

FILLING THE INTEGRITY GAPS IN PROTECTION OF SPECIES AT RISK THROUGH
LITIGATION AND STEWARDSHIP: POLICY EVALUATION WITH A FOCUS ON
ONTARIO

By

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Abstract

There are many integrity gaps in the federal and provincial systems designed to protect endangered and threatened species in Canada. NGOs (Non-governmental organizations) and other stakeholders can get involved in the process of protecting species at risk, by participating in collaborative efforts through volunteerism and stewardship efforts. NGOs can also bring issues of species-at-risk protection to court through litigation. This thesis began by exploring the integrity gaps in the federal and provincial processes for species at risk protection. The thesis then examined different initiatives undertaken by NGOs to combat this issue, the first being litigation and how it can be used as a strategy to help protect species at risk, and hold government accountable. The thesis also explored the rationale behind NGO actions, as well as the possible outcomes from these court cases. Next, the thesis discussed volunteer efforts undertaken by NGOs and other stakeholders. The research was supplemented with valuable qualitative interview data from scientists, members of NGOs, members of government, and a lawyer. The thesis concluded with recommendations for further action and policy measures that can be taken to protect species at risk.

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List of Relevant Laws

Canada

- *Species at Risk Act (SARA)* S.C. 2002, c. 29
- *Canada Wildlife Act* (R.S.C., 1985, c. W-9)
- *New Brunswick's Endangered Species Act*, SNB 1996, c E-9.101
- *Parks Canada Agency Act* (S.C. 1998, c. 31)
- *Migratory Birds Convention Act (MBCA)*
- *Canada National Parks Act* (S.C. 2000, c. 32)
- *Canadian Environmental Protection Act, 1999* (S.C. 1999, c. 33)
- *Fisheries Act* (R.S.C., 1985, c. F-14)

Ontario

- *Ontario's Endangered Species Act, 2007*, S.O. 2007, c. 6
- *Fish and Wildlife Conservation Act, 1997*, S.O. 1997, c. 41
- *Heritage Hunting and Fishing Act, 2002*, S.O. 2002, c. 10
- *Planning Act*, R.S.O. 1990, c. P.13
- *Invasive Species Act, 2015*, S.O. 2015, c. 22 - Bill 37
- *Environmental Protection Act*, R.S.O. 1990, c. E.19
- *Electricity Act, 1998*, S.O. 1998, c. 15, Sched. A
- *Ontario Society for the Prevention of Cruelty to Animals Act*, R.S.O. 1990, c. O.36

United States

- *Endangered Species Act (ESA)* of 1973
- *Migratory Bird Treaty Act of 1918* (MBTA)
- *Migratory Birds Convention Act, 1994* (S.C. 1994, c. 22)
- *National Environmental Policy Act of 1969 (NEPA)* 42 U.S.C. §7401 et seq. (1970)
- *Clean Water Act* 33 U.S.C. §1251 et seq. (1972)
- *1966 Endangered Species Preservation Act*
- *1969 Endangered Species Conservation Act*

List of Abbreviations

APPEC - Alliance to Protect Prince Edward Court
ATK - Aboriginal Traditional Knowledge
BBS - North American Breeding Bird Survey
BEF - Biodiversity and Ecosystem Function
BSC - Bird Studies Canada
BSFW - Bureau of Sport Fisheries and Wildlife
CAMP - Central Atlantic Magmatic Province
CBD - Convention on Biological Diversity
CEQ - Council of Environmental Quality
COSEWIC - Committee on the Status of Endangered Wildlife in Canada
COSSARO - Committee on the Status of Species at Risk in Ontario
CPAWS - Canadian Parks and Wilderness Society
CSSP - Cross-sector social partnerships
CWS - Canadian Wildlife Service
DFO - Department of Fisheries and Oceans
EA - Environmental Assessment
ECCC - Environment and Climate Change Canada
ECO - Environmental Commissioner's Office
EEMP - Environmental Effects Monitoring Plan
NGOs - Environmental non-governmental organizations
EPA - Ontario Environmental Protection Act
ERT - Environmental Review Tribunal
ESA - Endangered Species Act
ESL - Endangered species legislation
FA - Fisheries Act
FLAP - Fatal Light Awareness Program
FN - First Nations
FOPO - Standing Committee on Fisheries and Oceans
FWCA - Ontario Fish and Wildlife Conservation Act
HADD - harmful alteration, disruption, or destruction
IBA - Important Bird Area
IPBES - Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IUCN - International Union for Conservation of Nature
LEWS - Lake Erie Water Snake
LPBO - The Long Point Bird Observatory
MBCA - Migratory Birds Convention Act
MNR - Ministry of Natural Resources
MOE - Ministry of Environment
MOECC - Ontario Ministry of the Environment and Climate Change
NABCI - North American Bird Conservation Initiative
NAWMP - North American Waterfowl Management Plan
NFSARC - National Framework for Species at Risk Conservation
NMFS - National Marine Fisheries Service
OBBA - Ontario Bird-banding Association
ODNR - Ohio Department of Natural Resources
OESA – Ontario Endangered Species Act
OMNR - Ontario Ministry of Natural Resources
OPA - Ontario Power Authority
OSPCA - Ontario Society for the Prevention of Cruelty to Animals Act

