as a carefully crafted attempt to change public perceptions, with no intention of fully implementing the Declaration due to use of phrases like "aspirational document" and "illusion of support" in Throne speeches and statements from cabinet (Lightfoot, 2010; Henderson, 2008; Hui, 2010). Even the Supreme Court of Canada is unclear on UNDRIPs ramifications in Canada, as exhibited in recent court case *Thomas and Saik'uz First Nation v. Rio Tinto Alcan Inc. (2022)* where the British Columbia authorized the company Rio Tinto Alcan Inc. to build the Kenney Dam to produce hydropower for the smelting of aluminum, blocking the natural water flow of the Nechako River and disrupting the Saik'uz First Nation and Stellat'en First Nation asserted Aboriginal rights to fish in the watershed (DGW Law, 2022). The B.C Supreme Court stated, "it remains to be seen whether the passage of UNDRIP legislation is simply vacuous political bromide or whether it heralds a substantive change in the common law respecting Aboriginal rights including Aboriginal title." The hope moving forward with UNDA is that through consultation and cooperation with Indigenous Peoples, the Canadian government will complete and quickly implement a tangible action plan that represents and achieves the articles of UNDRIP, improving Indigenous rights and relations within Canada and ensuring federal laws and actions reflect the standards set out in the Declaration.

3.4. Indigenous Conservation: Impacts and Development

Through colonization and assimilatory actions, Indigenous Peoples have lost culture, tradition, oral histories, and heritage in fear of prosecution for not assimilating into Canadian society. The inclusion and promotion of Indigenous cultures and knowledge into social, economic, and environmental pillars allows for the advancement of Indigenous identity contributing to reconciliation practices and goals. There has been an upheaval of Indigenous participation in numerous sectors in the past few decades as Indigenous Peoples have pushed to pursue recognition in terms of rights, title and self-governance through treaties, court cases and negotiations. Additionally, legislative advancements such as UNDRIP, ILO 169 and the SDGs were developed and have begun to be put into practice in recent decades, further supporting the fight for Indigenous rights, recognition, and representation. Indigenous Peoples have been stewards of the land long before the colonization of Canada and the creation of provincial and national parks. Through the utilization of Indigenous-based conservation and the use of Indigenous TK , Indigenous Peoples have the opportunity to recover and enhance their local environment, practice cultures, utilize and pass on generations of knowledge, secure the recognition for their ongoing stewardship over the land, regain control over their traditional territories and improve community social and economic welfare. By supporting the resurgence of Indigenous-led governance by recognizing the rights and titles of Indigenous Peoples, there is a potential for increased conservation effectiveness and spatial coverage that is socially just and meaningful (Artelle, et al., 2019). This section of the literature

review assesses the use and implications of both western and traditional knowledge systems and how those types of knowledge and practices can be used to benefit ecosystem services and thus strengthen contributions to environmental targets and reconciliation goals. The section will continue on to describe the overwhelming evidence that Indigenous involvement in conservation provides immense benefit to the outcomes and results of conservation, and the numerous possibilities of how to include Indigenous People in the conservation process in Canada.

3.4.1. Differences and Similarities Between Western and Traditional Knowledge Systems

Environmental management is often accompanied with the use of western knowledge (WK) and/or the use of Indigenous traditional knowledge (TK). WK systems are understandings that rely on established laws through the application of scientific methods and disciplines, emphasizing what is logical, observable, and measurable (Levac, et al., 2018). This type of knowledge is sometimes criticized for its habit of viewing the land as an object of study, rather than relating it to experiences and relationships (Levac, et al., 2018). TK derives from Indigenous Peoples and date back centuries, emphasizing an approach to knowledge that is intergenerational, holistic, and metaphysical. Traditional ways of knowing rely on multiple forms of intelligence including ways of knowing from the land, interpersonal communication, physical experiences, and spiritual intelligences (Levac, et al., 2018). TK embodies a wealth of experience and wisdom that has been passed down throughout millennia of direct observations on the land, constituting well-formed environmental protection mechanisms and showcasing an integral part of an Indigenous nation's cultural identity (Berkes et al, 2000). TK can stem from multiple generations, for example, a nation that has passed down knowledge over seven generations could have accumulated over 800 years of knowledge regarding a territory, its species, and the intertwining relationships and patterns between them (Institute for Integrative Science and Health, n.d.).

There are many obvious differences between WK and TK systems instituting a vast body of literature. WK is objective and quantitative, whereas TK is subjective and qualitative. WK is based on academic and literate transmission of information, whereas TK is often passed down from one generation to the next orally by elders (Nakashima & Roué, 2002). TK is dependent on location, as each nation develops their own knowledge from on the land experiences and observations, whereas oftentimes WK is broader in scope as studies are often performed in controlled experimental environments with objects of study isolated (Nakashima & Roué, 2002). WK separates observations into different disciplines such as economic, scientific, and geographical, whereas TK takes a holistic approach where the interactions between humans and nature is highly reliant on cultural identity and obligations to the community (Iaccarino, 2003). In overview, WK is often associated with the type of society that focuses on maximizing production which consistently includes exploiting nature to accommodate the supply and demand of humanity, however, still acknowledges the need to preserve for future generations and sustainability of markets (Maweu, 2011). TK often is associated with a strong sense of interdependence and interconnection, relying on traditional methods of sustenance including hunting and gathering,

with a strong cultural connection tied to the land which urges traditional societies to preserve and respect the natural world (Maweu, 2011; Bruchac, 2014).

Despite their variations, both WK and TK are important for conservation as they can both learn from each other and can be incorporated for enhanced conservation efforts. Both WK and TK provide humanity with new biological and ecological insights that are integral for the management of natural resources, educational opportunities, environmental assessment, development planning, natural disaster mitigation and preparation, mitigation of climate change and conservation practices (The World Conservation Union, 1986). TK provides conservation efforts with direct on-the ground knowledge that has been accumulated over centuries such as the patterns and traditional uses of plant and animal species, and how to manage landscapes to mitigate or prevent natural disasters, while WK can provide more scientific information such as the biology of a species and provide technology for monitoring weather patterns, species migration and chemical balances of air and soil (Bruchac, 2014). As human interference on the earth's lands, waters and ice continues to degrade the planet and change landscapes, the monitoring and operation of conservation areas, and the interactions between living beings and natural processes, would benefit from both traditional and western ways of knowing, contributing to a plethora of ecosystem services and environmental targets and reconciliation goals.

3.4.2. Well Known Practices Rooted in Indigenous Knowledge

In the 1980s, TK was recognized for its potential applications to solve resource-based and environmental problems in the international arena. TK was reflected in the 1987 report *Our Common Future* from the World Commission on Environment and Development and recognized that Indigenous Peoples hold knowledge that can offer western societies lessons on land, water and ice that can support the protection, management, and rehabilitation of the environment. The use of TK and the practices that derive from it are largely dependent on place, and while there are several examples of applying TK in environmental management and assessment, the wider application of TK remains elusive. There are multiple reasons why practices in TK are not common knowledge or easily researchable. Firstly, most TK is passed orally through elders to members of the community, not written down for public accessibility. This includes elder to youth teaching, observation, education, and ceremonies (AFN, 2010). Secondly, there is a continued favour for the use for established scientific practices and WK in conservation over TK. Lastly, the protection of TK amongst Indigenous Nations has become a growing concern. TK methods are highly specific to each location and each unique culture of a nation, passed down through generations by oral history, and the preservation and protection of each nation's TK has become of utmost importance, especially after a long history of attempted assimilation. For example, a report compiled by the Stoney Nakoda Nations and Banff National Park filtered the oral histories and TK gathered by participants and elders to protect the preservation of Stoney Nakoda TK (Stoney Nakoda Nations, 2022). The importance of confidentiality when working with TK stems from colonization and exploitation of Indigenous Peoples. Indigenous People have often expressed concern for sharing

their knowledge, as under current intellectual property rights, sharing knowledge in good faith poses a significant risk to losing rights to that knowledge and having their knowledge exploited while they are left out of the process (AFN, 2010; GoC, 2022b). With an abundance of rich and critical knowledge comprised by Indigenous Peoples, it is important to ensure the involvement of Indigenous Peoples within all practices on their traditional lands, waters, and ice.

Through direct monitoring over the land for millennia, each Indigenous group has developed and distributed knowledge regarding their environment from a holistic approach. The holistic worldview sees the whole person as being interconnected to the land and community, stressing the interconnectedness of all life under the creator, and as a result, many approaches to monitoring and managing the environment that developed are integral to a sustainable way of knowing and being (CCL, 2009). The holistic approach of viewing the environment allows a better understanding of the way species and environments are affected and supported by each other, being intertwined rather than a line of "this effects that" (CCL, 2009). With the philosophy that everything is interconnected, it is important to protect the whole, leading to methods that respect both the environment, humans, and biodiversity. These carefully cultivated methods of TK include responsible practices in forestry, resource management, conservation management and species monitoring. In regard to forestry, one of the most utilized practices rooted in TK is the use of prescribed burns to maintain the health of a forest, including maintaining an abundance of wildlife, plants, and clean water. Prescribed or controlled burns have many names in many cultures including fire stick farming, fire and no fire, a burn-off, reduction burning, swailing and many more (Gammage, 2011). A prescribed burn is a controlled method of removing combustible materials on the forest floor and canopy such as built-up grasses, twigs and fallen leaves, in order to prevent future fires caused by higher temperatures, lightning strikes and human-induced fires such as fire pit sparks or cigarettes, and simultaneously maintains biodiversity, balances species, and ensures biological abundance (Gammage, 2011). Fire releases nutrients from the soil and triggers changes in the composition of vegetation types which stimulates productivity and increases nutrient quality, while simultaneously managing pests, invasive species and controlling animal population levels (Pyne, 2010; Stephens, et al., 2018). Prescribed burns can be managed and controlled rather than a rogue fire which spreads quickly through dense forest canopies and may reach nearby infrastructure such as houses, as witnessed by the destructive wildfires often seen in British Columbia and Alberta. This method is increasingly important to put into practice as increases in spring and fall temperatures due to climate change will influence fire season start and end dates (NRC, 2021b). Many Indigenous Peoples see fire as the giver of new life and a symbol of fertility, requiring utmost care and attention as it can both bring new life and take life away (AFN, n.d.c). TK often stems from cultural associations such as the connection between fire bringing new life and prescribed burns being used to promote and enhance biodiversity.

Another example of the use of TK is the practice of responsible harvesting activities including hunting, gathering, fishing, and trapping. Traditional methods of harvesting have been a part of

Indigenous People's way of life for millennia and continue to this day despite the impact of colonization practices and its lasting effects. Harvesting activities are integral to fostering cultural identity, meeting nutritional and medicinal needs, and supporting Indigenous local economies. Additional benefits that have been identified include supporting food security, increased physical activity, prevention of chronic diseases and improved mental health (Statistics Canada, 2019). Despite these benefits, participation in harvesting activities is declining largely as a result of climatic factors, decreased transmission of TK and skills after residential schools, economic contributing factors, and social and political pressures (Statistics Canada, 2019). Those who are "status Indian" have the right to harvest with exceptions, including that harvesting must be for food, social or ceremonial purposes, only occurs within areas you can prove your First Nation traditionally used, and must follow any local laws regarding conservation, public health, and safety, and any laws of your First Nation (Legal Services Society British Columbia, 2017). Non-status Indians and Métis still have an Aboriginal right, however, may be charged if they do not have a licence or do not have permission to harvest in a First Nations territory (Legal Services Society British Columbia, 2017). Harvesting is also often set out as a right in many modern treaties. This is exemplified by the *Gwich'in Comprehensive Land Claim Agreement* signed in 1992 by the Gwich'in and the Government of Canada in order to provide clarity on ownership, land use and resources in the Gwich'in Settlement Area. The modern treaty has multiple sections acknowledging the rights and limitations on harvesting in the assigned territory, which includes Chapter 12 Wildlife Harvesting and Management, Chapter 15.5 on harvesting rights in National Parks and Chapter 17 regarding Harvesting Compensation agreements and claims. However, not all those who identify as Indigenous in Canada participate in harvesting practices, most that do still practice traditional harvesting methods do so to stay in touch with cultural customs, due to monetary constraints (especially with higher grocery prices further north), and for supporting livelihoods (Statistics Canada, 2019). Those that experienced barriers to traditional harvesting practices stated barriers from time constraints from employment and family duties, financial costs for equipment and fuel, trouble obtaining licences, lack of knowledge, and lack of location for those living off reserves or traditional territories (Statistics Canada, 2019). Traditional harvesting activities are actually beneficial for conservation practices as it assists in monitoring and managing the environment, biodiversity, and natural resources on local lands, waters, and ice. Traditional harvesting activities can be utilized for environmental monitoring or Guardian programs where conservation is examined, while Indigenous Peoples may observe their cultural traditions and receive economic benefits (Thompson, et al., 2020). With unprecedented rates of social and ecological change, utilizing existing infrastructure for direct on-the-ground monitoring through traditional harvesting activities is a beneficial tool for environmental monitoring, protection, and rehabilitation.

Ecological TK (sometimes referred to as TEK) is largely cultivated through cultural monitoring practices that have been passed down through the practice of oral history. Cultural monitoring refers to the process of Indigenous Peoples living, harvesting, and working on a landscape, taking

note of the changes taking place such as migration patterns, weather events and redistribution of biodiversity (Robbins, 2018). Cultural monitoring practices create a profile of the land that can be utilized to enhance, monitor and predict biodiversity and its patterns, and can further be utilized to monitor the reintroduction of species or watch for invasive species, monitor the patterns and effects of extreme weather such as flooding and fires, and watch for human intervention such as unregulated hunting or loitering. For example, in 2017, Parks Canada reintroduced 16 bison into Mînî Rhpa Mâkoche, now known Banff National Park. The ecological impacts were originally monitored from a western viewpoint by Parks Canada, until 2020 when the Stoney Nakoda Nations began the cultural monitoring process which included ceremony, elder interviews, fieldwork, elder reconnection, report writing, and outreach to determine both the cultural and environmental impacts of the bison reintroduction (Stoney Nakoda Nations, 2022). This allowed for a holistic approach to park management that supported both WK and TK, and co-management practices, contributing to reconciliation between Parks Canada Agency and the Stoney Nakoda Nations. Through the use of TK and observational data, the method of cultural monitoring was not only utilized to better understand the bison herd dynamics and ecological relationships, but also renewed the Stoney Nakoda Nations' connection to the land and their traditional territories (Stoney Nakoda Nations, 2022). The Stoney Nakoda Nations were able to utilize cultural monitoring to understand characteristics of the bison herd that WK may not have understood, for example, the herd must be left alone from May to June as the herd is mating and then herd separates, or how when a young bull is born the dominant male will take its old mates away and start a new herd which avoids interbreeding (Stoney Nakoda Nations, 2022, pg.38). This is just one example of the immense benefits cultural monitoring and TK provide, and these methods can be utilized for a variety of purposes including methods of seed collection, species taxation and monitoring, water conservation, erosion control, and even agricultural practices.

WK and TK are very beneficial when combined as they provide a holistic approach to observing a species or space. This has been acknowledged through the creation of a research framework that links Indigenous and western knowledge referred to as "Etuaptmumk" or "two-eyed seeing." Developed by Mi'kmaw Elder Albert Marshall in Fall 2004, two-eyed seeing refers to learning to view with one eye the strengths of Indigenous ways of knowing and with the other eye the strengths of western ways of knowing (Bartlett et al., 2012). The concept was developed in order to draw upon the strengths of both forms of knowledge and seek to learn together in order to influence the best outcomes in both environmental stewardship and relationship building, instead of assimilating one viewpoint into another. For example, the Fraser River in Canada utilizes a two-eyed seeing approach in its monitoring techniques. From western science ways of knowing, land stewards collect water samples to measure contaminants, biopsy fish lesions to identify diseases and measure water turbidity, while Indigenous ways of knowing, involves interviewing elders about the physical appearance of the water through generations, learning the history of how the water systems have changed over time and speaking with traditional hunters, gatherers and fishers to understand the local wildlife populations (Rivershed Society of BC, 2021). Both WK and TK have

strengths that are important to utilize while attempting to protect and manage local ecosystems and reach both national and international environmental targets. The management and practices that stem from TK are an important component of Indigenous People's stewardship over the land and incorporation of their culture, directly applying to reconciliation practices. It is integral to include local Indigenous Peoples in conservation efforts, to gain access to a rich network of TK and provide direct hands-on stewardship over the land, while allowing Indigenous Peoples to promote and exercise their traditional cultural practices, knowledge, and rights. The right to practice TK and cultural practices on traditional territories directly contributes to both environmental targets and reconciliation goals at a national and international level.

3.4.3. Benefits from Indigenous Involvement in Conservation

Environmental

The benefit of Indigenous involvement in conservation is extremely evident in terms of environmental enrichment as they hold vital TK and experience in adapting, mitigating, and reducing climate and disaster risks, while enhancing and protecting biodiversity. While Indigenous Peoples are among one of the poorest populations in the world, only occupying lands that make up about 20% of the earth, they actually maintain 80% of the world's remaining biodiversity, pointing to the fact that Indigenous Peoples are the most effective environmental stewards (World Bank, 2022). In Canada, a study conducted by the University of British Columbia found that remaining species populations were highest on lands that were managed or co-managed by Indigenous communities, suggesting Indigenous land-management and stewardship practices are keeping species numbers high (Schuster et al., 2019). The study also found that a larger fraction of the world's surface area needs to be protected in order to halt the planetary extinction crisis (Schuster et al., 2019). Canada currently contains about 24% of the worlds boreal forest, 25% of the world's temperate forests and 25% of the world's wetlands, in addition to producing the most renewable freshwater per person, demonstrating the tremendous need for protected areas in Canada – especially in ecozones containing these vast swaths of biodiversity (Auditor General of Canada, 2022; Statistics Canada, 2016). TK and Indigenous stewardship activities also promote climate change mitigation in addition to sustaining biodiversity. This is managed through a variety of factors, including through sustainable ecosystem management systems such as traditional agriculture and conservation, and ecological restoration techniques such as prescribed burns (UNESC, 2021). The United Nations Economic and Social Council have recommended that participation and rights of Indigenous Peoples be enabled and acknowledged at all levels from local to international, including through partnerships and joint decision-making, in order to best mitigate and adapt to climate change (UNESC, 2021). IPCAs also provide giant storehouses for carbon, for example the community of Deline has proposed protecting the Great Bear Watershed as an IPCA, which holds more than 4.5 billion tonnes of soil organic carbon – equivalent to over 20 years of Canada's annual industrial GHG emissions (Indigenous Leadership Initiative, n.d.).