PECFN - Prince Edward County Field Naturalists
PIF - Partners in Flight
PPA - Power Purchase Agreement
RA - responsible authority
REA - Renewable Energy Approval
ReNEW - Recovery of Nationally Endangered Wildlife
RIAS - Regulatory Impact Assessment Statement
SARA - Species at Risk Act
SCO - Society of Canadian Ornithologists
SCOPE - The Scientific Committee on Problems of the Environment
SSC - Species Specialist Subcommittees
TGS - Toronto Green Standard
TIC - Turtle Island Conservation programme
TRCA - Toronto and Regional Conservation Authority
UNCED - United Nations Conference on Environment and Development
USFWS - US Fish and Wildlife Service
UTI - Urban Turtle Initiative
WWF - World Wildlife Fund

Chapter One: Introduction

1.1 Background Context: The Biodiversity Crisis

Humans need biodiversity to survive; it provides life's basic necessities, from air to water, to food and habitable lands. It is required for agriculture, and fuel. Biodiversity can be defined simply as the abundance of different species of plants and animals.¹ It is the “web of living organisms that ... [provides for] our most fundamental needs — air, clean water, food and soil to grow it, [and] clean energy from the Sun,” (Suzuki, 2011: 241). Biodiversity is crucial for the flourishing of human beings and nonhuman organisms.² The importance of biodiversity is why legislation is required to protect species that are at risk, as they can be crucial sources for humans and other animals to meet their biological needs (Suzuki, 2011: 241). Science educator David Suzuki³ (2011: 241) believes that humans fail to recognize and respond to the urgency required for species extinction, because humans place “our institutions and our priorities above the need to protect biodiversity,” and he asserts that “the protection of biodiversity should be our highest priority,” (Suzuki, 2011: 241).

In the year 1900, there were 1.5 billion people on the planet, and only 16 cities with human populations over 1 million (Suzuki, 2011: 243).⁴ By the year 2000, global population had reached 6 billion and the number of cities increased by 20 times, as most people in industrialized nations relocated to urban areas (Suzuki, 2011: 243). Presently, it is becoming increasingly

¹ The term biodiversity is a contracted form of biological diversity; a similar, although potentially broader term is natural heritage.

² It has been determined that habitat destruction and biodiversity loss “can increase the number and distribution of infectious diseases in humans,” (Pongsiri et al, 2009: 945). Human health and disease have changed throughout human history, due to social and ecological changes. Some scientists believe that there is a new current epidemiologic transition, where emerging infectious diseases and reemerging infections that were under control are being reintroduced due to globalization and ecological disruption (Pongsiri et al, 2009: 945)

³ David Suzuki is the founder of NGO David Suzuki Foundation, which has played an important role in litigation for protection of species at risk in Canada.

⁴ Most people lived in rural areas, and worked in the agriculture industry. As humans were a farming species, and dependant on weather, insects, and certain plant species for successful crops, those farmers recognized their dependency on nature (Suzuki, 2011: 243).

apparent that anthropogenic factors are contributing to species loss worldwide. As extinction is permanent, conservation efforts focus on reducing or halting species loss. The main cause of species' extinction is habitat loss, and protecting critical habitat is key in species' recovery and population growth. Many countries have created legislation to identify and protect species at risk and their habitats, and to create and implement recovery plans for their growth.

Earth has faced five major known extinctions in the planet's history [See Appendix 1: Table 12] (Carrasco, 2009: 1). Of the four billion species that supposedly evolved on the planet in the last 3.5 billion years, around 99% are now gone (Barnosky et al, 2011: 51). A mass extinction is defined as a time in Earth's history where more than three-quarters of species on Earth have been lost in a geologically short time frame; this has happened five times in the last 540 million years (Barnosky et al, 2011). An extinction period is defined by two factors: rate and magnitude. Rate is defined as "the number of extinctions divided by the time over which the extinctions occurred," (Barnosky et al, 2011: 52). This is essentially the amount of species that have been lost per unit time. Magnitude can be defined as the percentage of species that went extinct. A mass extinction happens when extinction rates (the rate at which the number of species are lost) increase more than origination rates (the rate at which the number of species increase) in a geologically short time frame, usually less than 2 million years (Barnosky et al, 2011).

Only five events in history qualify as "mass extinction" periods: those were near the end of the Ordovician, Devonian, Permian, Triassic, and Cretaceous periods⁵. These events are known as the "Big Five" mass extinctions. The extinctions were caused by different factors, and ended with various results, but they all have extinction rates that are higher than any other geological intervals in the last 540 million years, and all have a loss of over 75% of species at the time. Scientists are currently observing that human activities may be causing the sixth mass extinction through actions such as co-opting of resources, habitat fragmentation, introduction of non-native species, spreading of pathogens, killing of species, and global climate change (Barnosky et al, 2011). If this is the cause, then recovery of biodiversity will not take place

⁵ See Table 12 in Appendix 1

anytime soon, as evolution of species takes hundreds of thousands of years at the least, and recovery from a mass extinction can take millions of years.

Scientists debate whether we are currently in the sixth extinction phase or not. One of the reasons for the ongoing debates is due to the data that is used. A combination of fossil records and modern data is used when assessing a potential mass extinction phase. The current fossil record is incomplete in certain areas of the planet. Fossils are also analyzed at the genus level rather than at the species level, which is done for modern taxa; this can make it difficult to compare. Fossil extinction is when a taxon has disappeared from the fossil record; most taxa do not have a fossil record so the number of extinctions is most likely underestimated. Modern extinction is when there are no individuals of a species remaining, and as of the past few decades, assessments have been based on IUCN criteria that is “conservative and likely to underestimate functionally extinct species,” (Barnosky et al, 2011: 52). Another reason for underestimation may be because many species have not been evaluated or accounted for.

To determine whether the current time period is a mass extinction similar to the Big Five; it is important to know what the current extinction rates are compared to the normal rates, and how close Earth is to the 75% biodiversity loss (Barnosky et al, 2011). The recent loss of species is serious, but does not yet fall into the category of the Big Five extinction periods (Barnosky et al, 2011: 56). It is believed that earth may reach the extreme diversity loss that characterized the Big Five extinction periods within a few centuries, if current species threats are not resolved (Barnosky et al, 2011). It also remains a fact that losing more critically endangered species will send the planet into a state of mass extinction, and losing more endangered and vulnerable species could lead Earth down that path in a few centuries. Another cause for concern is that this period is seeing unusual climate changes and high levels of atmospheric CO², as was the case in previous extinction phases (Barnosky et al, 2011: 56). Researchers are increasingly focusing on identifying species that are affected by climate change and how to manage them (Gregory et al, 2013; Wheatley et al, 2017).

It is currently unknown how close Earth is to another extinction phase. Since humans first arrived in North America, mammalian species diversity dropped 15%-42% lower compared to the previous normal diversity baseline that existed for millions of years (Carrasco et al, 2009). Currently, there is not enough data to make the same estimates for other continents; however, qualitative declines in mammal diversity in the current Holocene Epoch have already been recognized in South America, Eurasia, and Australia. Carrasco et al (2009) confirm quantitatively what had been a qualitative observation for years: that the decline in mammal diversity can be attributed to human presence (Carrasco, 2009: 5). Over the years, many studies have linked human population density to the number of threatened species, demonstrating a strong correlation between the two, and perhaps causation (McKee et al, 2013). It was found that the sum of threatened species particularly in continental nations was explained by two variables: human population density and species richness (number of species per unit area) (McKee et al, 2013). Other factors, such as Gross Domestic Product and amount of agricultural land used have also affected the number of species at risk. McKee et al (2013) found that human population density is a key cause of mammal and bird species becoming threatened. There are other factors that affect threatened species; however, human population density is the most severe threat.

In the past few decades, there has been increasing awareness about the effects of biodiversity loss, and the importance of preserving nature. The environmental awareness of the 1960-1970s led to the adoption of two primary legal tools to fight biodiversity loss; one was endangered species legislation (ESL), and the other was the concept of protected areas (Hintz and Garvey, 2012: 2018). ESL can be used to help reduce threats to species that are at risk, and can be successful if employed properly. However, federal governments often have jurisdictional overlap and conflicting stakeholder interests, which is why provisions are built into legislations to “provide latitude for species management applications and operations,” (Hintz and Garvey, 2012: 2018). Often ESL is combined with the creation of protected or partial protected areas, offering species dual protection (Hintz and Garvey, 2012: 2018).

There were a few defining international environmental agreements and environmental movements that took place over the previous decades. The U.S. became the first country to

establish national endangered species legislation, the *Endangered Species Preservation Act*, in 1966. This later became the *Endangered Species Act of 1969*, and was replaced with the *Endangered Species Act* (ESA) in 1973 (Hutchings and Festa-Bianchet, 2009: 53). In the 1980s, there was increasing concern about the rate of species loss. Research at the time showed that losing certain species could alter the way ecosystems functioned.⁶ The US Strategy Conference on Biological Diversity in 1981 was the first major event held for biological diversity. Many different state organizations were involved in the conference, however the event mainly focused on threats to genetic diversity and the effects on agriculture and business (Dempsey, 2015: 2561).

By the 1990's, there were international research initiatives examining the effects of the diversity of life forms on their ecosystems (Cardinale et al, 2012: 66).⁷ The Convention on Biological Diversity, an intergovernmental agreement between 193 countries, was created to support the conservation of biological diversity, sustainable resource use, and the "fair and equitable sharing of its benefits," (Cardinale et al, 2012: 66). The 1992 Earth Summit that took place in Rio de Janeiro prompted interest in understanding the effects of biodiversity loss on ecosystem function, and the supply of goods and services (Cardinale et al, 2012: 59). This took place in the form of research projects and hundreds of experiments worldwide, testing new ecological theories (Cardinale et al, 2012: 59).