Growing bodies of research have determined that Indigenous communities often achieve enhanced conservation outcomes that private or state-managed conservation areas. Often these improved results are done at a lower cost due to lower financial support in comparison to private or public conservation areas and initiatives (Schuster et al., 2019). Improved results from Indigenous-based conservation areas are found to occur for a variety of reasons. Firstly, Indigenous rights holders are more likely to protect their lands from outside development due to their strong cultural values and deep spiritual connection to the natural world. A report compiled by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services found that biodiversity decline and human alteration have been less severe or avoided in areas managed or held by Indigenous Peoples (IPBES, 2019). This has commonly led to improved benefits of ecosystem services in areas managed or co-managed by Indigenous Peoples. Secondly, Indigenous Peoples are more likely to intensively monitor the land through both stewardship activities (e.g., Guardian programs) and cultural gathering methods such as hunting, gathering, and fishing. Intensive monitoring on the land leads to improved response time and improved collection of local TK for managing effects to the ecosystem such as invasive species, predator-prey relationships, natural disasters, and human interferences (ILI, 2015). This accumulation of local TK and direct monitoring allows for enhanced observation, enforcement, education, and community engagement that contribute to effective and efficient management approaches that heighten levels of biodiversity (ILI, 2015). Thirdly, Indigenous Peoples have a millennia of stewardship experience and accumulated knowledge about specific areas. TK that has been collected in an area by local Indigenous communities over millennia of observation and interaction greatly contributes to environmental assessments, sustainable ecosystem management and in the design and implementation of solutions for local species and biodiversity. Additionally, teachings from TK are not only applicable to protecting biodiversity, but for how humans can balance their relationship with nature and practice practical consumption methods that both serve the needs of humans while protecting the environment for future generations (Stockholm 50, 2022). Indigenous knowledge and stewardship activities have been proven to provide enhanced conservation methods that enhance biodiversity, mitigate climate change impacts, and provide a plethora of ecosystem services. An increase in Indigenous-led or co-managed conservation areas would greatly contribute to environmental targets in addition to providing social and economic benefits to the Indigenous communities involved.

Social

The utilization of Indigenous conservation and knowledge generates a variety of positive social-based outcomes including the ability to practice cultural traditions, accumulate and share a variety of knowledge, educate westerners on Indigenous ways of knowing and being, promoting Indigenous governance systems, and recognizing inherent and treaty rights to traditional territories. Indigenous communities notably utilize ecosystems for a variety of provisioning and cultural services including traditional harvesting and agriculture, cultivation of medicines, spiritual valuation and connection, practice of Indigenous knowledge systems, exercising cultural heritage,

and ecotourism. Allowing Indigenous Peoples autonomy over and/or access to lands upholds their inherent and political rights to practice their ways of being. This includes provisioning services such as hunting, gathering, fishing, cultivation of medicinal plants and resources for homes, clothes, and tools, and numerous cultural services such as protecting the spiritual connection with Mother Earth, and practicing knowledge, languages, and oral traditions in a safe environment (AFN, n.d.b). Each Nation has a unique relationship with the earth, but a majority view themselves as environmental stewards or caretakers over Mother Earth, which nurtures and sustains all life. The relationship between many Nations, Mother Earth, and all living things, is based on reciprocity and a profound spiritual connection, inspiring the notion that everything is done with an understanding of only taking what is needed and taking with great care to respect both the earth and future generations (AFN, n.d.b). Indigenous People's spiritual connection to the land is constitutionally recognized and legally protected under Section 35 of the Constitution Act (Indigenous Corporate Training, 2015). Besides upholding political and inherent rights to celebrate and practice Indigenous cultures, traditions, and ways of being, Indigenous-based conservation areas also allow for the sharing of knowledge and increased education on local Indigenous communities (AFN, n.d.b). Given Canada's history of assimilatory actions and policies stripping Indigenous Peoples and communities of their culture and languages, having the ability to share and conduct cultural practices recognizes and affirms their significance in society, while educating western communities on the significance and importance of Indigenous cultures, ways of life and knowledge. A study conducted with the Dehcho First Nations and Lutsel K'e Dene First Nation guardian programs found that not only did environmental outcomes advance from the implementation of guardian programs, but social and cultural aspects increased in value as well. Many reported the guardian work had profound positive effects on local Indigenous communities by providing meaningful opportunities to strengthen their connection to the land and community, helping to heal the effects of intergenerational traumas such as reducing unemployment, crime, and drug and alcohol abuse, and the ability to share traditional knowledge and skills between generations and partners to proactively recognize Indigenous voices and protect Indigenous culture and languages (Social Ventures Consulting, 2016).

In a variety of cases on federal or provincial owned lands, such as in the case of national parks, access is required in order to conduct cultural practices, but often there are a variety of prohibitors and constraints to doing so. This can include restricting harvesting activities and access to spiritual or burial sites that existed prior to colonization of the land. The right to practicing harvesting activities is typically limited to the territory where the Nation has treaty rights, however the permission process can be very complicated. Although the right to harvest is outlined in treaties and enshrined in the 1982 Constitution, often Indigenous harvesters must show a status card, consent letter and a variety of licences depending on when or where the traditional right to harvest is being performed (Legal Services Society British Columbia, 2017; Erik White, 2017). Additionally, conservation officers, local police and even RCMP may infringe upon these rights, charging rights holders and requiring Indigenous Peoples to spend time and money in courts to

defend their constitutional rights. Both federally and provincially there are no consistent regulations, boundaries or legislation set out to manage harvesting rights (Legal Services Society British Columbia, 2017; Erik White, 2017). Indigenous-based conservation areas, either co-led or led autonomously allow the opportunity to uphold Indigenous inherent, treaty and constitutional rights to hunt, gather and fish, while additionally contributing to Indigenous Peoples rights to self-determination outlined in Articles 3 and 4 of UNDRIP (United Nations, 2007). Land rights are critical to self-determination in addition to being a fundamental asset for sustainable economic development and cultural preservation (OECD, 2020). Self-determination, or self-governance refers to the ability of a Nation to exercise the necessary functions of regulation without intervention from an external authority, which includes how Indigenous Nations can access, protect, and use their land and traditional territories without interference. As evaluated previously, Indigenous Peoples have enhanced methods of sustainability that lead to improved conservation outcomes due to their own objectives and principles in regard to land use and sustainability, which further encourages giving traditional territories back to Indigenous Nations to not only meet conservation outcomes and environmental targets, but to uphold Indigenous self-determination rights (Reed, et al., 2020). In addition to contributing to the articles of UNDRIP and sustainability targets, the return of land to Indigenous Peoples contributes positively to the Land Back Movement and supports Indigenous governance structures. The Land Back Movement is an Indigenous-led environmental, political and cultural movement seeking to return traditional territories back to Indigenous Nations. The campaign seeks to acquire sovereignty over lands to both heal the land and their relationship with nature, and additionally to reclaim those connected to land including languages, ceremony, economic security and harvesting rights (Bearfoot, 2022). Providing autonomy over conservation areas contributes to Indigenous-based social causes and international rights, with proven positive environmental outcomes which can be utilized to strengthen contributions to both environmental targets and reconciliation goals.

Economic

Indigenous involvement in conservation, whether co-led or autonomous, leads to obvious social and environmental benefits, however, it also positively contributes to the economic welfare of Indigenous Peoples and local communities while contributing to the transition to a greener economy. Indigenous-led conservation is proven to support conservation-based industries while generating employment for Indigenous communities. Employment and training may stem from Guardian programs, research projects, sustainable forestry operations and other associated environmental services and councils (Indigenous Leadership Initiative, n.d.). IPCAs generate local and regional spending primarily through ecotourism, which in Canada alone brings millions of visitors to green spaces which generates additional revenue, and additionally showcases and recognizes Indigenous art, languages, and cultures (Smithsonian, 2007). In 2019 alone, tourism nationally generated $43.7 billion GDP, with employment in the sector reaching 2.1 million and Indigenous tourism exceeding $1.7 billion GDP with 39,000 in employment (Theckedath, 2021; Hermus, 2019). Indigenous tourism includes wilderness areas, arts and heritage, and Indigenous-

owned tourism-based businesses including tourist merchandise and services (Hermus, 2019). Ecotourism can include multiple activities including hiking, kayaking/canoeing, snorkeling, cycling, learning about local cultural heritage, and viewing flora and fauna. These activities bring in millions to green spaces including national parks and IPCAs. In British Columbia alone there were 149,900 tourism employees in 2019, compared to just 17,200 jobs in forestry and logging in 2020 (Wood, 2021). Guardian programs assure that People are directly on the land, both maintaining natural and cultural integrity of the ecosystem and educating visitors on proper etiquette to maintain biodiversity, which can include educating visitors on local Indigenous Peoples and cultures. Programs, employment, training, and local Indigenous-owned businesses all contribute greatly to local Indigenous Nations' economies by providing an increase in revenue to local businesses and financial support for those employed directly in the conserved area. For example, the Łutsël K'e Dene First Nation Guardians Program employs 10 people in the summer and 4 in the winter in the Thaidene Nëné Indigenous Protected Area in the Northwest Territories, in addition to being surrounded by local Indigenous businesses that receive revenue from tourists such as servicing of boats and snowmobiles and the sales of winter gear (Indigenous Leadership Initiative, n.d.).

While Indigenous-based conservation positively impacts the economy of local Indigenous communities, these areas also assist in shifting Canada towards a "green economy." A green economy is the transition to a low carbon, resource efficient and socially inclusive economy that prevents the loss of biodiversity and ecosystem services (UNEP, n.d.). According to the UNEP, a transition to a green economy would involve a focus on policy development, technical assessments, tools and guidelines, economic mechanisms, and new business models, and building capacity through training and institutional strengthening (UNEP, n.d.). IPCAs provide the perfect opportunity to assist in the transition to a green economy as they are supporting greener policy development, performing strategic environmental assessments directly on the land, creating new tools through Indigenous knowledge systems, creating financial developments through ecotourism while creating and supporting local eco-conscious businesses, developing initiatives and education models for stewardship activities, and strengthening institutions through reconciliatory practices. A progressively widespread viewpoint over current western economics (market-based) is that it is not a sustainable model for the welfare of the environment and future generations (Swiderska, 2021). Rather than seeking economic goals and the conservation of nature separately, many Indigenous communities urge the transition to a green economy on an international scale, following the "Indigenous or subsistence economy" methods of balance and reciprocity with nature (Hilton, 2021). This includes promoting sufficiency rather than infinite growth, fostering the redistribution of wealth rather than wealth accumulation, the use of circular agricultural models, and a focus on poorer communities' health and wellbeing from factors of environmental racism, including pollution and water insecurity (Swiderska, 2021). Since a complete transition from a market-based to a green economy is highly unlikely in the near future, IPCAs can provide a start to this transition and support a mixed economy approach (Hilton, 2021). A mixed economy

combines market activities with subsistence, which still promotes conservation while reaping the benefits of environmental services including improved health and wellbeing, climate resilience, and generating income from ecotourism (Swiderska, 2021). Indigenous-based conservation areas are the key to promoting environmental, social, and economic benefits not only for involved local Indigenous communities, but on a regional and national scale.

3.4.4. Indigenous Conservation Pathways – The Canadian Context

By the end of 2021, Canada had conserved 13.5% of its terrestrial area (land and freshwater), and 13.9% of its marine territory (NRC, 2022a). 12.6% of the terrestrial area conserved, and 9.1% of the marine territory conserved were found in protected areas including national, provincial, and territorial parks, IPCAs, national wildlife areas, migratory bird sanctuaries and marine protected areas. The remaining percent derived from other effective conservation measures (OECMs) such as Indigenous territories and reserves, military bases, watersheds, and resource management areas (NRC, 2022a). According to the Government of Canada, the term "conservation" refers to an area that contains biodiversity objectives but may be subjected to harvesting, whereas "protection" refers to the creation of parks and other areas legally protected from industrial activity, which is the primary focus of protected areas. Canada has numerous environmental-based agencies including DFO, ECCC, NRC, etc., however when it comes to the management of protected areas that responsibility primarily belongs to Parks Canada, and to a separate department in each province or territory to manage provincial/territorial parks not under federal jurisdiction. Parks Canada manages federally owned conservation areas and currently oversees 171 National Historic Sites (NHS), 37 National Parks, 10 National Park Reserves, 5 National Marine Conservation Areas (NMCAs), and 1 National Urban Park which amasses 450,000km^2 (Parks Canada, 2022). Provincial and territorial parks have their own agency for managing their own parks such as BC Parks managed by British Columbia's Ministry of Environment and Climate Change Strategy, and Ontario Parks managed by Ontario's Ministry of the Environment, Conservation and Parks, and much smaller local public parks are managed by local governments such as the Parks, Forestry and Recreation Department for the City of Toronto.

Many of these protected areas and parks were originally created and informed by western worldviews, while also contributing to a variety of social and economic issues in regard to Indigenous Peoples as a majority of protected areas were once created by forcibly removing Indigenous Peoples from their land, burning down homes and performing arrests to deter nations from returning (Struzik, 2022). This includes historically disregarding and even criminalizing Indigenous perspectives and knowledge systems (NRC, 2023c). Present day, Canada attempts to acknowledge the mistreatment faced by Indigenous populations by involving Indigenous Peoples more in decision making processes and park development. There are three main methods for how Canada involves Indigenous Peoples in protected area development, decision making, and protection: consultation, Indigenous autonomy, and shared governance.

Consultation

During federal, provincial, or territorial undertakings, the government body or department is the primary decision-making authority with a duty to consult local Indigenous Nations or Indigenous advisory bodies (Morellato, 2008). The duty to consult indicates the need to consult and accommodate Indigenous groups when the form of conduct may adversely impact potential or established Aboriginal or treaty rights (Canada School of Public Service, 2022). The duty to consult primarily derives from Section 35 rights set out in the Constitution Act of 1982. However, the duty to consult is also acknowledged in other policies or legislative amendments such as SARA, affirmed by Canadian Court Judgements such as *Beckman v. Little Salmon/Carmacks First Nation* and *Haida Nation v. British Columbia (Minister of Forests)*, and confirmed by treaties and consultation agreements such as the *Mississaugas of the New Credit First Nations Consultation Protocol Agreement* (Morellato, 2008). Although the government has a constitutional obligation to engage with Indigenous Peoples and accommodate their rights, there can sometimes be an issue with consultation in terms of vague wording for consulting requirements, a lack of formal protocols and procedures, inadequate resources and in some situations, a lack of understanding or disregard of Indigenous rights (Black and McBean, 2017; Maria Morellato, 2008). For example, as previously mentioned, Section 35 of the Constitution Act states that Aboriginal and treaty rights are recognized and affirmed without actually defining what those rights are. However, they are primarily interpreted as the requirement to defend the rights and accommodations of Indigenous Peoples set out in treaties and land claims, including the duty to consult, the right to self-governance, the rights to use lands for traditional harvesting and ceremonial purposes (UBC, n.d.a; GoC, 1982). Other legislative documents created after the Constitution Act such as SARA also mention consultation rights, however, also use vague wording, specifically,

> **"(2)** If the competent minister is of the opinion that a regulation would affect a reserve or any other lands that are set apart for the use and benefit of a band under the *Indian Act*, he or she must consult the Minister of Indigenous Services and the band before making the regulation." (Species at Risk Act, 2002)

Indefinable use of the word consultation or accommodation may lead to Indigenous inherent, or treaty rights being affected, such as the case of *Haida Nation v. British Columbia* which was raised to the British Columbia Court of Appeal and later the Supreme Court of Canada. Although the Haida had claimed title to the lands of Haida Gwaii for more than 100 years, the title had not yet been legally recognized by the Canadian Government, so when the Province of British Columbia issued a "Tree Farm License" on those lands without consulting or considering the need to accommodate the Haida Nation, the Haida challenged the land transfer in court as they had both a pending claim and an aboriginal right to harvest red cedar in the area (Haida Nation *v*. British Columbia (Minister of Forests), 2004). The court ultimately decided that the Crown had a legal duty to consult the Haida before making decisions that could irreparably harm the land, but the forested land was still transferred to the Weyerhauser Company as the company did not have a

duty to consult as the province did (Haida Nation *v*. British Columbia (Minister of Forests), 2004). There are numerous cases where the duty to consult or accommodate is ignored or misunderstood due to the lack of definition for what consultation entails, including who needs to be consulted, at what stage in a process they need to be consulted, and how consultation will be implemented into the final decision-making processes. However vague or misconstrued consultation processes may be in a variety of scenarios, the consultation and accommodation process are the beginning of strengthening relationships between Indigenous Peoples and the Government of Canada and offers Indigenous Peoples a powerful tool for protecting their rights and interests (AFN, 2019). However, as the constitutional duty to consult is continually evolving and being redefined, the lack of clarity causes a strain on many nations human and financial resources with an overabundance of consultation requests, requests where oftentimes, Nations are treated like stakeholders rather than legitimized decision makers or partners (Yellowhead Institute, n.d.).

Indigenous Autonomy

Indigenous autonomy or self-governance in regard to conservation areas implies that the area is managed in a way where Indigenous governments make unilateral decisions for managing lands and resources to fulfill conservation purposes and stewardship responsibilities (CRP, n.d.). Typically, these areas are created through unilateral self-declaration by an Indigenous nation(s), where Indigenous authorities assert their inherent rights and jurisdictions over unceded traditional territories in accordance with their own knowledge and laws (CRP, 2021). This method of conservation is often represented through Indigenous Protected and Conserved Areas (IPCA), Tribal Parks, and Guardian Programs which have unilaterally declared control over their traditional territories.

An IPCA[1] is a conservation area that utilizes Indigenous laws, governance, and knowledge systems to sustain both Indigenous communities and environmental welfare. IPCAs provide a platform for the resurgence of Indigenous governance, reflecting a Nations rights and responsibilities to promote conservation in a socially just fashion that preserves cultural heritage and fosters sustainable economic opportunities (Tanya, et al., 2020). IPCAs gained recognition from the Canadian federal government following recommendations made by the Indigenous Circle of Experts (ICE) Pathway to Canada Target One report released in March 2018, however IPCAs existed long before this report through unilateral declarations of sovereignty by one or multiple nations on traditional territories. The report outlined that IPCAs contain the following three elements: Indigenous led, long-term commitment to conservation, that elevates the rights and responsibilities of Indigenous Peoples (Indigenous Circle of Experts, 2018). The term tribal park is often interchangeable with the term IPCA as they are the same in practice, however it is often dependent on the nation's preference of terms during establishment. For example, the Tla-o-qui-

[1] IPCAs are often referred to in international arenas as Indigenous and Community Conserved Areas (ICCAs). In Canada, they are also referred to as Indigenous Protected Areas or Tribal Parks, however ICE uses the term IPCAs.

aht Tribal Parks were the first to coin the term tribal park as an alternative approach to govern their own homelands in 1984 with their own methods of environmental stewardship, cultural restoration, and sustainable economic development objectives (Tla-o-qui-aht Tribal Parks, 2023). The 2014 inception of Dasiqox Tribal Park followed their ideology, but later decided in 2020 to change names to Dasiqox-Nexwagwez?an as a public engagement session found the terms confusing, where "tribal" was misunderstood in terms of what Indigenous values and laws would apply, and where "park" was seen as a place where nothing could be done and human activity was prohibited (Dasiqox-Nexwagwez?an, 2020). However, sometimes IPCAs are established and co-managed with Canadian government authorities, while tribal parks are not.