⁶ Ecologists have focused on the role of keystone species, whose importance for the environment is dramatic and highly significant. The loss of a keystone species may "cause the cascading extinctions of many other species," (Zhao et al, 2016: 1032). Keystone species play a strong role "in the prevalence and population levels of other species within their ecosystem or community," and maintain the "structure and integrity" of their communities (Wagner, 2010). These species influence the lower trophic levels and ensure that the lower trophic level species do not monopolize resources. Keystone species are important to sustaining the ecosystems in which they reside, and preserving these species is crucial to maintain those ecosystems.

⁷ Other significant development: the Scientific Committee on Problems of the Environment (SCOPE) produced a book that reviewed known information on biodiversity and the way ecosystems functioned (BEF). The United Nations Environment Program developed the Global Biodiversity Assessment, which evaluated the available knowledge on biodiversity and its role in ecosystem processes. BEF studies had by the mid-1990s, determined that ecosystem functions are affected by changes in biological diversity (Cardinale et al, 2012: 59).

The concern of biodiversity loss and its impacts on natural ecosystems and human life is what led to the decision at the April 2001 VI Conference of the Parties of the Convention on Biological Diversity (CBD) that the participating countries will "achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level," (Soberón and Peterson, 2009: 29). This 2010 target was an important decision on the international level. To make sure targets were being met, some members of the CBD proposed having indicators to measure change in biodiversity and biodiversity loss (Soberón and Peterson, 2009: 29). The objectives of the CBD are the protection of biodiversity, sustainable resource use, and fair allocation of the benefits and profits loss (Soberón and Peterson, 2009: 33). Despite these worldwide commitments, data shows that biodiversity loss is continuing globally at increasing rates, which has led to the creation of new biodiversity targets for 2020 (the Aichi targets)⁸ and perhaps a new assessment body, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (Cardinale et al, 2012: 66).

The International Union for Conservation of Nature (IUCN) Red List of threatened species is the most extensive database of status, trends, and threats facing Earth's biodiversity. Experts assess each species on the list, and there is an accompanying description of the threats faced by each species. The Red List also contains information about conservation actions for each species, and other further actions that can be taken to improve their status (Hayward, 2011: 2564). In 2009's IUCN Red List assessment, 181 mammal species showed significant change in their status since the previous assessment. It was found that declining species faced different threats, such as "transportation corridors, human intrusions, invasive species, pollution and climate change" compared to species that were improving, that faced threats from agricultural development and biological resource use (Hayward, 2011: 2567). This may imply that some threats can be dealt with and mitigated more easily than others (Hayward, 2011: 2568). Thus, effective legislation can deal with threats such as hunting and agriculture, but other threats such as invasive species, human intrusions and climate change are more difficult to combat, and more expensive to do so (Hayward, 2011: 2568). Reintroduction of species, along with captive

⁸ More information can be found in the Convention on Biological Diversity's Strategic Plan for Biodiversity 2011-2020.

breeding and hunting restriction, was key in improving the status of mammal species (Hayward, 2011: 2570). Reintroduction alone was not as successful; the reason for the initial decline must be dealt with before reintroducing a species (Hayward, 2011: 2570). Social conservation actions, including policy and regulations, education and outreach programs, and conservation incentives all played important roles in the conservation of biodiversity (Hayward, 2011: 2571).

1.2 Research Problem and Research Questions

Research Problem

The focus of this thesis is on species at risk in Canada, and more specifically, within the province of Ontario. Canada is a large country; around 40% of the country is composed of forests and woodlands, as well as one quarter of the earth's wetlands 8,500 rivers, and over two million lakes. Around 80,000 plant and animal species reside in Canada, resulting in a rich and diverse country (World Wildlife Fund, 2017). The country is also home to many endangered and threatened species. These species are threatened mainly from urbanization and development, resource extraction and land use, habitat loss, invasive species, unsustainable harvesting, and anthropogenic climate change (World Wildlife Fund, 2017). Canada's Living Planet Index (LPI)⁹ which measures its "ecological performance" in regards to species at risk, demonstrates an average downward trend of eight percent for vertebrate populations from 1970 to 2014¹⁰ (World Wildlife Fund, 2017). In that timeframe, the populations of half of the monitoring species (451 of 903) declined.

Species at risk in Canada can be protected under federal and provincial or territorial laws. The federal government passed the national Species at Risk Act (SARA) in 2002 to protect species at risk and their habitats. Many provinces have also developed their own species at risk legislation. Ontario developed its own species at risk legislation in 1971 and passed a new law in

⁹ The LPI values range from a maximum of -2% to a minimum of -14%.

¹⁰ Canada's LPI includes population trends from 1970 to 2014 for 903 vertebrate species, and includes "106 species of mammals, 386 bird species, 365 fish species, and 46 amphibians and reptiles," (World Wildlife Fund, 2017).

2007. Through the introduction of regulations passed more recently that weaken the new Ontario Endangered Species Act (OESA), it too has lost a lot of its credibility with conservationists and environmentalists. As a result, NGOs (non-governmental organizations) have taken to litigation (in addition to other strategies) to provide species with adequate legal protection under the laws that protect them. Currently there are over 520 species protected under the federal SARA (Mooers et al, 2017). There are 237 species protected under Ontario's Endangered Species Act (OESA).

There are many integrity and implementation gaps in the Canadian federal and provincial recovery processes for at-risk species. This research project focused on alternative tools and strategies to fill in these gaps. NGOs and other stakeholders have resorted to other measures to help protect species at risk, such as litigation, stewardship activities, and volunteer efforts and programs. While NGOs often use various programs and fundraising to protect species at risk, they are increasingly using litigation as a means towards fulfilling relevant legislation and to hold government and businesses responsible for their duties towards species at risk. To explore this matter further, a policy analysis was conducted on federal and provincial species at risk legislation, and the factors surrounding chosen court cases were examined. The resulting actions from the cases outside the courtroom, and material from qualitative interviews were analyzed and interpreted. One of the aims of the thesis was to examine and evaluate the relationship between litigation and other voluntary and stewardship efforts, namely stakeholder partnerships through collaborative projects. These projects involve government working with other stakeholders such as NGOs, businesses, municipalities, research institutions, zoos, and other organizations, to work towards collective goals. As many environmental projects are beyond the scope of one organization, and often beyond their jurisdiction, this type of collaboration is often seen as a realistic and feasible solution (Clarke, 2007).

Research Questions

Extensive research has been conducted on the current situation of species at risk worldwide, and existing tools in place are currently insufficient to fully protect species and their habitats. This has led to the need to explore other strategies, including the use of litigation to

prompt and complement other initiatives, such as volunteer efforts, stewardship programs, and public outreach and education.

The following research questions were meant to guide the topics covered in the thesis project:

I. What is the situation of species at risk in Canada, and in particular, Ontario?

The thesis attempted to explain the current situation of species at risk within Canada, and specifically, within Ontario. It examined the policy measures that are currently in place to protect those species. It also discussed some initiatives such as volunteer efforts and stewardship activities that are being organized by NGOs and other organizations.

II. What is the legal framework in place to protect species at risk?

The thesis discussed the policies, laws, regulations and measures that are already in place to protect species at risk, and why they have not been sufficient. Gaps in the process for species protection and recovery have forced NGOs to resort to other options and strategies to provide species the protection they are legally entitled to.

III. Why do NGOs turn to litigation as a tool to protect species at risk?

A major focus of this thesis was on the factors that could lead to litigation on behalf of species at risk. The thesis examined some reasons why NGOs chose to go to court, and what some of their desired goals and results were. Interview data was used to try to address the rationale and the motivation behind these actions.

IV. Is litigation an effective method of helping to save species-at-risk? Under what circumstances, and in which ways, can litigation stimulate innovations in volunteer efforts and stewardship programs?

This question is difficult to answer, as litigation can result in different outcomes and achievements. The thesis discussed examples of court cases that were “lost” and yet resulted in positive outcomes outside of court. It looked at the ways in which litigation can draw public attention, lead to working relationships between stakeholders, and pressure government into fulfilling its legal obligations. Each court case was based on different circumstances, and yielded different results, and the thesis attempted to identify opportunities for when and how litigation can help in the protection of species at risk in various ways.

The litigation process may help to facilitate collaboration between various stakeholders, and it can be a means for partners to work on initiatives that they may not have otherwise. Conversely, litigation can sever delicate working relationships that are already in place, especially ones involving government, businesses, and NGOs. The thesis attempted to explore this topic through interviews with participants of litigation, and by discussing the effects of the court cases on their relationships with different stakeholders.

V. What role can collaborative partnerships and volunteerism and stewardship play in the protection of species at risk?

Another question the thesis addressed was the role of collaborative relationships between government and other stakeholders in the protection of species at risk. Species at risk protection is a broad issue that requires a lot of resources; it falls beyond the scope of any one organization or government.¹¹ The analysis in the thesis also focused on when and how litigation can facilitate these collaborations, and the effects of litigation on these relationships. The thesis also explores projects undertaken by NGOs that began before litigation, and have been used for years to help species that have not received sufficient protection under SARA and the OESA.

¹¹ These multi-stakeholder relationships are formed by acknowledging shared concerns and common goals that the member groups wish to achieve, and then breaking down those goals into working plans. Each stakeholder group will be able to offer different resources and inputs, and can benefit as an organization while also contributing to the overall goal.