Although recognized by the federal government as necessary for meeting the Canada Target 1, IPCAs and tribal parks still face many barriers to establishment as autonomous conservation areas (Pathway to Canada Target 1 National Advisory Panel, 2018). IPCAs that have been declared unilaterally by an Indigenous assertion of sovereignty are oftentimes contested by federal or provincial/territorial governments, causing conflicts between Indigenous and Canadian governments. Indigenous sovereignty continues to be insufficiently addressed in land use decisions by Canadian governments due to the lack of existing laws and unwillingness to relinquish sovereignty to Indigenous governments (Artelle, et al., 2019). For example, in the province of Ontario, there is no provincial law or policy that recognizes IPCAs as a form of protected area, causing a lack of legal recognition that barriers establishment despite inherent or treaty rights (Blaise, 2020). Another major barrier to establishment is funding and operational challenges. Funding can already be an issue for land and water-based conservation as the management of a park including maintenance, infrastructure, staffing, etc. can be very expensive, however when Indigenous leaders are faced with finding consistent revenue sources without relying on the Canadian government, it can become a difficult venture. Frequently, resources to manage IPCAs and Tribal Parks derive from a variety of sources including from the Indigenous Nation, government grants or contributions, donations from NGOs or the public, small scale ventures, and eco-tourism profits (David Suzuki Foundation, 2018). As most funds are not guaranteed from one year to the next, operational capacity may not be as developed as possible, meaning less ambitious projects and goals may have to be set for the conservation area or lower wages for Indigenous leaders and guardians employed in the protected area. An additional barrier to establishment is the desire for industrial activity. Most Indigenous nations have to deal with cultural and ecological disturbances from industrial activities encroaching on traditional territory, including mining, forestry, agriculture and urbanization (David Suzuki Foundation, 2018). Whether being established within or outside of the IPCA, these industrial projects affect local ecosystems, wildlife and watersheds that are of ecological and cultural significance. Indigenous Peoples have a connection with nature that is utilized for both spirituality and sustenance, meaning the preservation of nature is of utmost importance, a concept which has often been misunderstood. For example, in 1956 the Sayisi Dene were forcibly relocated by the government due to reports from Manitoba officials who believed the traditional hunting practices of the Dene were contributing to

a decline in the numbers of caribou, which later was proven to be false (Malone, 2016). This relocation (followed by a second forced relocation 1966) forced 250 members far away from the caribou, their homes and trapping supplies, to a small camp with no running water, electricity, or heat (Malone, 2016). The culture-shock, poverty and starvation led to harsh living conditions, violence and alcoholism that caused deaths of almost half the community. To reclaim their culture and traditions the Sayisi Dene First Nation is seeking to establish an IPCA for 50,000 square kilometres of the Seal River Watershed, one of the world's last remaining unaltered spaces (Knezevic, 2022). The cultural, ecological, and economic contributions of an IPCA sets a significant precedent for an Indigenous community to seek establishment of an autonomous conservation area to utilize their right to self-governance, use of language, TK, and laws.

Once an IPCA or tribal park is established, the lands are managed through Indigenous laws, knowledge and ways of life that are usually enforced and monitored through Indigenous Guardian Programs (IGPs). Many IPCAs will have established what is referred to as a Guardian program, a program that works directly on the land to monitor and maintain biodiversity and support cultural activities and teachings in association with the IPCA. Guardians utilize both WK and TK, often being taught about relationships and changes to the land over time through elders, and analysis techniques such as data collection and water quality testing from western researchers (Land Needs Guardians, n.d.b). IGPs have the capacity to engage and educate land users, industry representatives and governments to strengthen connections and decision-making opportunities. IGPs assist with bridging the gaps between Indigenous Peoples, industry and government by facilitating a holistic wildlife monitoring approach directly on the land, fostering enhanced long-term solutions for the conservation of local species while promoting community-level leadership opportunities (Popp, et al., 2020). An example of enhanced progress from IGPs is the British Columbia Gitanyow Moose Monitoring and Permitting Program started in 2011 that utilized Indigenous and western ways of knowing. The program developed due to the BC government documenting a moose population decline of approximately 70% between 2001 and 2007 in the Nass portion of the Gitanyow Lax'yip via aerial block surveys. From the program's implementation to 2017, the local moose population increased an estimated 50% (Popp, et al., 2020). Another major factor of guardian programs is teaching youth about cultural identity, leadership, and both TK and WK to prepare them to take care of the land as future generations, which is especially important after millennia of assimilatory actions, as it reinvigorates Indigenous teachings, languages, and cultures so they are not lost in the future (ILI, n.d.a; Land Needs Guardians, n.d.b). Guardian programs also provide specialized training and good-paying jobs for local Indigenous communities, while honouring Indigenous responsibilities and rights to the land (ILI, n.d.b). Guardian programs are not only utilized by autonomous IPCAs and tribal parks, but are also becoming more common within existing national, provincial and territorial parks in addition to IPCAs developed under a shared governance approach.

Shared Governance

The shared governance or joint-management approach between Canadian governments and Indigenous Peoples represents a system that integrates Indigenous local and/or regional level management in a formal agreement of shared authority and/or shared decision making to collaboratively manage a particular area (AFN, n.d.a; David Suzuki Foundation, 2018). Shared governance structures allow protected areas to be managed with consideration of both common institutional practices and Indigenous laws and knowledge, utilizing the two-eyed seeing approach to conservation. This approach to conservation takes consultation a step further by fully recognizing the importance of local Indigenous perspectives and allowing Indigenous Peoples to further pursue their right to self-determination. Shared governance is often approached through land claims, treaties and/or agreements, often resulting in a co-management board that incorporates representatives from government in the form of federal, provincial, territorial or department representation and elected representatives from each overlapping local nation. For example, the modern treaty *Inuvialuit Final Agreement of 1984*, signed by Government of Canada and the Inuvialuit in order to define the Inuvialuit Settlement Region and existing rights, resulted in the creation of a co-management system that represents both government agencies and Inuvialuit organizations through multiple co-management boards. This includes an environmental impact review board, environmental impact screening committee, fisheries joint management committee and wildlife management advisory councils for two regions (WMACNS, n.d.). As a result of the agreement, the Ivvavik National Park of Yukon was established to protect local caribou populations from a proposed pipeline, which is now managed by both the Inuvialuit and Parks Canada with the assistance of the North Slope Wildlife Management Advisory Council (Parks Canada, 2021). The park is managed with the intent of preserving both wilderness and cultural resources while ensuring the Inuvialuit can practice their traditional harvesting methods.

The structure and basic principles of an IPCA can also be utilized from a shared governance, or two-eyed seeing approach. These structures may include National Wildlife Areas (NWA), National Parks, National Park Reserves and Territorial or Provincial Parks, where the federal and/or provincial governments have a part in managing and financing the conservation area, however it still aims to follow an IPCA structure by following Indigenous conservation methods and knowledge systems as the lead form of management (Land Needs Guardians, n.d.a). As mentioned previously, National Parks are managed by Parks Canada Agency while Provincial and Territorial Parks are managed by their own jurisdictional agencies. Additionally, National Park Reserves are managed as National Parks, however as land claims are being negotiated Indigenous Peoples can continue to use the land for traditional harvesting methods. NWAs are established under ECCC, and the Wildlife Area Regulations set out in the Canada Wildlife Act. Recently, these conservation areas being established by Canadian governments are following IPCA models, where Indigenous Peoples take the lead, however the government still has a say in management board creation and defined park activities set out in the conservation areas management plan. For example, the Thaidene Nëné National Park Reserve is one of Canada's newest national parks, but

the management of the park is shared with Indigenous governments Łutsël K'é Dene First Nation, Northwest Territory Métis Nation, Deninu Kųę First Nation, and Yellowknives Dene First Nation (Parks Canada, 2023). For more than 50 years, the Łutsël K'é Dene First Nation worked to advance the creation of this park and ultimately decided in 2019 to sign Establishment Agreements with Parks Canada and the Government of the Northwest Territories to ensure the protection of this ecosystem (Nature United, 2020). Originally, the Łutsël K'é Dene refused to consent to a National Park due to concerns over impacts to Indigenous harvesting, lifestyle and governance, however precious metals and diamonds were found later in the traditional territory which spanned encroaching industrial development, which began the process with Parks Canada to make the area an officially designated protected area (Nature United, 2020). Now the area follows Indigenous governance models, including a Guardian program, Ni Hat'ni Dene Ranger program and youth mentorship opportunities, in addition to providing tourism and economic development for local Indigenous communities. IPCAs do not require federal recognition, authority or funding to be established, however, like the Thaidene Nëné National Park Reserve, it can later be decided to welcome government partnership. Since IPCAs were mentioned in the ICE Report of 2018, many IPCAs have been established or expanded through partnership with the government through various funds including the Climate Action Awareness Fund, Canada Target 1 Challenge fund and Canada's Nature Legacy Indigenous Funding Stream.

3.5. Environmental Targets and Reconciliation Goals

3.5.1 Environmental Goals

Canada is the second largest country in the world, containing the world's largest coastline, one of the largest renewable supplies of freshwater and a large and unique fraction of biodiversity, meaning that Canada has an astute obligation to meet both its binding and non-binding, international and national goals, and environmental agreements. This includes through adequate management and protection of its biodiversity and offsetting its greenhouse gas outputs through the creation and maintenance of protected areas. Canada is dedicated to numerous environmental goals, declarations, and treaties at both the national and international level, this literature review will examine the Convention on Biological Diversity (CBD) and its subsidiary at the national level, Canada Target 1; the Paris Climate Agreement and its subsidiary, Canada's Nationally Determined Contributions; and finally, the Sustainable Development Goals (SDGs), namely SDG 13: Climate Action, SDG 14: Life Below Water, and SDG 15: Life on Land.

The Convention on Biological Diversity (CBD) is an international legally-binding treaty that was opened for signature in June 1992 at the United Nations Conference on Environment and Development, also known as the Rio Earth Summit. The CBD remained open for signatures for a year before it was promptly entered into force December 1993 with 168 signatories, Canada included (The Pathway to Canada Target 1 Initiative, n.d.). The CBD was created with three main goals: conservation of biodiversity; sustainable use of biodiversity; and the fair and equitable sharing of the benefits arising from the use of genetic resources (ECCC, 2022). The governing

body of the CBD is the Conference of the Parties (COP), which includes the current 193 signatories to meet every two years to review progress and set priorities on the CBD. The CBD created in 1992 mentions the use of Indigenous TK and technologies four times in the 28-page document, mentioning the importance of recognizing and utilizing Indigenous and local communities in terms of conservation practices (United Nations, 1992). The tenth meeting of the Conference of the Parties (COP-10) adopted a revised and updated Strategic Plan for Biodiversity, including the 20 global Aichi Biodiversity Targets, for the 2011-2020 period, which in Canada was followed in 2015 by the 2020 Biodiversity Goals and Targets for Canada (ECCC, 2022). Canada's Biodiversity Goals and Targets resulted in 4 goals and 19 targets, most popularly of which was Canada Target 1 based on Aichi Target 11, which aimed to conserve at least at least 17% of terrestrial and inland water, and 10% of coastal and marine areas by 2020. As of December 2021, Canada had conserved 13.5% national terrestrial area and 13.9% national marine area (NRC, 2022c). The Aichi Targets in addition to and Canada's Biodiversity Goals and Targets were not met by 2020 which resulted in the creation of the Post-2020 Global Biodiversity Framework, which included a new target to have participating governments dedicate 30% of land and 30% of waters as protected areas by 2030. However, many scientists are arguing for even more protection than is promised by the 30 by 30 target. A study conducted by IUCN reviewed several studies on Aichi Target 11, concluding that 30% is a minimum requirement for global protection and 50% as a mid-point being supported by most studies to conserve biodiversity and meet the objectives of the Aichi Targets (Woodley et al., 2019). IPCAs largely contribute to the percentage of areas being conserved in Canada in all ecozones (Canada Target 1, 3, 16; Aichi Target 11) through valuable protection of traditional lands, waters and ice (Canada Target 8, 10; Aichi Targets 5-7, 10, 15), providing a plethora of ecosystem services (Aichi Target 14), including working towards managing and monitoring both native and invasive species development (Canada Target 2, 11; Aichi Target 9, 12-13), acting as major carbon sinks to combat the effects of climate change (Canada Target 5; Aichi Target 8, 15), sustainably managing large swaths of local land contributing to local communities and nations society, education and economy (Canada Target 6, 19; Aichi Target 1, 3), and utilizes Indigenous conservation on a path towards reconciliation and knowledge sharing (Canada Target 12-13, 15; Aichi Target 18-19) while raising awareness of Indigenous conservation and cultures and its positive impact on biodiversity rejuvenation and safeguarding (Aichi Target 1, 4, 18) (Aichi Biodiversity Targets, 2010; Biodivcanada, 2015).

Canada Target 1 originally stated conserving specifically using protected areas and OECMs, however over the past decade the government began to recognize IPCAs importance in reaching this target with numerous funds for Indigenous conservation such as the $800 million over seven years for 4 Indigenous-led conservation projects (Parks Canada, 2016; ECCC, 2021; Zimonjic, 2022). By 2022, Canada's combined funding for Indigenous led conservation reached $1.4 billion spanning over several years, which seems like a very large investment until you acknowledge the $4.5 billion spent in 2018 for the purchase of the Trans Mountain pipeline, and $188 billion in resource extraction internationally, including on Indigenous lands in the global south (Morgan,

2018; Liam Meisner, 2021; NRC, 2023a). Additionally, there is yet to be a permanent source of funding for the implementation and ongoing protection of IPCAs in Canada, however the existing funding model "Project Finance for Permanence" may apply to the establishment of protected areas that include Indigenous organizations and governments (The Prime Minister of Canada, 2022; Weber, 2022). There are many Indigenous protected areas becoming established in Canada, some of which are co-supervised and others that are only designated unilaterally by Indigenous Nations. The most recent federal budget contains funding for at least another 27 Indigenous Protected and Conserved Areas in addition to 3 already developed with the government (ILI, n.d.c). however, there are still a large number of IPCAs self-declared by Indigenous Nations which are deemed to not meet international conservation area standards and are not being included in Canada's percentage calculation to meet the CBD and Canada Target 1, including the Tla-o-qui-aht Tribal Parks in BC which does not have a treaty of self-government agreement with the Canadian government (NRC, 2022a; Government of British Columbia, 2021). To be considered under Canada Target 1 as a Protected Area or OECM, it must meet nine criteria outlined in the Pathway Decision Support Tool and the participating Indigenous Peoples want the area to be counted (Pathway to Canada Target 1, 2019).

The CBD and Canada Pathway to Target 1 are the largest biodiversity and conservation based legally binding targets, but conserved areas also provide a gigantic ecosystem service of carbon sequestration and storage, contributing highly to climate change-related targets and goals. The Paris Climate Agreement is an international legally binding treaty that sets emission reduction targets for designated nations, including Canada, under the UN Framework Convention on Climate Change (UNFCCC). The Paris Agreement superseded the 1997 Kyoto Protocol, which Canada invoked its legal right to withdraw from in 2011, claiming the protocol did not represent the way forward for Canada. However, the withdrawal did occur a year before the end of the first commitment phase which Canada was not going to reach (Vaughan, 2011). The Paris Agreement was then adopted by 196 Parties including Canada at COP 21 in December 2015, and entered into force November 2016, setting a goal to limit global warming to well below 2 - preferably to 1.5 degrees Celsius, compared to pre-industrial levels (UNFCCC, n.d.). The Paris Agreement to limit global warming 1.5 degrees Celsius below pre-industrial levels is legally binding and according to recent sources, Canada is currently not on track to meeting this target (Climate Action Tracker, 2021). Each participating country has to submit nationally determined contributions (NDCs) to communicate the actions they will take to reduce GHG emissions and how they will adapt to the impacts of rising temperatures (UNFCCC, n.d.). Canada's most recent NDC committed to reduce emissions by 40-45% below 2005 levels by 2030 and reduce emissions to net-zero by 2050 (GoC, 2021b). The 2021 NDC confirms that changes in forests such as conservation or removals, will be reflected in the emission calculations. Additionally, each province and territory in Canada mention their climate actions in Annex 2, however only Ontario, Saskatchewan, Manitoba outwardly mention utilizing conservation or affiliated areas including forestry and wetlands as a resource to manage climate change emissions and impacts (GoC, 2021b). The province and territory reports

did not mention working with their Indigenous populations or IPCAs specifically, however the NDC itself does compile national Indigenous perspectives in Annex 3 organized by First Nations, Métis, and Inuit. There are numerous mentions here to biodiversity and conservation, with claims that improvements in environmental health and stewardship is a part of their action planning to meet the goals of the NDC and Paris Agreement (GoC, 2021b). As discovered by the discussion of ecosystem services, conservation areas provide not only a means to lower emissions and temperatures, but also to build resilience and adaptation strategies to the impacts of climate change, including increased extreme weather events, flooding, erosion, and drought. The 2021 Permanent Forum on Indigenous Issues by the United Nations Economic and Social Council found that IPCAs and Indigenous Peoples can harness their TK to contribute to global efforts under the Paris Agreement to reduce greenhouse gas emissions and promote ecosystem-based carbon capture, and that conservation itself can contribute to 30 percent of the global effort needed to implement the Paris Agreement (United Nations Economic and Social Council, 2021, pg.8).

Evidently, IPCAs and Indigenous knowledge have a strong ability to advance biodiversity and climate change related efforts. Although not legally binding, and not invoking signatories, the SDGs developed by the UN General Assembly in 2015 provide a basis on which many governments, industries and individuals base their social, environmental, and economic actions and commitments. SDG 13: Climate Action, SDG 14: Life Below Water, and SDG 15: Life on Land, are based on strengthening efforts to combat climate change and enhance biodiversity. Through the implementation, promotion, and on-going funding of IPCAs in Canada, a variety of SDGs are also being met. IPCAs contribute to lowering local, national, and international temperatures and impacts by strengthening resilience and adaptability to climate change in Indigenous and local communities (Target 13.1, 13.2, 13.b). IPCAs often have both terrestrial and marine components, whether it is developed in a coastal area or contains wetlands, rivers, or lakes. Through Guardian monitoring and stewardship activities, IPCAs protect a variety of ecosystems through the monitoring of human activities (Target 14.1, 14.4), advancing restoration activities (Target 14.2, 15.2, 15.4), monitoring species at risk and invasive species (Target 15.5, 15.8), providing economic opportunities to local Indigenous communities and allies (Target 14.7, 15.9), and contributing to the percentage of conserved areas nationally and globally in addition to contributing to strengthening contributions to a variety of legally-binding treaties (Target 14.5, 15.1) (UNDESA, n.d.b). Although SDG 13-15 do not mention specifically the use of Indigenous knowledge or IPCAs, the UN Permanent Forum on Indigenous Issues strongly advocates for the involvement of Indigenous Peoples in the development of policies and initiatives related to climate change, desertification, and biodiversity protection to fulfil the SDGs (United Nations Economic and Social Council, 2021, pg.9).

3.5.2. Reconciliation Goals

In addition to attempting co-existence and reconciliation through treaty processes, Canada is dedicated to numerous reconciliation goals and declarations at both the national and international

level. This literature review will examine three reconciliation frameworks in relation to Canada; the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the subsidiary developed at the national level, the United Nations Declaration on the Rights of Indigenous Peoples Act (UNDA); the Truth and Reconciliation Commission (TRC) and its 94 Calls to Action (C2A); and, the Sustainable Development Goals (SDGs), namely SDG 8: Decent Work and Economic Growth and SDG 10: Reduced Inequalities.