1.3 Organization of the Thesis

The thesis began by discussing the biodiversity crisis and the plight of species at risk worldwide in Chapter One. It discussed the research issues and the research questions that guided the major themes of the thesis. Chapter Two will begin by portraying the current situation of species at risk in Canada, and in Ontario. It will explain the legal framework that is in place to help protect and recover species at risk. It also discusses threats to bird species, as two of the court cases discussed in Chapter Five pertain to migratory birds. Chapter Two also discusses policy tools that can be used to protect species at risk and the stakeholders that are involved in the process. It highlights volunteer efforts and stewardship programs that NGOs and stakeholders can participate in to help protect species. Chapter Three will discuss methodology of the research process. It also addresses the integrity gaps in the federal and provincial processes for protecting species at risk. The chapter begins by discussing the process for conducting the literature review, and then discusses how the policy evaluation of the laws was done. Next, it contains literature on analysis of legal cases, and lastly it explains the rationale behind the interview research that was used to support the policy evaluation.

The latter portion of the thesis focuses on the policy analysis, legal court cases, and voluntary and stewardship efforts, and incorporates qualitative interview research into its analysis. Chapter Four begins with a discussion on the Canadian context and history, followed by an analysis of the SARA. Following that, there is a comparison of the SARA and the U.S Endangered Species Act (ESA), and a brief discussion of other federal laws that are relevant to species at risk. Chapter Four continues with a discussion on the history of the OESA, and a policy evaluation of the law, and a brief comparison between the U.S ESA and OESA. Chapter Five surveys and contextualizes litigation cases and volunteer and stewardship efforts to protect species at risk. This chapter begins by discussing Ecojustice's court challenge to the OESA's regulatory exemptions. It then discusses three court cases on behalf of species at risk in Canada, involving bird species and turtles. The chapter then considers various volunteer efforts, stewardship programs and other initiatives undertaken by NGOs and stakeholders. It also discusses municipal programs that were enacted before and after the mentioned court cases. This

chapter is supplemented with interview research with members of NGOs, as well as a lawyer participating in species at risk litigation, researchers and scientists, and members of the government. Chapter Six concludes the thesis, beginning with a summary of the research, and then follows with policy recommendations to strengthen the federal and provincial processes for species recovery.

Chapter Two: Literature Review

2.1 Overview of Chapter

Human activities have caused global extinction rates to increase around three or four times in magnitude (Venter et al, 2006: 903). There are many efforts underway to combat species extinction, such as identifying biodiversity hotspots, developing a global protected area network, preventing the spread of exotic and non-native species, and dealing with overexploitation. There are also geographic differences that cause species extinction worldwide; for example in China, the major threat to endangered vertebrates is overexploitation, whereas in the U.S it is habitat loss and the introduction of new species. The introduction to the thesis discussed the situation of species at risk and the worldwide biodiversity crisis; Chapter Two focuses on the plight of species at risk in Canada, and in Ontario. Chapter Two also briefly discusses threats to bird species, as two of the court cases discussed in Chapter Five focus on bird species. This chapter also discusses the policy tools available to protect species at risk and the different groups of stakeholders that can be involved with and affected by the protection of species at risk.

2.2 Species at Risk in Canada:

A study conducted in 2006 quantified threats faced by 488 Canadian species that were categorized by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to be extinct, extirpated, endangered, threatened, or of special concern (see Table 1) (Venter et al, 2006: 903). The most significant threat was habitat loss (84%), followed by overexploitation (32%), native species interactions (31%), natural causes (27%), pollution (26%), and introduced species (22%). The most common human causes of habitat loss and pollution are agriculture and urbanization. Interestingly, only 30% of species face a single threat only; on average, species at risk face 2.2 of the 6 identified threats (Venter et al, 2006: 904).

The threat types varied across the taxonomic groups, as shown in Table 1. For example, habitat loss was a threat for all taxa, but much less of a threat to freshwater fishes, marine fishes,

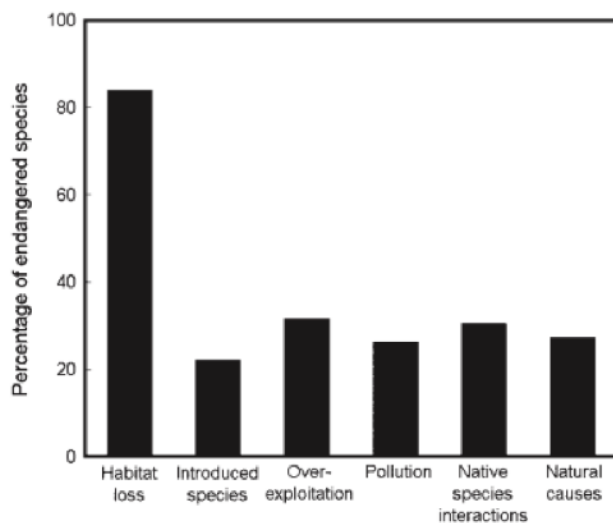
and marine mammals; overexploitation was the most significant threat for marine mammals and marine fishes (88% and 94% respectively). Overexploitation also affected reptiles and terrestrial mammals significantly (65% and 47% respectively). Pollution is the second strongest threat for freshwater fishes and also a significant threat to amphibians.

Protection of habitat is crucial in species' recovery, as is shown in Figure 1. Habitat loss is a serious threat faced by species at risk in Canada, across all taxonomic groups. The most common causes of habitat loss are urbanization (28%) and agriculture (27%) (Venter et al, 2006: 905). Overexploitation is a threat that is mainly caused by intentional harvesting and bycatch. Bycatch is also the most significant cause of overexploitation for endangered marine fish (78%).

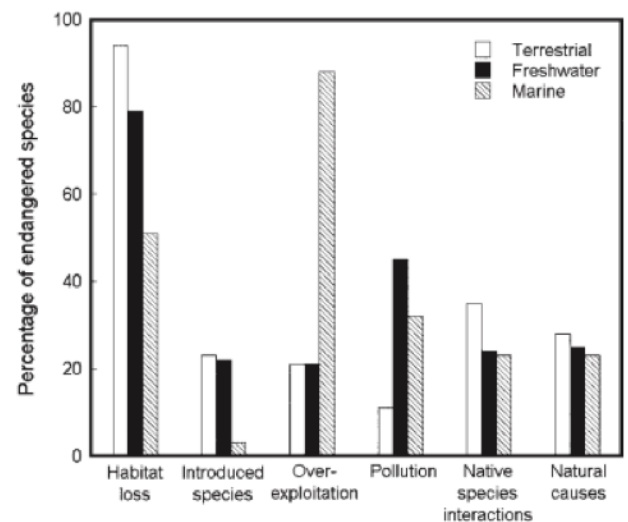
Table 1: Threats faced by endangered species in Canada. Reprinted from *Threats to Endangered Species in Canada* by Venter et al. Retrieved from JSTOR.org. Copyright 2006.

Summary of the threats facing endangered species in Canada, expressed as the percentage of endangered species affected.													
Threat	All species (n = 488)	Vascular plants (n = 151)	Freshwater fishes (n = 77)	Birds (n = 61)	Terrestrial mammals (n = 36)	Reptiles (n = 34)	Marine mammals (n = 32)	Molluscs (n = 21)	Amphibians (n = 19)	Lepidopterans (n = 19)	Marine fishes (n = 18)	Mosses (n = 13)	Lichens (n = 7)
Habitat loss	83.8	94.0	67.5	86.9	83.3	94.1	50.0	85.7	94.7	94.7	66.7	92.3	85.7
Urbanization	27.9	37.7	15.6	21.3	36.1	50.0	6.3	33.3	31.6	15.8	5.6	30.8	14.3
Agriculture	27.3	29.8	9.1	41.0	58.3	41.2	0	29.0	26.3	15.8	11.1	38.5	0
Human disturbance	24.6	41.7	10.4	14.8	19.4	11.8	43.8	19.0	5.3	10.5	16.7	23.1	28.6
Extraction	20.5	25.8	3.9	26.2	30.6	14.7	6.3	14.3	26.3	5.3	44.4	15.4	71.4
Infrastructure	18.0	19.9	18.2	8.2	22.2	32.4	9.4	14.0	36.8	0	22.2	23.1	0
Introduced species	22.1	32.5	27.3	14.8	11.1	17.6	0	28.6	36.8	15.8	16.7	0	0
Competitors	9.6	20.5	7.8	1.6	2.8	2.9	0	9.5	15.8	0	11.1	0	0
Predators	5.9	1.3	14.3	9.8	2.8	11.8	0	0	21.1	0	5.6	0	0
Hybridizers	1.8	2.0	2.6	0	5.6	0	0	0	0	0	0	0	0
Pathogens	0.8	0.7	0	0	5.6	0	0	5.3	0	0	0	0	0
Habitat effect	3.7	4.0	0	4.9	2.8	2.9	0	0	15.8	15.8	5.6	0	0
Overexploitation	31.6	11.3	33.8	34.4	47.2	64.7	87.5	9.5	10.5	10.5	94.4	0	0
Harvesting	22.1	11.3	19.5	24.6	25.0	29.4	78.1	9.5	5.3	5.3	72.2	0	0
Bycatch	9.2	0	11.7	4.9	8.3	11.8	34.4	0	0	5.3	77.8	0	0
Road kill	4.9	0	0	9.8	8.3	41.2	0	0	5.3	0	0	0	0
Persecution	3.9	0	2.6	0	16.7	32.4	0	0	0	0	0	0	0
Collisions	3.1	0	0	8.2	0	5.9	25.0	0	0	25.0	0	0	0
Pollution	26.2	12.6	50.6	29.5	13.9	17.6	43.8	42.9	52.6	0	27.8	7.7	28.6
Agriculture	9.2	3.3	11.7	13.1	11.1	2.9	6.3	42.9	26.3	0	5.6	0	14.3
Urbanization	5.9	4.0	11.7	1.6	2.8	8.8	12.5	24.0	0	0	0	0	0
Extraction	4.1	0	2.6	4.9	0	2.9	18.8	14.0	10.5	0	16.7	0	0
Infrastructure	2.7	2.6	1.3	1.6	0	0	12.5	9.5	5.3	0	0	0	0
Human disturbance	0.2	0	0	0	0	0	0	4.8	0	0	0	0	0
Native species interactions	30.5	31.8	16.9	45.9	47.2	35.3	21.9	28.6	21.1	21.1	27.8	7.7	57.1
Natural causes	27.3	26.5	15.6	24.6	30.6	50.0	6.3	28.6	57.9	26.3	38.9	30.8	42.9
Intrinsic factors	14.8	11.3	7.8	8.2	11.1	38.2	3.1	24.0	52.6	15.8	38.9	7.7	0
Natural disasters	14.3	16.6	9.1	18.0	22.2	11.8	6.3	4.8	15.8	10.5	5.6	23.1	42.9

Note: Categories are not exclusive and therefore do not sum to 100%.