As explored previously, UNDRIP is a non-legally binding international instrument which is intended to set the minimum standards for the survival, dignity, and well-being of Indigenous Peoples around the world, with majorly important provisions on the need to obtain FPIC in all consultations with Indigenous People (GoC, 2021a). It was adopted by the United Nations General Assembly in September 2007 and was eventually ratified by Canada despite the original "no" vote. Canada implemented the United Nations Declaration on the Rights of Indigenous Peoples Act (UNDA) in June 2021, making the declaration officially legally binding in Canada (GoC, 2021a). UNDA sets a precedent for consultation and cooperation between Canada and Indigenous Peoples, where under the Act, Canadian laws will become consistent with UNDRIP, develop, and implement an action plan to achieve the declarations objectives, and will release annual reports to inform the public on progress. The Action Plan must be developed no later than two years after the Act came into force, and then can be renewed and updated as needed (GoC, 2021a). The articles of UNDRIP, and therefore UNDA, are integral to reconciliation efforts, especially the implementation of FPIC measures and the recognition and respect for Indigenous rights. IPCAs can be applied directly to numerous articles of UNDRIP even though the protection and development of Indigenous conservation is only mentioned in Article 29. IPCAs emphasize a variety of themes relating to UNDRIP including exercising rights to identity (Article 2, 6) and self-determination (Articles 3-5), the preservation of culture including Indigenous languages, knowledge, ceremony, traditions, and laws (Articles 8, 11-13, 31, 34), consultation in matters affecting their territories or rights (Articles 18-19, 27, 32), the right to creating their own sustainable communities and economy through conservation (Articles 18, 20-21, 23, 29, 35), and the right to protect, be compensated for or remain on traditional territories (Articles 10, 25-26, 28-29, 32) without fear of assimilation or forced relocation (United Nations, 2007). By providing Indigenous Peoples the right to consultation and consent, self-governance, economic integrity, and cultural preservation through the development and continuation of IPCAs, it contributes to almost every article of UNDRIP and therefore UNDA, creating a significant bridge towards reconciliatory efforts. Additionally, as Indigenous Peoples are so closely connected with the land, the implementation of IPCAs will not only contribute to environmental monitoring, but also monitoring the implementation of Canada's UNDA Action Plan, for which the action plan must include measures for monitoring its implementation (UNDRIP Article 38). Through direct on the ground monitoring by Indigenous stewards and guardians, both environmental and cultural aspects of on the ground leadership can be observed and contributed to the examination of the action plans implementation successes and failures, contributing directly from Indigenous Peoples on the

ground what can be done better when reviewing and amending UNDA action planning. This can include monitoring the implementation and impacts of FPIC for Indigenous nations, especially in terms of industry, government projects and urbanization encroaching on traditional territories without consent. The UNDA legislation and developing action plan also responds to the Truth and Reconciliation Commission's Call to Action 43 and 44 (TRCC, 2015a).

The TRC began with the Indian Residential Schools Settlement Agreement of 2007, which resulted in a Settlement Agreement which included a requirement to establish the TRC to facilitate and educate on reconciliation. After six years of consultation with Indigenous Peoples across Canada, the TRC created 94 C2A to further reconciliation between Canada and Indigenous Peoples. Although a majority of the C2A are related specifically to the history and legacy of residential schools and compensating those survivors, IPCAs still emphasize a variety of themes in regard to reconciliation outlined in the TRC. This includes meaningful consultation and FPIC (C2A 92), employment and training opportunities (C2A 7, 92), the opportunity to teach Indigenous youth and ecotourists the history and culture of Indigenous groups (C2A 57), the right to creating their own sustainable communities and economic developments (C2A 92), the right to sovereignty, protection, and existence of traditional territories and title claims (C2A 47, 52), preservation of culture including Indigenous languages, knowledge, ceremony, traditions, and laws (C2A 13), and protecting Indigenous cultural and historic sites and showcasing Indigenous art and cultures (C2A 79) (TRCC, 2015a). The major theme of the TRC C2A is advancing reconciliation practices and working towards proper justice for Indigenous Peoples. The TRC Report states Canada committed cultural genocide through seizing lands, banning Indigenous languages, forbidding spiritual practices, and preventing the transmission of cultural values between generations (TRCC, 2015b, pg.5). IPCAs allow Indigenous Peoples to have decision making power and autonomy over their lands and resources, stimulates economic development and stability, and promote the use and transmission of Indigenous cultures, languages, and knowledge, while utilizing Indigenous governance and laws.

The SDGs and accompanying targets are non-binding goals building on the original Millennium Development Goals, and vary between relation to social, economic, and environmental pillars. The goals and targets were developed at the United Nations Conference on Sustainable Development with the intent of stimulating action until 2030 in a number of areas of critical importance. Included in these goals and targets are SDG 8 Decent Work and Economic Growth and SDG 10 Reduced Inequalities, both of which are highly applicable to Indigenous and local conservation measures and outcomes. IPCAs and Guardian programs provide a method of sustainable tourism supporting local economies and promoting Indigenous cultures (Target 8.2, 8.9), providing employment opportunities to local Indigenous Peoples and communities while promoting youth involvement and knowledge transfer (Target 8.3, 8.5, 8.6, 10.1), monitors the local environment and its resources from overconsumption and degradation (Target 8.4), promotes Indigenous traditions, values and laws (Target 10.2) and ensures equal opportunities for Indigenous Peoples in

ecotourism and governance (Target 10.3) (UNDESA, n.d.b). Through the recognition and development of IPCAs and Guardian programs, Indigenous Peoples and cultures are becoming more empowered, sustaining Indigenous languages, cultures, and economic values.

3.6. Research Gaps

References to targets and goals are very loosely mentioned in literature, primarily being stated directly in recommendations posed to the government by Indigenous groups or ENGOs rather than in academia (Aboriginal Fund for Species at Risk, 2020; Indigenous Circle of Experts, 2018). In academia, references to Indigenous-based conservation areas are very slim in relation to western-based national or international targets and goals, with primary references directed at biodiversity targets in Canada Target 1 due to the *We Rise Together* ICE Report created under the direction of Pathway to Canada Target 1 and their monumental discussion of IPCAs (Indigenous Circle of Experts, 2018). Additionally, when academia is speaking in regard to the use of nature-based solutions to meet environmental targets, it is more generalized and does not frequently mention the use of IPCAs or TK (Watson et al., 2016). There is also very little in regard to specifically how IPCAs can be utilized to meet reconciliation goals here in Canada except in regard to developments surrounding UNDRIP (Zurba et al., 2019) There is no doubt that the discussion on the practical implications of IPCAs is becoming more widespread in recent years, with it becoming a major theme in conservation-based legislature and discussion, such as being a major point of conversation at COP 15 held in 2022 and in target reporting (Inayat Singh and Alice Hopton, 2022; UNEP, 2022). However, many of the national and international instruments themselves were written before UNDRIP was put into practice by many countries, and before the *We Rise Together* ICE Report promoted the utilization of IPCAs in Canada. This resulted in many of these instruments being originally written without specific mention of IPCAs, Indigenous Knowledge, consent, etc. as being an obligation to implement. This leaves gaps in previous treaties and declarations that can create loopholes to disengage Indigenous Peoples, or not provide them adequate attention. For example, in the 2020 Biodiversity Goals and Targets for Canada, Canada Target 8 states “By 2020, all aquaculture in Canada is managed under a science-based regime…” which does not account for the use of Indigenous knowledge systems, only mention of consultation with Indigenous groups being important, but not required (Biodivcanada, 2015). Similarly, the SDGs only specifically mention Indigenous Peoples in SDG 2 Zero Hunger (target 2.3) and Goal 4 Education (target 4.5), with no mention at all about TK or IPCAs in any target (UNESAIP, n.d.). Given the increase of research into IPCA development and significance in the past decade, it can be expected that the body of research will increase, and there will be a significant growth in the mention of Indigenous-based conservation and knowledge in national and international instruments, laws, tools, and discussions.

Chapter Four: Case Studies

4.1. Introduction

This section of the thesis will delve into two different case studies to further demonstrate the environmental, social, and economic benefits of Indigenous Protected and Conserved Areas through real life examples. The first case study looks at Tla-o-qui-aht Tribal Parks in British Columbia, which represents an IPCA that was created through the autonomous method of establishment in the temperate deciduous forest biome. The second case study looks at the Edéhzhíe National Wildlife Area and Dehcho Protected Area in the heart of the Northwest Territories and the taiga plains ecozone, which was established in collaboration with the Canadian government. These two case study areas were chosen to showcase the strengths and weaknesses of Indigenous protected areas from both autonomous conservation method and a co-managed conservation method, in addition to showcasing two different ecozones within Canada.

4.2. Tla-o-qui-aht Tribal Parks, British Columbia

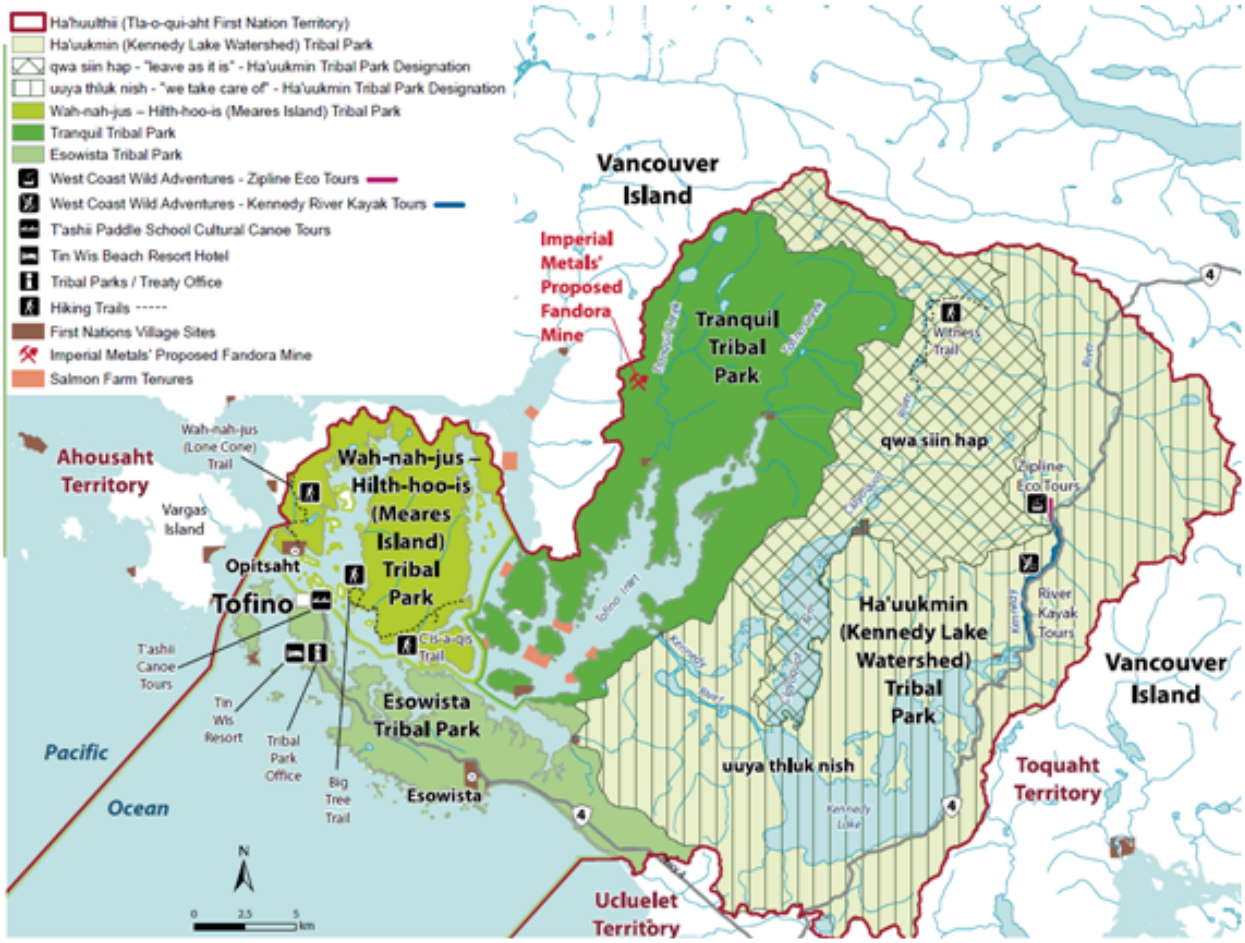

Figure Two: A map of the four parks that make up the Tla-o-qui-aht Tribal Parks, British Columbia (Tla-o-qui-aht Tribal Parks, 2022a)

Introduction and Creation

The Tla-o-qui-aht Tribal Parks were created through self-declaration outside of the treaty process, representing the sovereignty and assertion of ƛaʔuukʷiʔatḥ (Tla-o-qui-aht) rights, becoming the first and leading example of a Tribal Park model across the globe (Tla-o-qui-aht First Nation, 2018). The first of four Tribal Parks created was the Wanačis ḥiłhuuʔis (Meares Island) and was created as the result of the ƛaʔuukʷiʔatḥ People and settler allies protesting the logging operations that were occurring without consent on ƛaʔuukʷiʔatḥ aht traditional territories in the 1980's. This was one of Canada's biggest civil uprises, with over 2,000 land defenders being arrested (Wood, 2021). The situation was raised to the British Columbia court of Appeal, resulting in a successful injunction on Wanačis ḥiłhuuʔis (Meares Island) to temporarily stop logging until land-claim issues could be resolved (Tla-o-qui-aht First Nation, 2018). By 1984, the Tla-o-qui-aht Nation declared the first Tribal Park in order to ensure sacred relationships and traditional resource management could be implemented and monitored. As resource developers continued to threaten the ƛaʔuukʷiʔatḥ traditional territories, the ƛaʔuukʷiʔatḥ People declared the second Tribal Park, the Ha`uukmin (Kennedy Lake Watershed), in 2008 in order to block mining exploration within the Tranquil Creek watershed with the assistance of multiple other environmental groups. In 2014, the third and fourth Tribal Parks, Tranquil and Esowista were declared in order to protect the area from the potential development of a gold mine (Tla-o-qui-aht First Nation, 2014). The logging practices that sparked the creation and ongoing protection of the Tribal Parks took place only in the territories of the Tla-o-qui-aht, Ahousaht and Hesquiaht First Nations. But in response to the conflict, the B.C. government handed over control through two tree farm licenses in Clayoquot Sound to the five First Nations of the Nuu-chah-nulth Tribal Council (Wood, 2021). The five nations, Tla-o-qui-aht, Ahousaht, Hesquiaht, Yuułuʔiłʔatḥ (Ucluelet) and the Toquaht First Nations, subsequently created a jointly owned forestry corporation, Ma-Mook Natural Resources, which owns the tree licences (Wood, 2021). However, there were many disagreements regarding how much logging should still take place and how much should be protected in order to continue to pay for the license to protect the forest. In 2014, the Tla-o-qui-aht Tribal Parks were officially declared through a self-declaration to manage and protect the traditional territory of the Tla-o-qui-aht using the ƛaʔuukʷiʔatḥ Principles of Hishukish Tsawaak (everything is one, interconnected) and Hawilthmis (Governance Chief's Laws and Responsibilities) (Tla-o-qui-aht First Nation, 2014). This could be done because an official treaty was never implemented between the ƛaʔuukʷiʔatḥ Peoples and the Canadian Government, meaning officially their inherent right to steward their own territories were never surrendered for the area. The Declaration states the benefits of preserving the old growth forests environmentally, socially, and economically, including combating climate change, protecting sacred and burial sites, air and water filtration, protection of ƛaʔuukʷiʔatḥ Nation rights, opportunities for research and education, and ecosystem preservation. Representatives from the Tla-o-qui-aht Nation have stated the aim is to buy out the tree farm areas from Ma-Mook Natural Resources to create an official IPCA (Wood, 2021).

Geography

The Tla-o-qui-aht Tribal Parks are located in modern day Nackis (Tofino British Columbia), comprising a portion of the Tla-o-qui-aht Haahuulthii (traditional territories) and the temperate Deciduous Forest Biome – Pacific Maritime ecozone. The Tla-o-qui-aht Haahuulthii extends past Tofino into Meares Island, Long Beach and to Sutton Pass, overlapping with the Clayoquot Sound UNESCO Biosphere Reserve designated in 2000 (Tla-o-qui-aht First Nation, 2018; UNESCO, 2018). There are four Tribal Parks that make up the Tla-o-qui-aht Tribal Parks, each with their own resource management plan guided by TK (Natural Law) of the Ha'wiih (Hereditary Chiefs) and the Tla-o- qui-aht Peoples (Tla-o-qui-aht First Nation, 2014). The Tribal Parks are not only within the Tla-o-qui-aht Haahuulthii, but are also overlain with Crown land, British Columbia Provincial Parks, portions of the Pacific Rim National Park Reserve, forest tenures and private lands (Tla-o-qui-aht First Nation, 2018). The proximity to Pacific Rim National Park Reserve meant that logging that ceased in that area after it was established in 1971 was expedited in nearby forests such as those on Meares Island. Two years after the passing of the Canadian Constitution Act and Section 35 rights, blockades were created by the Tla-o-qui-aht First Nation and local environmental groups to protect enormous old-growth trees in the area from being logged, resulting in the Tribal Parks over the next few decades (Wood, 2021). There are many species comprised within the Tribal Parks, both cultural keystone species as well as species at risk, including many varieties of whales, ancient cedar trees, deer, mosses and lichens, black bears, bald eagles and salmon. Ecotourism in Tofino now brings in about 66,000 visitors annually generating approximately $400 million in economic output for the area due to the protection of these old-growth forests (Wood, 2021). According to Nature United, 100 million tonnes of carbon are stored in the old-growth forests of Clayoquot Sound, making it one of the largest land-based carbon storages on the planet (Nature United, n.d.). Despite the significance of British Columbia's coastal temperate rainforests, Vancouver Island alone has lost 30% of its original old growth forests over the last 25 years, with old growth forests now covering less than 7% of Vancouver Island (Sierra Club BC, 2018).

Management

The Tla-o-qui-aht Tribal Parks are managed by the Tribal Parks Guardian Program in partnership with other organizations in the region to protect and restore the land. The Guardians are involved in numerous restoration activities in addition to watching over the land and monitoring the ecosystem, including the restoration of rivers that have been degraded from unsustainable logging practices, revitalizing salmon habitats, remediating sensitive dune-grass habitats, beach and back road cleanups, removing and recycling vessel and marine debris, controlling invasive species, and maintaining and developing trails for safe and environmentally sound recreational activities (Tla-o-qui-aht First Nation, n.d.). The Tribal Parks also have a Junior Guardian Beach Monitoring Program to involve Indigenous youth in learning the importance of traditional teachings and conservation of the area (Tla-o-qui-aht First Nation, 2021). The parks are managed by traditional teachings of the ƛaʔuukʷiʔatḥ People that have been cultivated from a long-standing relationship

between nature and the ƛaʔuukʷiʔatḥ People. In modern times, Guardians and caretakers have had to adapt to allow newcomers in the form of settlers and Indigenous allies into the community in order to protect the parks from unwanted exploitation and degradation. Partnerships to protect the Tribal Parks includes the Reddfish Restoration Society, Tofino Salmonid Enhancement Society, and the Coastal Restoration Society (Tla-o-qui-aht First Nation, 2021).

The Tla-o-qui-aht Tribal Parks were created without the assistance of any Canadian Governments and are managed in a similar fashion. The Tribal Parks do not receive regular government budgets or assistance like national and provincial parks; however, the Tribal Parks do apply for grants and loans, some of which are awarded by the government such as being awarded $445,000 from the Province of BC through the Community Economic Recovery Infrastructure Program (CERIP), and $99,964 awarded from Tourism Vancouver Island from the Tourism Regional Development Fund (TRDF) (Tla-o-qui-aht First Nation, 2021). A majority of stable funding for the Tribal Parks derives from the Ecosystem Service Fees from park Allies and private donors. The Ecosystem Service Fees applies to all Tribal Park Allies, where 1% of every purchase made in their business goes towards the people and ecology that comprise the Tribal Parks, this includes salaries, park maintenance, education and training, and equipment (Tla-o-qui-aht First Nation, 2021). In 2021, this fee in addition to donations raised and the Big Tree Trail Fee, accumulated $277,260.37 for the Tribal Parks (Tla-o-qui-aht First Nation, 2021). However, this funding is subjected to being negatively altered in times of change such as from human alteration or natural disasters, as was exemplified by the pandemic when tourism was lower and businesses were closed and allies only raised $55,088 in 2019 (Tla-o-qui-aht First Nation, 2019).

Conclusion

The majority of Clayoquot Sound's Old-Growth forests remain unprotected by the Provincial or Federal Governments and are still recognized as Tree Farms rather than a protected area (Tla-o-qui-aht First Nation, 2019). Although the Tribal Parks utilize the Indigenous autonomy method of conservation management, it has been a long battle with both the government and tree harvesting companies. During the 1984 legal proceedings to protect Meares Island from harmful logging, the Tla-o-qui-aht Nation expended over $5 million in legal fees (Tla-o-qui-aht First Nation, 2019). Additionally, after gaining control of two tree farming licences (54 and 57), the Tla-o-qui-aht and other Nuu-chah-nulth Nations have paid $400,000/year for over 30 years in rent to the Province of British Columbia to prevent other logging companies from destroying the ancient forests (Tla-o-qui-aht First Nation, 2019). The cost of conserving these lands was serviced from Tla-o-qui-aht communities causing increased levels of poverty (Tla-o-qui-aht First Nation, 2019). Inconsistent funding, grants and subsidies cause uncertainty from one year to the next. The Tribal Parks protect 212.49km2 (21,249 hectares) of old-growth ancient forests, resulting in a variety of ecosystem services both locally and nationally, including most importantly supporting cultural practices and business opportunities for Indigenous Peoples contributing to reconciliation goals, carbon

sequestration and oxygen production for climate goals, and protecting numerous diverse plant and animal species for biodiversity goals (David Suzuki Foundation, 2018).

4.3 Edéhzhíe National Wildlife Area / Dehcho Protected Area, Northwest Territories

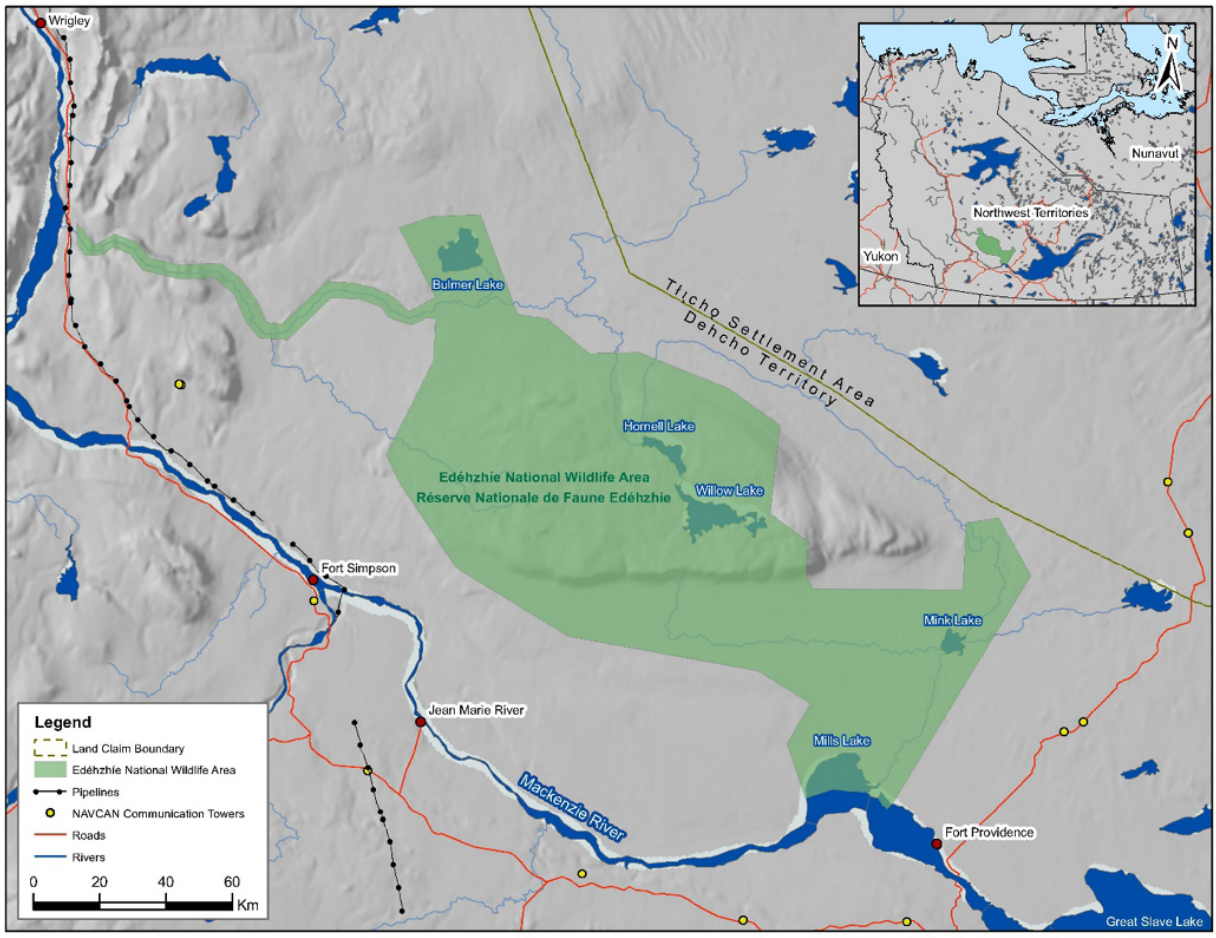

Figure Three: A map of the Edéhzhíe National Wildlife Area and Dehcho Protected Area, Northwest Territories (Canada Gazette, 2021).

Introduction and Creation

In 2018, the Dehcho First Nations, in partnership with the Government of Canada and the Northwest Territories, announced the establishment of the Edéhzhíe National Wildlife Area (co-designated as Dehcho Protected Area) in the Northwest Territories under Dehcho Dene law, making the first IPCAs established in conjunction with the Canadian government and Pathway to Canada Target 1 (Canada Gazette, 2021). This is the first co-managed IPCA designated by the political and financial framework established by Canada's Nature Legacy Initiative (Canada Gazette, 2021). The area is the product of decades of community-led stewardship initiatives in the Mackenzie Valley, including crucial water governance, pipeline development inquiries, land-claim negotiations and collaboration to protect the natural environment and watersheds (Latta, 2022a).To

fall in line with the requirements of an IPCA, the Edéhzhíe is designated as a National Wildlife Area rather than a National or Provincial Park, however, National Wildlife Areas are still protected and managed according to the Wildlife Area Regulations of the Canada Wildlife Act (NRC, 2022b). The Edéhzhíe is co-managed by the Dehcho First Nations and the Government of Canada, utilizing both western and traditional conservation methods and knowledge through a two-eyed seeing approach. The protection of Edéhzhíe stemmed from the desire of the Dehcho First Nations to protect both their culture and their traditional territories. Edéhzhíe was designated under Dehcho law as a protected area in July of 2018 and was later in October classified an IPCA through the signing of the Edéhzhíe Agreement signed by the Government of Canada and the Dehcho First Nations Grand Chief (NRC, 2022b). The Agreement will be reviewed every year within the first 8 years of Edéhzhíe being fully protected, and then will be independently reviewed every 10 years after, with changes not being made to the agreement unless both parties agree(Edéhzhíe Team, 2020b). Changes to the agreement may include changes to match any rights and benefits for the Dehcho First Nations recognized in the future by treaties, crown agreements, declarations, or court decisions (Edéhzhíe Team, 2020b).

Geography

Edéhzhíe covers 14,218km^2 of area in the Northwest Territories north of the Mackenzie River, bordering both Dehcho and Tłı̨chǫ First Nations traditional territories (NRC, 2022b). Edéhzhíe contains key biodiversity areas, cultural sites, cultural keystone species and species at risk within the taiga plains ecozone. Key biodiversity areas include wetlands, forests, the Horn Plateau (600m escarpment of Mackenzie Valley), and the headwaters for much of the watershed of the Dehcho region, including the Horn and Willowlake rivers and a portion of Mills Lake (Canada Gazette, 2021). Mills Lake is extremely important for waterfowl, being designated an Important Bird Area of Canada in 2004 and an International Biological Program Site (NRC, 2022b). Edéhzhíe protects nearly 200 species of native plants and 250 species of amphibians, fish, birds, and mammals, including most predominantly cultural keystone species at risk the Woodland (boreal) caribou and wood bison, in addition to other species at risk including wolverine, peregrine falcon and the short-eared owl (NRC, 2022b). Given the long and cold winters with cool summers influenced by the arctic air in the tundra plain ecozone, a majority of species (about 197 of 250) are migratory birds including the fox sparrow, blackpoll warbler and white-throated sparrow (NRC, 2022b).

Management

The Edéhzhíe National Wildlife Area was created in partnership between the Government of Canada and Dehcho First Nations, meaning it is co-managed and operated using a two-eyed seeing system. Decisions are made solely by the Edéhzhíe Management Board comprising elected board members appointed for 4-year terms, making decisions based on three key principles; protecting the land, supporting the relationship between Dehcho Dene and the land, and contributing to reconciliation (NRC, 2022b; Edéhzhíe Team, 2020b). The board consists of 7 members, 5 members from the Dehcho (whole DFN region, Tthets'éhk'edélı ̨/ Jean Marie River, Łıudlıı ̨Kų́ę́ ̨

/ Fort Simpson, Pehdzeh Ki / Wrigley, Deh Gáh Got'ie / Fort Providence), 1 member for the Government of Canada, and 1 impartial chair, that Dehcho First Nations and the Government of Canada choose together (Edéhzhíe Team, 2020b). If Dehcho First Nations and/or the Government of Canada need to take action on something affecting Edéhzhíe, and the Management Board cannot make a decision quickly, both parties can agree on and take action together, or in the case of an emergency (e.g. fire), then either party by themselves, may take action to protect Edéhzhíe, and tell the Management Board and the other party after (Edéhzhíe Team, 2020b). The board was established by Dehcho First Nations and ECCC meeting quarterly to discuss staff, working within the community, an Elders Harvesters Committee, work plans, budget, etc. (Edéhzhíe Team, 2020a). Given the more recent development of the Edéhzhíe National Wildlife Area, the Edéhzhíe Management Plan is still in development by the Management Board, however it was announced the plan is being developed by a community-driven approach and will encourage Dehcho Dene presence directly on the land. This includes promoting the continuance of using Dehcho languages, harvesting activities and promoting Dehcho cultures. An extension of this approach to promote Dehcho cultures is administered through the Dehcho K'éhodi Stewardship and Guardian Program which undertakes patrols, research projects, stewardship activities and youth mentoring (NRC, 2022b). Funding for the Management Board, staff salaries, infrastructure, programs and activities are provided by the Government of Canada, with a budget to be developed and submitted every year to the Government of Canada. The Dehcho First Nations are also developing an Edéhzhíe Fund to collect money from donors, which Canada will match until October of 2023 up to $10 million (Edéhzhíe Team, 2020b). The Government of Canada can also set aside funds for its own work in Edéhzhíe, as well as add additional funds towards Edéhzhíe at any time (Edéhzhíe Team, 2020b).

Conclusion

The Edéhzhíe National Wildlife Area accumulates 14,218km^2 of land and waters in Canada, over twice the size of Banff National Park. The creation of Edéhzhíe marked a significant turning point in Indigenous-based conservation, becoming the first IPCA established since the inception of Pathway to Canada Target 1 and the first established from the launch of the Canada Nature Fund (NRC, 2022b). This historic conservation area creates a space of great cultural and spiritual significance to the Dehcho and Tłichô Dene, as well as providing great ecological significance to the Northwest Territories and Canada (NRC, 2022b). Through the protection of ecological and culturally significant watersheds and species, the Edéhzhíe provides a strong resource to be utilized towards reaching Canada's national and international environmental targets and reconciliation goals from a shared governance framework between Indigenous Peoples and Canadian governments.

Chapter Five: Results

5.1. Data Analysis

This thesis utilized a scoping review approach of data collection and analysis to form a comprehensive understanding of IPCAs and their ability to strengthen contributions to environmental targets and reconciliation goals at both a national and international level. The combined findings of the literature review and case study analysis are demonstrated below through a brief PESTLE analysis. A PESTLE represents the different spheres that relate to the requirements needed to meet both the binding and non-binding treaties and declarations outlined in the literature review. The analysis concludes that IPCAs create a foundation for reconciliatory actions and enhanced environmental welfare which overall contributes to a number of Canada's environmental targets and reconciliation goals. The combined results from the literature review and case study analysis answer research questions one and two, while the following sections recommendations answer question three.

Political	The Canadian government has a variety of national and international environmental targets and reconciliation goals that have not been reached. Many of these are legally binding such as the CBD and Paris Agreement, while others are not legally binding but should strive to be met in terms of Peace, Order and Good Government (The Canadian Encyclopedia, 2020).
Economic	IPCAs contribute to the transition of a green economy while providing local businesses and establishments with economic benefits deriving from ecotourism. Additionally, IPCAs support local Indigenous communities by providing numerous jobs in the ecotourism sector and through Guardianship programs.
Social	Local Indigenous communities are able to utilize their own laws, languages, and culture to promote and educate people on their traditional values. After a long history of colonization and assimilatory policies, many Indigenous cultures and ways of life were lost, IPCAs provide the opportunity to both revive their cultures and promote the importance of their existence.
Technological	TK methods are highly specific to each location and each unique culture of a nation, passed down through generations by oral history and the preservation and protection of each nation's TK is of utmost importance, so it is not generally widely shared with external audiences.
Legal	Providing Indigenous Peoples autonomy over lands and the ability to self-govern contributes to reconciliatory actions. Indigenous Peoples have been subjected to colonialist practices and laws, and still try to abide by them, however each nation has their own form of law that can be utilized and practiced within an IPCA.
Environmental	Indigenous Peoples have been proven to be more effective environmental stewards, safeguarding 80% of the worlds remaining biodiversity although they only comprise approximately 20% of the world's population.

Table One: Results-based PESTLE Analysis

5.2. Recommendations

5.2.1. Recommendation One: Government Recognition and Development

There are many IPCAs, and Tribal Parks being proposed or already established across Canada by various Indigenous nations who want to see their culture and local ecological integrity protected but may not have the funds or resources to do so adequately. The research suggests that trust between many Indigenous nations and Canadian governments has been severed over centuries of mistreatment and colonization, and it is important to rebuild that trust and recognize these areas and their importance to the Canadian environment, society, and economy. The ecosystem services and benefits are clear, however a variety of IPCAs self-established by Indigenous People across Canada are not considered towards the total percent of protected areas utilized to meet environmental targets. According to the Government of Canada, IPCAs can count towards Canada Target 1 when they are recognized as a Protected Area or an OECM following guidance found in the *One with Nature* report (Pathway to Canada Target 1, 2019). This means the IPCA must qualify under the nine Pathway Decision Support Tool requirements and the participating nations must consent to the area being counted. To truly recognize the significance and importance of IPCAs, when accounting for protected areas in the future, Canada should create a separate category for IPCA calculations. The percentage of IPCAs would then be defined separately, providing proof and public recognition of their importance in society and for meeting conservation goals at both a national and international level.

Additionally, there is currently no formal database to determine how many IPCA projects, Guardian programs or Tribal Parks are currently operating or proposed in Canada by Indigenous nations. There is a database for the proposed projects that are developing under the Canada Target 1 Challenge, a majority of which are Indigenous-led or contributed (NRC, 2021a). Additionally, the Canada Protected and Conserved Areas Database shows all the protected areas and OECMs accounted for Canada Target 1, which must meet the Pathway Decision Support Tool requirements, however this does not include a variety of IPCAs and Tribal Parks across Canada, including the Tla-o-qui-aht Tribal Parks, BC (Pathway to Canada Target 1, 2019; NRC, 2022a). This is because they do not meet certain requirements to be considered a protected area or OECM, or the participating Indigenous nation did not want to be included in the calculations. It is also suggested a separate database or process be created in collaboration with Indigenous Peoples to showcase both proposed and existing IPCAs, Guardian programs and Tribal Parks across the country. This can be utilized by governments, academics, and various organizations in identifying where Indigenous-based conservation is occurring across the country, which could potentially further support locating where funding, resources and projects should be directed, supporting further research on Indigenous-based conservation, and supporting planning processes and results for environmental targets and reconciliation goals.

5.2.2. Recommendation Two: Ecozone Prioritization and IPCA Development

As proven by the literature review and case studies, Indigenous Peoples are more effective environmental stewards through means and motive to protect large swaths of biodiversity across the country. With a variety of IPCAs and Tribal Parks being proposed or self-established across the country, it is important to prioritize the development in ecozones that can provide a number of ecosystem services to contribute more highly to environmental goals and environmental protection mechanisms. Ideally, all proposed IPCAs would be assisted in development, protection, and maintenance, but realistically it takes time, money, and effort in order to establish protections through boundaries, jurisdictions, and legal precedents. This recommendation is focused on a western science criterion for protected area development, it is important to note that many Indigenous Peoples may object to this scientific way of looking at ecosystem services as IPCAs are important tools to protect traditional territories, culture, and ways of life. While IPCAs can help to advance Canada's conservation agenda through ecosystem services, it is important to recognize the ultimate purpose of IPCAs is to advance Indigenous Peoples conservation agendas, rights and to safeguard Indigenous cultures and ways of life. This recommendation focuses on government assisted IPCA development rather than IPCA development from sovereign Indigenous governments. For participating Indigenous Nations that want to establish an IPCA with some sort of government assistance, such as funding or recognition, it is recommended from the research that governments highlight developments in the following terrestrial ecozones in order to maximize ecosystem services and strengthen contributions to environmental targets.

First, the Pacific Maritime and Montane Cordillera contained in British Columbia is the most biodiverse province due to the Pacific Maritimes warm and wet climate causing a large mixture of vegetation including what is still intact of Canada's ancient old growth forests. The Pacific Maritime should be prioritized due to the fact that British Columbia comprises a majority of Canada's biodiverse species, including a large variety of species at risk and cultural keystone species (BC Ministry of Environment, n.d.). Additionally, British Columbia is subjected to very high rates of ecotourism, which although creates funding for conservation areas, it may cause a large number of human induced disturbances. IPCAs as mentioned previously provide direct on the land monitoring that can be utilized to monitor human-based interferences and mitigate those impacts to biodiversity. Lastly, forestry is a very large industry in these ecozones due to the number of old growth trees. Many IPCAs being fought for in the region are culturally and ecologically significant to local Indigenous Peoples. For example, the Tla-o-qui-aht have been fighting for decades to protect the ancient rainforests on their territory in the Pacific Maritime ecozone from encroaching forestry and have spent millions on tree farming licences and legal fees to protect these forests. The development and ongoing protection of IPCAs in these ecozones is integral to protecting a plethora of biodiverse species and carbon storage.

Second, the Prairies and Boreal Plains ecozones found majorly in Saskatchewan are found with an overabundance of agriculture which leaves the region susceptible to higher rates of drought and erosion. However, there are a variety of wetlands which provide a major breeding ground for more

than half of North American waterfowl (Ducks Unlimited, n.d.). As these temperate grasslands continue to degrade from high rates of conversion into agricultural land, it is increasingly important to protect remaining wetlands not just for species protection, but also to improve agricultural productivity through the ecosystem services provided by local protected wetlands including erosion control, pest and disease regulation, pollination, nutrient cycling, and soil formation.

Third, the Boreal Shield ecozone, a part of Canada's largest biome stretching across a majority of provinces and territories. Much like the monitoring of human disturbances, Indigenous Guardians and stewards can monitor and care for the land of the Boreal Shield to protect and promote biodiversity. The Boreal shield is subjected to periodic disturbances of wildfire and insect epidemics due to its dense forest landscape. Indigenous Peoples that have lived on and around those lands for centuries have accumulated knowledge in regard to the monitoring and management of these forests, including methods that can be utilized to protect these forests such as using prescribed burns and when.

Finally, the Mixedwood Plains which are found primarily in southern Ontario. Although it is more difficult to establish conservation areas in such a densely populated area, the dense population is also why there is a desperate need for conservation in this ecozone. The amount of infrastructure and concreate in urban and suburban areas of southern Ontario blocks a large amount of ecosystem services. Through the implementation of local IPCAs, local populations will be able to learn more about local Indigenous Peoples and Cultures, reap the mental and physical health benefits associated with local conservation areas, and most importantly it provides enhanced mitigation to natural disaster mitigation such as flooding and erosion.

5.2.3. Recommendation Three: National IPCA Policy

Although research suggests that the promotion of IPCAs has been more advanced by the Canadian Government in the past decade, there are still many obstacles faced by IPCAs seeking to become established across Canada. Besides funding, there are many jurisdictional, legal, and political implications that halt the progress of IPCA development. Many provincial and territorial governments do not agree with the development of IPCAs in some locations due to a variety of reasons including the ability of a conservation area to block mining, forestry or drilling in the area. For example, the Grassy Narrows First Nation declared an IPCA on its territory in 2018 and forbade any mining or industrial activity within the area, however the Province of Ontario has since allowed a rush of mining claims and have proposed industrial logging on the area while refusing to meet with the Nation in regard to issues of land protection (Wang, 2021; McIntosh, 2022). With IPCAs being established still having a large issue with boundaries and adequate protection from external industrial activity, it is important that alongside recommendation one, Canada develop a national policy to seriously protect, recognize and legitimize IPCAs, especially

for IPCAs that are developed on unceded traditional territories and protected by sovereign Indigenous governments.

The creation of national policy for the establishment and complete protection of IPCAs would be required to be co-developed with Indigenous nations from a variety of IPCAs, Tribal Parks and Guardian programs, coming from various backgrounds of First Nations, Métis and Inuit from each province and territory. Additionally, the policy would have to be binding for the Indigenous, federal, provincial, and territorial governments which sign the Act. A national policy to guarantee the safety and protection of IPCAs from external forces would fall in line with it being Indigenous-led and would satisfy the UNDRIP/UNDA requirement for acquiring FPIC. The policy itself would require a number of specific requirements including how protection would be allocated and measured, which activities would be deemed as dangerous and restricted within IPCA boundaries, and which IPCAs and Tribal Parks would be accounted for under the Act. In terms of allocating protection measures, it is recommended that Guardian programs be utilized to monitor suspicious activity and that the governing structure represented by the IPCA (Indigenous autonomy or co-governance) determine which activities are deemed inappropriate for the conservation area. Recommended restricted activities within the IPCA are recommended but not limited to clear cutting, mining, drilling, and dumping. Finally, it is recommended that IPCAs accounted for under the Act would have to meet specific requirements such as they must follow ICE's IPCA requirements of being an Indigenous led long-term commitment to conservation that elevates the rights and responsibilities of Indigenous Peoples (Indigenous Circle of Experts, 2018). Further research into the ramifications of current treaties and self-government agreements between Canadian and Indigenous governments, in addition to existing jurisdictional cases between governments would have to occur to further this recommendation.

Chapter Six: Conclusions

6.1. Conclusions from the Research

6.1.1. Research Question One

What has past research revealed about the incorporation of Indigenous knowledge in conservation practices, and the significance of this incorporation for wider processes of reconciliation?

Past research specifically aimed towards Indigenous conservation in relation to targets and goals is relatively sparse, however, represents an expanding research theme in academia. However, a majority of research currently related to Indigenous conservation being utilized to meet environmental targets and reconciliation being primarily related to Canada Target 1 or UNDRIP. A greater part of research in direct relation to national and international environmental targets and reconciliation goals and Indigenous conservation is comprised majorly in news articles and policy briefs, which have been increasing the past decade after the release of the *We Rise Together* ICE Report which highly promoted the utilization of IPCAs in Canada to meet Canada Target 1. As evident from the literature review, there is a plethora of research into the importance of TK in conservation activities, including the enhanced effects of on the ground Indigenous stewardship activities and knowledge regarding conservation outcomes. The Canadian government could consider this research to provoke additional development and ongoing support of Indigenous-based conservation areas. This should include the promotion and utilization of Indigenous knowledge in correlation with the appropriate copyright processes to avoid the assimilation of Indigenous knowledge into western knowledge.

6.1.2. Research Question Two

How do IPCAs strengthen contributions towards meeting national and international obligations for environmental targets and reconciliation goals?

The findings of the literature review and case studies support recent research suggestions that propose that Indigenous stewardship leads to improved conservation and reconciliation efforts. Environmental targets are supported through enhanced on the ground stewardship and cultural connectivity leading to evident improvements in conservation outcomes, including increased species protection and maintenance. Indigenous Peoples are closely connected to the land through traditional knowledge, harvesting methods and spirituality that provides an enhanced means and motive to protect traditional territories. Through safely and adequately providing access and rights to traditional territory lands, Indigenous Peoples can more effectively utilize their legal and inherent rights to harvesting, knowledge use and decision-making, which directly correlates to reconciliatory practices between Indigenous and Canadian governments. In conjunction with meeting environmental targets and reconciliation goals, it is evident that environmental and reconciliation efforts in Canada can be strengthened through the support, recognition, and implementation of Indigenous Protected and Conserved Areas (IPCAs). This includes either co-managing conservation areas through a two-eyed seeing approach or allowing Indigenous Peoples

to assert autonomy over their traditional territories. Through this practice, Canada can strengthen its contributions to binding international obligations; including, the Paris Climate Agreement and the Convention for Biological Diversity (CBD), as well as numerous international and national customary commitments; including UNDRIP and UNDA, the Truth and Reconciliation Commission (TRC) and its Calls to Action, and the Sustainable Development Goals.

6.1.3. Research Question Three

What are the policy recommendations that emerge to advance the creation and protection of IPCAs?

To strengthen contributions to environmental targets and reconciliation goals, Canada must strengthen the development and protection of IPCAs. This thesis determined three policy recommendations for the utilization and recognition of IPCAs. The first recommendation was to create a separate category for IPCA calculations within environmental goal calculations and develop a specific IPCA conservation area database that does not only include those being established in conjunction with government initiatives, but self-established IPCAs. This would provide greater recognition and legitimacy of IPCAs, whether under a shared governance or Indigenous autonomy model. The second recommendation posed the ecozones where IPCA development would be most beneficial in terms of ecosystem services and other external factors such as population density. A recommendation for further research includes determining which IPCAs are currently proposed or developing in those ecozones and assure they are given priority. The third recommendation further seeks to legitimize IPCAs through the development of a national policy created in conjunction with Indigenous Peoples across Canada to seriously protect, recognize and legitimize IPCAs and their different methods of establishment. As IPCAs have proven enhanced environmental and reconciliatory properties, these policy recommendations would improve Canada's efforts towards its own commitments and obligations, while delivering on international obligations to the environment and commitments to Indigenous welfare and improved relationships.

6.2. Limitations and Suggestions for Future Research

There were two major limitations while writing this thesis that would inspire further research into the related subject matter. Firstly, the original proposal for this thesis included conducting interviews with participating Indigenous Peoples within the case study areas. Originally this thesis proposed to conduct three case studies with three back-up case studies for interviews, in addition to interviewing federal government employees who were employed in Indigenous conservation-based fields. The beginning of the thesis writing process began with several weeks of contacting Indigenous Peoples associated with the case study areas, and then continued on to contact more areas than the original six chosen. Responses were not very positive as many restrictions resulted from the COVID-19 pandemic, and many nations had become extremely busy with requests for consultation and projects from the government, academia, NGOs, and various organizations.

Under the circumstance of not being able to conduct direct opportunities for learning, my ability to employ Indigenous methods was limited, resulting in a more western concentrated thesis despite the attempt to include many Indigenous authored and non-academic documents. It is suggested that for future research, interviews are conducted to validate the findings of this thesis within an ethical space. The second limitation that occurred during the formation of this thesis was the time and page constraint of a master's level thesis. The discussion of IPCAs in relation to being utilized to meet environmental targets and reconciliation goals has only just scratched the surface within this thesis. Therefore, it is suggested that a variety of themes left out of this thesis be conducted within future research. This includes but is not limited to further exploring the five marine ecozones in Canada as this thesis only explored the terrestrial ecozones, how partnerships between Indigenous Peoples and organizations/NGOs can spur the development and protection of IPCAs (e.g. UNESCO, Nature Conservancy, CPAWS), which IPCAs are currently in development within the ecozones mentioned in recommendation two, and finally, conducting an in-depth analysis into why there are still many IPCAs that have been declared or developed not included in the Canadian Protected and Conserved Areas Database and being counted towards Canada's total percentage of protected areas.

References

Aichi Biodiversity Targets (2010) *Strategic Plan for Biodiversity 2011-2020, Including Aichi Biodiversity Targets*. Retrieved from https://www.cbd.int/sp/targets/

Artelle, K., Zurba, M., Bhattacharyya, J., Chan, D. E., Brown, K., Housty, J. A., & Moola, F. (2019). *Supporting resurgent Indigenous-led governance: A nascent mechanism for just and effective conservation*. Retrieved from https://doi.org/10.1016/j.biocon.2019.108284

Assembly of First Nations [AFN] (2010). *Aboriginal Traditional Knowledge and Intellectual Property Rights*. Retrieved from https://www.afn.ca/uploads/files/env/atk_and_ip_considerations.pdf

Assembly of First Nations [AFN] (2019). *Haida Nation v British Columbia*. Retrieved from https://www.afn.ca/timeline/haida-nation-v-british-columbia/

Assembly of First Nations [AFN] (n.d.a) *Co-Management Discussion Paper*. Retrieved from https://www.afn.ca/uploads/files/env/comanagement_paper.pdf

Assembly of First Nations [AFN] (n.d.b). *Honouring Earth.* Retrieved from https://www.afn.ca/honoring-earth/

Assembly of First Nations [AFN] (n.d.c). *Honouring Fire*. Retrieved from https://www.afn.ca/honoring- fire/

Australian Human Rights Commission (n.d.) *Right to Self Determination*. Retrieved from https://humanrights.gov.au/our-work/rights-and-freedoms/right-self-determination

Bartlett, C., Marshall, M., Marshall, A. (2012). *Two-eyed seeing and other lessons learned within a co-learning journey of bringing together Indigenous and mainstream knowledges and ways of knowing*. Journal of Environmental Studies and Sciences, 2, 331–340. https://mikmawconservation.ca/wp-content/uploads/2019/10/Bartlett_Marshall-_2012.pdf

BCcampus Open Education (2019). *Pulling Together: Foundations Guide – Section 2: Colonization*. Retrieved from https://opentextbc.ca/indigenizationfoundations/part/section-2/

Bearfoot, C. (2022). *Land Back: The Indigenous Fight to Reclaim Stolen Lands*. Retrieved from https://www.kqed.org/education/535779/land-back-the-indigenous-fight-to-reclaim-stolen lands

Berkes F, Colding J, Folke C (2000) *Rediscovery of traditional ecological knowledge as adaptive management.* Ecol Appl 10: 1251–1262.

Biodivcanada (2015) *2020 Biodiversity Goals and Targets for Canada*. Retrieved from https://www.biodivcanada.ca/national-biodiversity-strategy-and-action-plan/2020-biodiversity-goals-and-targets-for-canada

Black, K., McBean, E. (2017) *Analysis of challenges and opportunities to meaningful Indigenous engagement in sustainable water and wastewater management.* Water Policy 1; 19 (4): 709–723. Retrieved from https://doi.org/10.2166/wp.2017.078

Blaise, K. (2020). *Briefing Note: Legal Landscape of Indigenous Protected and Conserved Areas (IPCAs) in Ontario.* Retrieved from https://davidsuzuki.org/wp-content/uploads/2020/08/CELA-DSF-Legal-Landscape-IPCAs-Ontario.pdf

British Columbia Ministry of Environment, Lands, and Parks, Ministry of Forests (n.d.) *Biodiversity in British Columbia*. Retrieved from https://www.env.gov.bc.ca/wld/documents/env.biod.pdf

Brown, C., Henstra, D., Scott, D., Thistlethwaite, J. (2020) *Barriers to Insurance as a Flood Risk Management Tool: Evidence from a Survey of Property Owners*. International Journal of Disaster Risk Science 11(1). Retrieved from DOI:10.1007/s13753-020-00272-z

Bruchac, M. (2014). *Indigenous Knowledge and Traditional Knowledge.* In Smith, C. (Ed.), Encyclopedia of Global Archaeology, 3814-3824. New York: Springer.

Bysouth, D., Turetsky, M., Spring, A. (2021) *Agriculture in the Boreal Forest: Understanding the Impact of Land Use Change on Soil Carbon for Developing Sustainable Community Food Systems*. EGU General Assembly Conference Abstracts. Retrieved from DOI 10.5194/egusphere-egu21-6071

Canada Gazette (2021) *Canada Gazette, Part I, Volume 155, Number 10: Regulations Amending the Wildlife Area Regulations and the Environmental Violations Administrative Monetary Penalties Regulations.* Retrieved from https://gazette.gc.ca/rp-pr/p1/2021/2021-03-06/html/reg2-eng.html

Canada School of Public Service (2022). *Strengthening Relationships with Indigenous Peoples Through the Consultation and Accommodation Process.* Retrieved from https://www.csps-efpc.gc.ca/events/indigenous-consultation-process/index-eng.aspx

Canada's Nature Legacy (2021) *Canada Target 1 Challenge*. Retrieved from https://www.canada.ca/en/environment-climate-change/services/nature-legacy/canada-target-one-challenge.html

Canadian Council on Learning (2009) *The State of Aboriginal Learning in Canada: A Holistic Approach to Measuring Success.* Retrieved from https://www.afn.ca/uploads/files/education2/state_of_aboriginal_learning_in_canada-final_report,_ccl,_2009.pdf

Canadian Endangered Species Conservation Council [CESCC] (2022) *Wild Species 2020: The General Status of Species in Canada.* Retrieved from https://wildlife-species.canada.ca/species-risk-registry/virtual_sara/files/reports/Wild%20Species%202020.pdf

Canadian Geographic (n.d.). *Truth and Reconciliation - Indigenous Peoples Atlas of Canada.* Retrieved from https://www.indigenouspeoplesatlasofcanada.ca/section/truth-and-reconciliation/

Canadian Wildlife Federation (2006). *Boreal Forest.* Retrieved from https://www.hww.ca/en/wild-spaces/boreal-forest.html

Climate Action Tracker. (2021). *Canada*. Retrieved from https://climateactiontracker.org/countries/canada/

Chakraborty, L., Thistlethwaite, J., Minano, A., Daniel,H. (2021) *Leveraging Hazard, Exposure, and Social Vulnerability Data to Assess Flood Risk to Indigenous Communities in Canada.* International Journal of Disaster Risk Science 12(10040). Retrieved from DOI:10.1007/s13753-021-00383-1

Commissioner of the Environment and Sustainable Development [CESD] (2022) *Biodiversity in Canada: Commitments and Trends*. Retrieved from https://www.oag-bvg.gc.ca/internet/English/oth_202210_e_44128.html

Conservation through Reconciliation Partnership [CRP] (2021) *Indigenous Laws in the Context of Conservation*. Retrieved from https://static1.squarespace.com/static/5d3f1e8262d8ed00013cdff1/t/60a6760cb82d4c085405eccd/1621521932893/Indigenous+Law+and+IPCA+Report+March+31+Final_May+6.pdf

Conservation through Reconciliation Partnership [CRP] (n.d.), *Conservation Governance.* Retrieved from https://conservation-reconciliation.ca/conservation-governance

COSEWIC (2021). *COSEWIC Assessment Process, Categories and Guidelines.* Retrieved from https://www.cosewic.ca/images/cosewic/pdf/Assessment_process_criteria_Nov_2021_en.pdf

Crown-Indigenous Relations and Northern Affairs Canada [CIRNAC] (2022a, July 13). *Reconciliation*. Government of Canada; Crown-Indigenous Relations and Northern Affairs Canada. Retrieved from https://www.rcaanc-cirnac.gc.ca/eng/1400782178444/1529183710887

Crown-Indigenous Relations and Northern Affairs Canada [CIRNAC] (2020a). *Self-Government.* Retrieved from https://www.rcaanc-cirnac.gc.ca/eng/1100100032275/1529354547314

Crown-Indigenous Relations and Northern Affairs Canada [CIRNAC] (2020b). *Treaties and Agreements.* Retrieved from https://www.rcaanc-cirnac.gc.ca/eng/1100100028574/1529354437231

Crown-Indigenous Relations and Northern Affairs Canada [CIRNAC] (2021) *Second Annual Statutory Report Pursuant to Section 10 of the Department of Crown-Indigenous*

Relations and Northern Affairs Act, Statutes of Canada, Chapter 29, 2019. Retrieved from https://www.rcaanc-cirnac.gc.ca/eng/1638827347500/1638827371759

Crown-Indigenous Relations and Northern Affairs Canada [CIRNAC] (2022). *Truth and Reconciliation Commission of Canada.* Retrieved from https://www.rcaanc-cirnac.gc.ca/eng/1450124405592/1529106060525

Dasiqox-Nexwagwez?an (2020) *Winter 2020/21 Newsletter: Dasiqox Tribal Park is now Dasiqox-Nexwagwez?an*. Retrieved from https://dasiqox.org/wp-content/uploads/2021/01/Winter-202021-Newsletter.pdf

David Suzuki Foundation (2018) *Tribal Parks and Indigenous Protected and Conserved Areas Lessons Learned from B.C. Examples.* Retrieved from https://davidsuzuki.wpenginepowered.com/wp-content/uploads/2018/08/tribal-parks-indigenous-protected-conserved-areas-lessons-b-c-examples.pdf

Department of Justice Canada [DOJ] (2021) *Principles respecting the Government of Canada's relationship with Indigenous peoples.* Retrieved from https://www.justice.gc.ca/eng/csj-sjc/principles-principes.html

DGW Law (2022) Case Brief: *Thomas and Saik'uz First Nation v. Rio Tinto Alcan Inc.,* 2022 BCSC 15. Retrieved from https://www.dgwlaw.ca/case-brief-thomas-and-saikuz-first-nation-v-rio-tinto-alcan-inc-2022-bcsc-15/

Ducks Unlimited (n.d.) *Understanding Waterfowl: A Matter of Productivity.* Retrieved from https://www.ducks.org/conservation/waterfowl-research-science/understanding-waterfowl-a-matter-of-productivity

Ecological Stratification Working Group (1995) *A National Ecological Framework for Canada.* Agriculture and Agri-Food Canada, Research Branch, Centre for Land and Biological Resources Research and Environment Canada, State of the Environment Directorate, Ecozone Analysis Branch, Ottawa/Hull. Report and national map at 1:7500 000 scale.

Edéhzhíe Team (2020a) *Edéhzhíe Annual Report – Progress to Date*. Retrieved from https://edehzhie.ca/wp-content/uploads/2020/09/Edehzhie-Annual-Report.pdf

Edéhzhíe Team (2020b) *A Plain Language Summary of the Edéhzhíe Establishment Agreement*. Retrieved from https://edehzhie.ca/wp-content/uploads/2022/02/EEA_PLS_September-3-20.pdf

Edwards, S. (2007) *Tories Defend 'No' in Native Rights Vote.* Retrieved from https://www.pressreader.com

Environment and Climate Change Canada [ECCC] (2021) *Government of Canada announces $340 million to support Indigenous-led conservation*. Retrieved from https://www.canada.ca/en/environment-climate-change/news/2021/08/government-of-canada-announces-340-million-to-support-indigenous-led-conservation.html

Environment and Climate Change Canada [ECCC] (2022) *Convention on Biological Diversity*. Retrieved from https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/biological-diversity-convention.html

Fasken (2021) *Doing Business in Canada Guide: Chapter 20 - Indigenous Law*. Retrieved from https://www.fasken.com/en/knowledge/doing-business-canada/2021/10/20-indigenous-law

Fraser-Kruck, H. (2009) *Canada's Failure to Support the United Nations Declaration on the Rights of Indigenous Peoples: an intersectional analysis of the repercussions as seen through the inter-woven lenses of women's rights, environmental rights, and poverty alleviation*. Retrieved from https://www.lrwc.org/wp-content/uploads/2012/03/Canada.Failure.to_.Support.UNDRIP.pdf

Freedman, B. (2018). *Environmental Science – a Canadian Perspective 6th Edition, Chapter 8 – Biomes and Ecozones.* Retrieved from https://digitaleditions.library.dal.ca/environmentalscience/chapter/chapter-8-biomes-and-ecozones/

Gammage, B. (2011). *The Biggest Estate on Earth: How the Aborigines Made Australia.* Retrieved from https://www.jstor.org/stable/26422901

Garibaldi, A. and N. Turner (2004) *Cultural keystone species: implications for ecological conservation and restoration.* Ecology and Society **9**(3): 1. Retrieved from http://www.ecologyandsociety.org/vol9/iss3/art1/

Government of British Columbia (2021) *Tla-o-qui-aht First Nations.* Retrieved from https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/consulting-with-first nations/first-nations-negotiations/first-nations-a-z-listing/tla-o-qui-aht-first-nations

Government of British Columbia (2022) *Historic action plan guides UNDRIP implementation in B.C.* Retrieved from https://news.gov.bc.ca/releases/2022IRR0018-000457

Government of Canada [GoC] (1982). *The Constitution Acts, 1867 to 1982 – Section 35: Rights of the Aboriginal Peoples of Canada*. Retrieved from https://laws-lois.justice.gc.ca/eng/const/FullText.html

Government of Canada [GoC] (2012). *Species at Risk Act and Parks Canada: Fact Sheet.* Retrieved from https://www.canada.ca/en/environment-climate-change/services/species-risk-education-centre/fact-sheets/parks-canada.html

Government of Canada [GoC] (2020) *A guide to your responsibilities under the Species at Risk Act.* Retrieved from https://www.canada.ca/en/environment-climate-change/services/species-risk-education-centre/your-responsibility/your-responsability-guide.html

Government of Canada [GoC] (2021a) *Backgrounder: United Nations Declaration on the Rights of Indigenous Peoples Act.* Retrieved from https://www.justice.gc.ca/eng/declaration/about-apropos.html

Government of Canada [GoC] (2021b) *Canada's 2021 Nationally Determined Contribution Under the Paris Agreement.* Retrieved from https://unfccc.int/sites/default/files/NDC/2022-06/Canada%27s%20Enhanced%20NDC%20Submission1_FINAL%20EN.pdf

Government of Canada [GoC] (2022a). *Implementing the United Nations Declaration on the Rights of Indigenous Peoples Act – Next Steps.* Retrieved from https://www.justice.gc.ca/eng/declaration/engagement/index.html

Government of Canada [GoC] (2022b). *Indigenous Peoples and Intellectual Property.* Retrieved from https://ised-isde.canada.ca/site/intellectual-property-strategy/en/indigenous-peoples-and-intellectual-property

Grammond. (2009). *Membership Criteria in the Indian Act, 1850–1985. In Identity Captured by Law* (p. 71–). MQUP. Retrieved from https://books-scholarsportal-info.proxy.lib.uwaterloo.ca/en/read?id=/ebooks/ebooks3/upress/2013-08-23/1/9780773576292

Gwich'in Comprehensive Land Claim Agreement (1992) Retrieved from https://www.rcaanc-cirnac.gc.ca/eng/1427294051464/1551108998878?wbdisable=true#tbc17

Haida Nation v. British Columbia (Minister of Forests) (2004) 3 S.C.R. 511, 2004 SCC 73

Hamoud Ismail, A., Abdul Rahman, A. and Ahmed Hezabr, A. (2018) *Determinants of corporate environmental disclosure quality of oil and gas industry in developing countries*, International Journal of Ethics and Systems, Vol. 34 No. 4, pp. 527-563.

Henderson, James Sa'ke'j Youngblood (2008) *Indigenous Diplomacy and the Rights of Peoples: Achieving UN Recognition.*

Henricksen, J. (2008) *Research on Best Practices for the Implementation of the Principles of ILO Convention No. 169.* Retrieved from https://www.ilo.org/wcmsp5/groups/public/@ed_norm/@normes/documents/publication/wcms_118120.pdf

Hermus, A. (2019) *Canada's Indigenous Tourism Sector: Insights and Economic Impacts. Ottawa: The Conference Board of Canada.* Retrieved from https://indigenoustourism.ca/wp-content/uploads/2019/05/10266_IndigenousTourismSector_RPT.pdf

Hilton, C. (2021) *Indigenomics: Our Eyes on the Land - Re-valuing Indigenous worldview in today's climate response*. Retrieved from https://climateinstitute.ca/publications/indigenomics/

Iaccarino, M. (2003) *Science and culture*. *EMBO Rep* 4: 220–223.

Indigenous Circle of Experts [ICE] (2018) *We Rise Together: Achieving Pathway to Canada Target 1 through the creation of Indigenous Protected and Conserved Areas in the spirit and practice of reconciliation.* Retrieved from https://static1.squarespace.com/static/57e007452e69cf9a7af0a033/t/5ab94aca6d2a7338ecb1d05e/1522092766605/PA234-ICE_Report_2018_Mar_22_web.pdf

Indigenous Corporate Training (2015). *First Nations' Relationship to the Land.* Retrieved from https://www.ictinc.ca/blog/first-nation-relationship-to-the-land

Indigenous Environmental Network [IEN] (2020). *What is: Indigenous Sovereignty and Tribal Sovereignty*. Retrieved from https://www.ienearth.org/what-is-indigenous-sovereignty-and-tribal-sovereignty/

Indigenous Leadership Initiative [ILI] (2015). *On-The -Ground Indigenous Stewardship Programs Across Canada – Inventory Project*. Retrieved from https://www.indigenousguardianstoolkit.ca/sites/default/files/Community%20Resource_Final%20Report%20with%20Profiles%20March%2027%202015_1.pdf

Indigenous Leadership Initiative [ILI] (n.d.a) *A National Indigenous Guardians Network BACKGROUNDER*. Retrieved from https://www.ilinationhood.ca/publications/backgrounder-a-national-indigenous-guardians-network

Indigenous Leadership Initiative [ILI] (n.d.b). *Indigenous-Led Conservation: Creating Jobs and Economic Opportunity*. Retrieved from https://www.ilinationhood.ca/publications/backgroundereconomics

Indigenous Leadership Initiative [ILI] (n.d.c). *Indigenous Protected and Conserved Areas.* Retrieved from https://www.ilinationhood.ca/indigenous-protected-and-conserved-areas

Indigenous Watchdog (2022). *How many of the TRC Calls to Action are complete? Don't ask the federal government.* Retrieved from https://www.indigenouswatchdog.org/2022/04/26/how-many-of-the-trc-calls-to-action-are-complete-dont-ask-the-federal-government/

Institute for Integrative Science and Health (n.d.). *Two-Eyed Seeing.* Retrieved from http://www.integrativescience.ca/Principles/TwoEyedSeeing/

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES] (2019). *Global Assessment Report on Biodiversity and Ecosystem Services*. Retrieved from https://ipbes.net/news/Media-Release-Global-Assessment#2-Indigenous

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES] (2019) *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.* E.

S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. 1148 pages. https://doi.org/10.5281/zenodo.3831673

International Institute for Environment and Development [IIED] (2020). *Protecting indigenous cultures is crucial for saving the world's biodiversity*. Retrieved from https://www.iied.org/protecting-indigenous-cultures-crucial-for-saving-worlds-biodiversity

International Institute for Sustainable Development [IISD] (2022). *Indigenous Peoples: Defending an Environment for All*. Retrieved from https://www.iisd.org/articles/deep-dive/indigenous-peoples-defending-environment-all#:~:text=Indigenous%20lands%20make%20up%20around,effective%20stewards%20of%20the%20environment.

International Labour Organization (1989) *C169 - Indigenous and Tribal Peoples Convention, 1989 (No. 169).* Retrieved from https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C169

International Labour Organization (2021). *Ratifications of C169 - Indigenous and Tribal Peoples Convention, 1989 (No. 169).* Retrieved from https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11300:0::NO:11300:P11300_INSTRUMENT_ID:312314:NO

Klein AM., Vaissiere B, Cane JH, Steffan-Dewenter I, Cunningham SA, Kremen C (2007) *Importance of crop pollinators in changing landscapes for world crops.* Proceedings of the Royal Society B: Biological Sciences 274: 303–313.

Khushal. (2022). *Talking Back to the Indian Act: Critical Readings in Settler Colonial Histories by Mary-Ellen Kelm and Keith Douglas Smith (review).* Canadian Ethnic Studies, 54(2), 123–125. Retrieved from https://doi.org/10.1353/ces.2022.0012

Knezevic, T. (2022) *Beyond Targets: Spotlight on Seal River Watershed Indigenous Protected and Conserved Area.* Retrieved from https://wwf.ca/stories/seal-river-watershed-ipca-sayisi-dene-first nation/

Latta, A. (2022a) *Reasserting Traditional Knowledge across a fragmented governance landscape: The Mackenzie River Basin.* Indigenous Water and Drought Management in a Changing World, Chapter Three, pp.41-61. Retrieved from DOI:10.1016/B978-0-12-824538-5.00003-0

Latta, A., Price, M., Spring, A., Temmer., J (2022b) *Agroecology in the North: Centering Indigenous food sovereignty and land stewardship in agriculture "frontiers".* Agriculture and Human Values 39(4). Retrieved from DOI:10.1007/s10460-022-10312-7

Land Claims Agreements Coalition [LCAC] (n.d.a). *What is a Modern Treaty?* Retrieved from https://landclaimscoalition.ca/modern-treaty/

Land Claims Agreements Coalition [LCAC] (n.d.b). *Implementation Issues.* Retrieved from https://landclaimscoalition.ca/implementation-issues/

Land Needs Guardians (n.d.a) *Indigenous Protected and Conserved Areas*. Retrieved from https://landneedsguardians.ca/protected-areas

Land Needs Guardians (n.d.b) *What Guardians Do.* Retrieved from https://landneedsguardians.ca/what-guardians-do

Legal Services Society British Columbia (2017). *A Guide to Aboriginal Harvesting Rights – Fishing, Hunting, Trapping Gathering.* Retrieved from https://pubsdb.lss.bc.ca/pdfs/pubs/A-Guide-to-Aboriginal-Harvesting-Rights-eng.pdf

Levac, L. McMurtry, D., Stienstra, G., Baikie, C., Hanson and Mucina, D. (2018). *Learning across Indigenous and Western knowledge systems and intersectionality: Reconciling social science research approaches*. Retrieved from www.criaw-icref.ca

Lightfoot, S. (2010). *A Sea Change on the U.N. Declaration—Or Is It?* Retrieved from http://www.indiancountrytoday.com/opinion/92499529.html

Malone, K. (2016) *Manitoba's Sayisi Dene: Forced relocation, racism, survival.* Retrieved from https://www.cbc.ca/news/canada/manitoba/manitoba-sayisi-dene-relocation-1.3722564

Maweu, Jacinta Mwende (2011). *Indigenous Ecological Knowledge and Modern Western Ecological Knowledge: Complementary, not Contradictory*. Thought and Practice: A Journal of the Philosophical Association of Kenya (PAK) New Series, Vol.3 No.2, pp.35-47.

McIntosh, E. (2022) *Ontario is resisting Canada's plans for Indigenous-led conservation areas.* Retrieved from https://thenarwhal.ca/ontario-resisting-indigenous-conservation-plans/

Meisner, L. (2021) *Canadian Mining Companies Are Devastating the Global South*. Retrieved from https://readpassage.com/canadian-mining-companies-are-devastating-the-global-south/

Millennium Ecosystem Assessment [MEA] (2005). *Ecosystems and Human Well-Being: A Framework for Assessment, Chapter Two: Ecosystems and Their Services*. Retrieved from https://www.millenniumassessment.org/documents/document.300.aspx.pdf

Morellato, M. (2008) *The Crown's Constitutional Duty to Consult and Accommodate Aboriginal and Treaty Rights. Research Paper for the National Centre for First Nations Governance*. Retrieved from https://fngovernance.org/wp-content/uploads/2020/06/Crown_Duty_to_Consult__Accommodate.pdf

Morgan. G. (2018) *Canada buys Kinder Morgan's Trans Mountain pipeline for $4.5 billion — but can we sell it?* Retrieved from https://financialpost.com/commodities/energy/ottawa-buys-trans-mountain-pipeline-for-4-5-billion-but-can-it-sell-it

Nakashima DJ, Roué M (2002) *Indigenous knowledge, peoples, and sustainable practice*. In Timmerman P (ed) Encyclopedia of Global Environmental Change. 5: Social and Economic Dimensions of Global Environmental Change, pp 314–324. Chichester, UK: Wiley.

Natural Resources Canada [NRC] (2021a) *Canada Target 1 Challenge.* Retrieved from https://www.canada.ca/en/environment-climate-change/services/nature-legacy/canada-target-one-challenge.html

Natural Resources Canada [NRC] (2021b). *Fire weather - Increases in length of fire season will affect forest ecosystems and both human health and safety*. Retrieved from https://www.nrcan.gc.ca/climate-change/impacts-adaptations/climate-change-impacts-forests/forest-change-indicators/fire-weather/17776

Natural Resources Canada [NRC] (2022a) *Canadian Protected and Conserved Areas Database*. Retrieved from https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/protected-conserved-areas-database.html

Natural Resources Canada [NRC] (2022b) *Edéhzhíe National Wildlife Area and Dehcho Protected Area*. Retrieved from https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/locations/edehzhie.html#toc1

Natural Resources Canada [NRC] (2022c). *Canada's Conserved Areas*. Retrieved from https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/conserved-areas.html

Natural Resources Canada [NRC] (2023a) *Canadian Mining Assets.* Retrieved from https://natural-resources.canada.ca/maps-tools-and-publications/publications/minerals-mining-publications/canadian-mining-assets/19323

Natural Resources Canada [NRC] (2023b) *Species at risk Public Registry*. Retrieved from https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html

Natural Resources Canada [NRC] (2023c). *Biodiversity, conservation, and Indigenous Peoples' well-being.* Retrieved from https://www.nrcan.gc.ca/home/biodiversity-conservation-and-indigenous-peoples-well-being/24801

Nature United (2020) *Thaidene Nëné: History in the Making*. Retrieved from https://www.natureunited.ca/about-us/where-we-work/northwest-territories/thaidene-nene/

Nature United (n.d.). *New Opportunities in Clayoquot Sound.* Retrieved from https://www.natureunited.ca/about-us/where-we-work/british-columbia/clayoquot-sound/

OECD Rural Policy Reviews (2020). *Linking Indigenous Communities with Regional Development in Canada – Chapter 3: The importance of land for Indigenous economic development.* Retrieved from https://www.oecd-ilibrary.org/sites/fc2b28b3-en/index.html?itemId=/content/component/fc2b28b3-en

Office of the Auditor General of Canada (2022). *Biodiversity in Canada – Commitments and Trends*. Retrieved from https://www.oag-bvg.gc.ca/internet/English/oth_202210_e_44128.html

Parks Canada (2016) *2020 Biodiversity Goals and Targets for Canada.* Retrieved from https://www.canada.ca/en/parks-canada/news/2016/12/2020-biodiversity-goals-targets-canada.html

Parks Canada (2021) *Park Establishment – Ivvavik National Park.* Retrieved from https://parks.canada.ca/pn-np/yt/ivvavik/gestion-management/plan

Parks Canada (2023) *Thaidene Nene National Park Reserve*. Retrieved from https://parks.canada.ca/pn-np/nt/thaidene-nene

Parks Canada Agency (2022a) *About National Parks.* Retrieved from https://www.pc.gc.ca/en/pn-np

Parks Canada Agency (2022b). *Jasper National Park – Indigenous connections.* Retrieved from https://www.pc.gc.ca/en/pn-np/ab/jasper/autochtones-indigenous

Pathway to Canada Target 1 (2019) *Accounting for Protected and Other Conserved Areas*. Retrieved from https://static1.squarespace.com/static/57e007452e69cf9a7af0a033/t/60806e9b70e77d3268e87bf1/1619029667230/Communication+Document+-+Visual_EN%281%29.pdf

Pathway to Canada Target 1 National Advisory Panel (2018) *Canada's Conservation Vision: A Report of the National Advisory Panel*. Retrieved from https://static1.squarespace.com/static/57e007452e69cf9a7af0a033/t/5b23dce1562fa7bac7ea095a/1529076973600/NAP_REPORT_EN_June+5_ACC.pdf

Peter Zimonjic (2022) *Trudeau announces $800M for Indigenous-led conservation initiatives.* Retrieved from https://www.cbc.ca/news/politics/indigenous-conservation-protetion-cree-inuit-firstnations-1.6677350

Popp, J., Priadka, P., Young, M., Koch, K., Morgan, J. (2020) *Indigenous Guardianship and moose monitoring: weaving Indigenous and Western ways of knowing.* Retrieved from https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1612&context=hwi

Pyne, S. (2010) *The Ecology of Fire.* Nature Education Knowledge 3(10):30 Retrieved from https://www.nature.com/scitable/knowledge/library/the-ecology-of-fire-13259892/

Ray, Grimm, and Olive. (2021). *The biodiversity crisis in Canada: failures and challenges of federal and sub-national strategic and legal frameworks*. *FACETS*. **6**(): 1044-1068. https://doi.org/10.1139/facets-2020-0075

Reed, G., Brunet, N. D., & Natcher, D. C. (2020). *Can indigenous community-based monitoring act as a tool for sustainable self-determination?* Retrieved from https://doi.org/10.1016/j.exis.2020.04.006

Report of the World Commission on Environment and Development: Our Common Future (1987) Item 74. Retrieved from https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

Ritchie, H. (2022) *Wild mammals make up only a few percent of the world's mammals.* Retrieved from https://ourworldindata.org/wild-mammals-birds-biomass

Rivershed Society of BC (2021) *Protect – Two-Eyed Seeing*. Retrieved from https://watershedcpr.canadiangeographic.ca/salmon/protect/exploring-conservation-issues/

Robbins, J (2018). *Native Knowledge: What Ecologists Are Learning from Indigenous People.* Retrieved from https://e360.yale.edu/features/native-knowledge-what-ecologists-are-learning-from-indigenous-people

Schuster, R., Germain, R., Bennett, J., Reo, N., Arcese, P. (2019). *Vertebrate biodiversity on indigenous-managed lands in Australia, Brazil, and Canada equals that in protected areas*. Environmental Science & Policy, Volume 101, Pages 1-6, ISSN 1462-9011. Retrieved from https://doi.org/10.1016/j.envsci.2019.07.002.

Selinske, Bekessy, S. A., Geary, W. L., Faulkner, R., Hames, F., Fletcher, C., Squires, Z. E., & Garrard, G. E. (2021). *Projecting biodiversity benefits of conservation behavior-change programs.* Conservation Biology. Retrieved from https://doi.org/10.1111/cobi.13845

Seto, K., Golden, J., Alberti, M., and Turner, B. (2017) *Sustainability in an urbanizing planet*. Proceedings of the National Academy of Sciences 114, no. 34 8935-8938.

Shelsen, N. (2019). *What is the Crown's Duty to Consult and Accommodate Indigenous peoples?* Retrieved from https://goldblattpartners.com/wp-content/uploads/Shelsen-Crowns-Duty-to-Consult.pdf

Sierra Club BC (2018) *"White Rhino" Map Shows Most Endngered Old-Growth Rainforest Now Covers Less than 7 Percent of Vancouver Island.* Retrieved from https://sierraclub.bc.ca/white-rhino-map-shows-endangered-old-growth-rainforest-now-covers-less-7-per-cent-vancouver-island/

Singh, I., Hopton, A. (2022) *How Indigenous-led conservation could help Canada meet its land and water protection targets.* Retrieved from

https://www.cbc.ca/news/science/canada-conservation-boreal-nature-biodiversity-1.6675175

Sioux Valley Dakota Nation Governance Agreement and Tripartite Governance Agreement (2013) Retrieved from https://www.rcaanc-cirnac.gc.ca/eng/1385741084467/1551118616967

Smithsonian (2007). *Canada-Ecotourism Initiatives.* Smithsonian Magazine. Retrieved from https://www.smithsonianmag.com/travel/canada-eco-tourism-initiatives-14830090/

Social Ventures Consulting. (2016). *Analysis of the Current and Future Value of Indigenous Guardian Work in Canada's Northwest Territories*. Dehcho First Nations, Lutsel K'e Dene First Nation, Indigenous Leadership Initiative, Tides Canada. Retrieved from https://www.indigenousguardianstoolkit.ca/sites/default/files/Community%20Resource_Indigenous%20Leadership%20Initiative%20and%20Tides%20Canada_Analysis%20of%20Current%20and%20Future%20Value%20of%20Indigenous%20Guardian%20Work%20in%20Canada%27s%20Northwest%20Territories_0.pdf

Species at Risk Act (S.C. 2002, c. 29)

Statistics Canada (2008) *Canada's ecozones and population change, 1981 to 2006.* Retrieved from https://www150.statcan.gc.ca/n1/pub/16-002-x/2008002/article/10625-eng.htm

Statistics Canada (2016) *International Perspective.* Retrieved from https://www150.statcan.gc.ca/n1/pub/11-402-x/2012000/chap/geo/geo01-eng.htm

Statistics Canada (2019) *Aboriginal Peoples Survey - Harvesting activities among First Nations people living off reserve, Métis, and Inuit: Time trends, barriers and associated factors.* Retrieved from https://www150.statcan.gc.ca/n1/pub/89-653-x/89-653-x2019001-eng.htm

Statistics Canada (2021) *Terrestrial ecozones and ecoprovinces of Canada*. Retrieved from https://www.statcan.gc.ca/en/subjects/standard/environment/elc/2017-map

Stephen, H. (2010). *Throne Speech Offers "Illusion of Support" for U.N. Declaration, First Nations Leader Says.* The Georgia Straight. Retrieved from https://www.straight.com/article-296383/vancouver/throne-speech-offers-illusion-support-un-declaration-first nations-leader-says

Stephens, S., Collins, B., Fettig, C., Finney, M., Hoffman, C., Knapp, E., North, M., Safford, H., Wayman, R. (2018) *Drought, tree mortality, and wildfire in forests adapted to frequent fire.* Bioscience 68.2 (2018): 77-88. Retrieved from https://nature.berkeley.edu/stephenslab/wp-content/uploads/2018/01/Stephens-et-al.-Fire-Tree-Mortality-BioSci-2018.pdf

Stockholm 50 (2022) *Indigenous Peoples and the Nature they Protect*. Retrieved from https://www.stockholm50.global/news-and-stories/indigenous-peoples-and-nature-they-protect

Stoney Nakoda Nations (2022) *Enhancing the Reintroduction of Plains Bison in Banff National Park Through Cultural Monitoring and Traditional Knowledge – Final Report and Recommendations*. Retrieved from https://a.storyblok.com/f/112697/x/d0b9253d5a/stoney_bison_report_final_rev2.pdf

Struzik, Ed (2022). *Canada's First Nations Protect Millions of Acres of Their Lands.* Retrieved from https://www.yesmagazine.org/environment/2022/12/27/first-nations-land-canada

Supreme Court of Canada (1990). *R. v. Sioui, 1 S.C.R. 1025.* Retrieved from https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/608/index.do

Swartz, C. (2019) *After 30 Years, only 23 Countries Have Ratified Indigenous and Tribal Peoples Convention ILO 169*. Retrieved from https://www.culturalsurvival.org/news/after-30-years-only-23-countries-have-ratified-indigenous-and-tribal-peoples-convention-ilo

Swiderska, K. (2021). *Here's why Indigenous economics is the key to saving nature. International Institute for Environment and Development*. Retrieved from https://www.iied.org/heres-why-indigenous-economics-key-saving-nature

The Canadian Encyclopedia (2017) *Treaties with Indigenous Peoples in Canada.* Retrieved from https://www.thecanadianencyclopedia.ca/en/article/aboriginal-treaties

The Canadian Encyclopedia (2020) *Peace, Order and Good Government.* Retrieved from https://www.thecanadianencyclopedia.ca/en/article/peace-order-and-good-government

The Pathway to Canada Target 1 Initiative (n.d.) *Pathway to Canada Target 1 – The Pathway*. Retrieved from https://www.conservation2020canada.ca/the-pathway#top

The Prime Minister of Canada (2022) *Protecting more nature in partnership with Indigenous Peoples*. Retrieved from https://pm.gc.ca/en/news/news-releases/2022/12/07/protecting-more-nature-partnership-indigenous-peoples

The United Nations Economic and Social Council (2021) *Permanent Frum on Indigenous Issues – Indigenous peoples and climate change*. Retrieved from https://documents-dds-ny.un.org/doc/UNDOC/GEN/N21/009/43/PDF/N2100943.pdf?OpenElement

The World Bank (2022) *Indigenous Peoples*. Retrieved from https://www.worldbank.org/en/topic/indigenouspeoples

The World Conservation Union (1986) *Tradition, Conservation and Development*. Occasional Newsletter of the Commission on Ecology's Working Group on Traditional Ecological Knowledge No. 4. Gland, Switzerland: The World Conservation Union

Theckedath, D. (2021) *Canada's Tourism Economy – Hill Studies.* Economics, Resources, and International Affairs Division. Publication No. 2021-33-E. Retrieved from https://lop.parl.ca/sites/PublicWebsite/default/en_CA/ResearchPublications/202133E#a3-3

Thomas and Saik'uz First Nation v Rio Tinto Alcan Inc (2022) BCSC 15 at para 212 [*Saik'uz First Nation*]. Retrieved from https://www.bccourts.ca/jdb-txt/sc/22/00/2022BCSC0015.htm

Thompson, K., Hill, C., Ojeda, J., Ban, N., Picard, C. (2020) *Indigenous food harvesting as social–ecological monitoring: A case study with the Gitga'at First Nation.* Retrieved from https://besjournals.onlinelibrary.wiley.com/doi/full/10.1002/pan3.10135

Tla-o-qui-aht First Nation (2014). *Tla-o-qui-aht Tribal Parks Declaration*. Retrieved from https://tribalparks.com/wp-content/uploads/2021/05/DeclarationTribalParkHaahuulthii2014.pdf

Tla-o-qui-aht First Nation (2018). *2018 Tribal Parks Report*. Retrieved from https://tribalparks.com/wp-content/uploads/2019/09/2018TRIBALPARKSREPORT.pdf

Tla-o-qui-aht First Nation (2019) *Tla-o-qui-aht Tribal Parks Report 2019*. Retrieved from https://tribalparks.com/wp-content/uploads/2021/05/2019TRIBALPARKSREPORT.pdf

Tla-o-qui-aht First Nation (2021) *Tla-o-qui-aht Tribal Parks Report 2021*. Retrieved from https://tribalparks.com/wp-content/uploads/2022/05/2021TRIBALPARKSREPORT-1.pdf

Tla-o-qui-aht First Nation (n.d.) *Tribal Parks Guardians*. Retrieved from https://tribalparks.com/tribal-parks-guardians/

Tla-o-qui-aht Tribal Parks (2023) *Tla-o-qui-aht Tribal Parks: About.* Retrieved from https://m.facebook.com/tlaoquiaht/

Tran, T., Neasloss, D., Bhattacharyya, J., & Ban, N. (2020). "*Borders don't protect areas, people do": Insights from the development of an Indigenous Protected and Conserved Area in Kitasoo/Xai'xais Nation Territory.* FACETS, 5, 922–941. https://doi.org/10.1139/facets-2020-0041

Truth and Reconciliation Commission of Canada [TRCC] (2015a) *Truth and Reconciliation Commission of Canada: Calls to Action.* Retrieved from https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/indigenous-people/aboriginal-peoples-documents/calls_to_action_english2.pdf

Truth and Reconciliation Commission of Canada [TRCC] (2015b) *What We Have Learned: Principles of Truth and Reconciliation*. Retrieved from https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Principles_English_Web.pdf

Tsawwassen First Nation Final Agreement: *Chapter 15 – Environmental Management* (2007) Retrieved from https://tsawwassenfirstnation.com/wp-content/uploads/2019/07/1_Tsawwassen_First_Nation_Final_Agreement.pdf

UN Environment Programme [UNEP] (2022) *UN Biodiversity Conference (COP 15).* Retrieved from https://www.unep.org/un-biodiversity-conference-cop-15

UN Framework Convention on Climate Change [UNFCCC] (n.d.) *The Paris Agreement.* Retrieved from https://unfccc.int/process-and-meetings/the-paris-agreement

UNESCO (2018) *Clayoquot Sound Biosphere Reserve, Canada.* Retrieved from https://en.unesco.org/biosphere/eu-na/clayoquot-sound

United Nations (1992) *Convention on Biological Diversity.* Retrieved from https://www.cbd.int/doc/legal/cbd-en.pdf

United Nations (2007) *United Nations Declaration on the Rights of Indigenous Peoples.* Retrieved from https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

United Nations Chronicle (n.d.) *Discrimination of Aboriginals on Native Lands in Canada*. Retrieved from https://www.un.org/en/chronicle/article/discrimination-aboriginals-native-lands-canada

United Nations Department of Economic and Social Affairs [UNDESA] (n.d.a) *Indigenous Peoples and the 2030 Agenda.* Retrieved from https://www.un.org/development/desa/indigenouspeoples/focus-areas/post-2015-agenda/the-sustainable-development-goals-sdgs-and-indigenous.html

United Nations Department of Economic and Social Affairs [UNDESA] (2021) *Adoption of the United Nations Declaration on the Rights of Indigenous Peoples: 14 years later.* Retrieved from https://www.un.org/development/desa/indigenouspeoples/news/2021/09/adoption-of-the-united-nations-declaration-on-the-rights-of-indigenous-peoples-14-years-later/

United Nations Department of Economic and Social Affairs [UNDESA] (n.d.b) *The 17 Goals.* Retrieved from https://sdgs.un.org/goals

United Nations Economic and Social Council [UNESC] (2021) *Permanent Forum on Indigenous Issues Twentieth session*. New York, 19–30 April 2021. Retrieved from https://documents-dds-ny.un.org/doc/UNDOC/GEN/N21/009/43/PDF/N2100943.pdf?OpenElement

United Nations Environment Program [UNEP] (2017). *Indigenous People and Nature: A Tradition of Conservation.* Retrieved from https://www.unep.org/news-and-stories/story/indigenous-people-and-nature-tradition-conservation

United Nations Environment Program [UNEP] (n.d.). *Green Economy.* Retrieved from https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy

United States Environmental Protection Agency (USEPA) (2022). *Ecoregions.* Retrieved from https://www.epa.gov/eco-research/ecoregions

University of British Columbia [UBC] (n.d.a) *Indigenous Foundations – Constitution Act, 1982 Section 35*. Retrieved from https://indigenousfoundations.arts.ubc.ca/constitution_act_1982_section_35/

University of British Columbia [UBC] (n.d.b) *Indigenous Foundations – The Indian Act.* Retrieved from https://indigenousfoundations.arts.ubc.ca/the_indian_act/

University of British Columbia [UBC] (n.d.c) *Indigenous Foundations – Royal Proclamation, 1763*. Retrieved from https://indigenousfoundations.arts.ubc.ca/royal_proclamation_1763/

University of British Columbia [UBC] (n.d.d) *Indigenous Foundations – UN Declaration on the Rights of Indigenous Peoples.* Retrieved from https://indigenousfoundations.arts.ubc.ca/un_declaration_on_the_rights_of_indigenous_peoples/

Vaughan, A. (2011) *What does Canada's withdrawal from Kyoto protocol mean?* Retrieved from https://www.theguardian.com/environment/2011/dec/13/canada-withdrawal-kyoto-protocol

Wang, Sheila (2021) *Ontario promised to get to the bottom of alleged mercury dumps upstream from Grassy Narrows. Instead, the province allowed a surge in mining claims on the Indigenous territory*. Retrieved from https://www.thestar.com/news/investigations/2021/04/12/ontario-promised-to-get-to-the-bottom-of-alleged-mercury-dumps-upstream-from-grassy-narrows-instead-the-province-allowed-a-surge-in-mining-claims-on-the-indigenous-territory.html

Weber, B. (2022) *Indigenous conservation Canada's way of the future, environment minister says*. Retrieved from https://bc.ctvnews.ca/indigenous-conservation-canada-s-way-of-the-future-environment-minister-says-1.5963076

White, E. (2017). *5 things you might not know about Indigenous hunting and fishing rights.* Retrieved from https://www.cbc.ca/news/canada/sudbury/hunters-and-gatherers-indigenous-hunting-fishing-rights-explained-1.4347488

Wildlife Management Advisory Council North Slope (n.d.) *The Inuvialuit Final Agreement.* Retrieved from https://wmacns.ca/about-us/co-management/#:~:text=Signed%20in%201984%2C%20the%20Inuvialuit%20Final%20Agreement%20%28IFA%29,protected%20rights%2C%20roles%2C%20and%20responsibilities%20under%20the%20Agreement

Wilson-Raybould, & Sinclair, M. (2019). *From where I stand : rebuilding Indigenous Nations for a stronger Canada*. Purich Books, an imprint of UBC Press.

Wood, S. (2021) *How Clayoquot Sound's War in the Woods transformed a region.* Retrieved from https://thenarwhal.ca/clayoquot-sound-tofino-after-war-woods/?fbclid=IwAR0mIu5PHRvJxMvah8h_YVhGKNjEOSL5k6ZbliTKgB2GywZtcuANNcfQ9ZE

Woodley, S., Locke, H., Laffoley, D., MacKinnon, K., Sandwith, T., and Smart, J. (2019) *A Review of Evidence for Area-based Conservation Targets for the Post-2020 Global Biodiversity Framework.* Retrieved from https://naturebeyond2020.com/wp-content/uploads/2019/10/Woodley-et-al-Targets-PARKS-25.2-proof-3.pdf

World Bank (2021). *Indigenous Peoples*. Retrieved from https://www.worldbank.org/en/topic/indigenouspeoples#1

WWF Canada (2020) *Living Planet Report Canada – 2020: Wildlife at Risk.* Retrieved from https://wwf.ca/wp-content/uploads/2020/09/WWF-7-x-9-LPRC_Web.pdf

Yellowhead Institute (n.d.) *Three Frameworks of Consent.* Retrieved from https://redpaper.yellowheadinstitute.org/wp-content/uploads/2019/11/consent-factsheet-final.pdf

Zurba, M., Beazley, K., English, E., and Buchmann-Duck, J. (2019) *Indigenous Protected and Conserved Areas (IPCAs), Aichi Target 11 and Canada's Pathway to Target 1: Focusing Conservation on Reconciliation" Land* 8, no. 1: 10. Retrieved from https://doi.org/10.3390/land8010010