The percentage of endangered species in Canada (n = 488) identified by the Committee on the Status of Endangered Wildlife in Canada in June 2005 as threatened by habitat loss, introduced species, over-exploitation, pollution, native species interactions, or natural causes.



The percentage of Canadian terrestrial (n = 231), freshwater (n = 154), and marine (n = 43) endangered species that are listed by the Committee on the Status of Endangered Wildlife in Canada as threatened by habitat loss, introduced species, overexploitation, pollution, native species interactions, or natural causes.

Figure 1: Percentage of Canadian species affected by various threats. Reprinted from *Threats to Endangered Species in Canada* by Venter et al. Retrieved from JSTOR.org. Copyright 2006.

These threats can be divided into five categories of human activities: urbanization, agricultural activities, human disturbance, extraction, and infrastructure development (Venter et al, 2006: 906). The most common forms of human disturbance were vessel traffic for marine animals and vehicle use or pedestrian trampling for terrestrial plants. The same study also compared Canadian species to species at risk worldwide, and to American species (see Figure 2).

This study confirmed that habitat loss is the greatest threat to Canadian species (Venter et al, 2006: 909). It affects approximately 94% of terrestrial species and is caused mainly from agricultural uses and converting land for urban uses. It is imperative to define terrestrial protected areas, however most of the crucial habitat falls on private land. In Canada, only habitat on federal lands is protected federally, which is 4% of overall terrestrial habitat. The rest of the

land is under the jurisdiction of the provinces. After habitat loss, overexploitation is the second most significant threat to Canadian species at risk, especially for marine species. The least significant threat to Canadian species comes from introduced species. Another important finding was that most species face more than one threat, and the number of threats faced by a species generally increased with the level of endangerment. This highlights the need for species' recovery plans to mitigate multiple threats simultaneously.

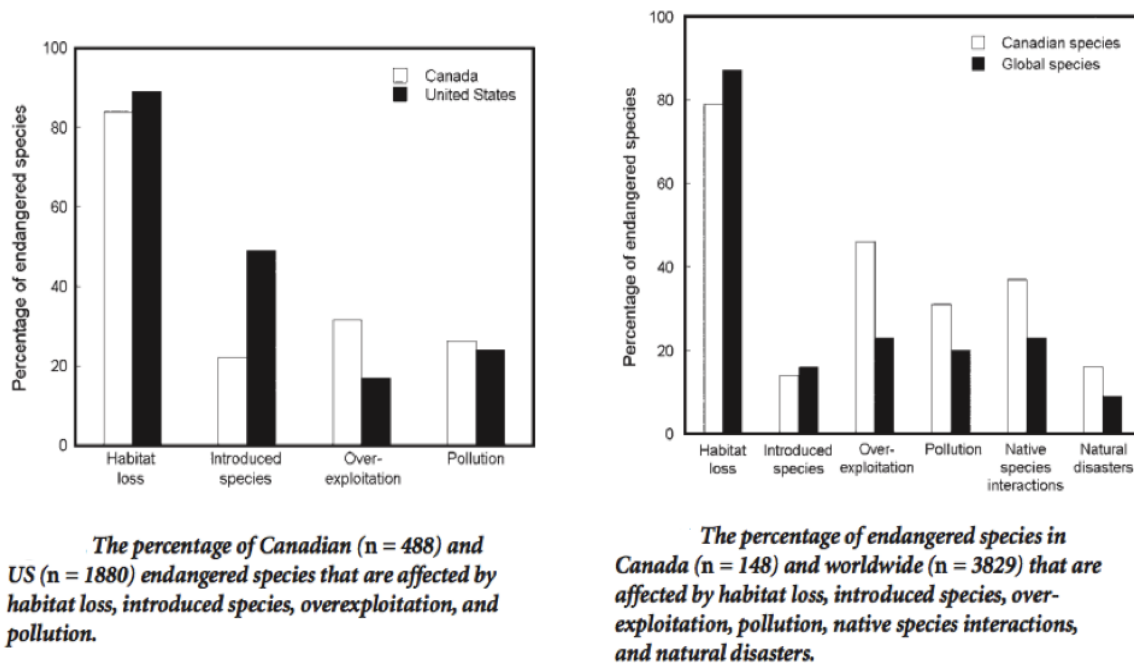
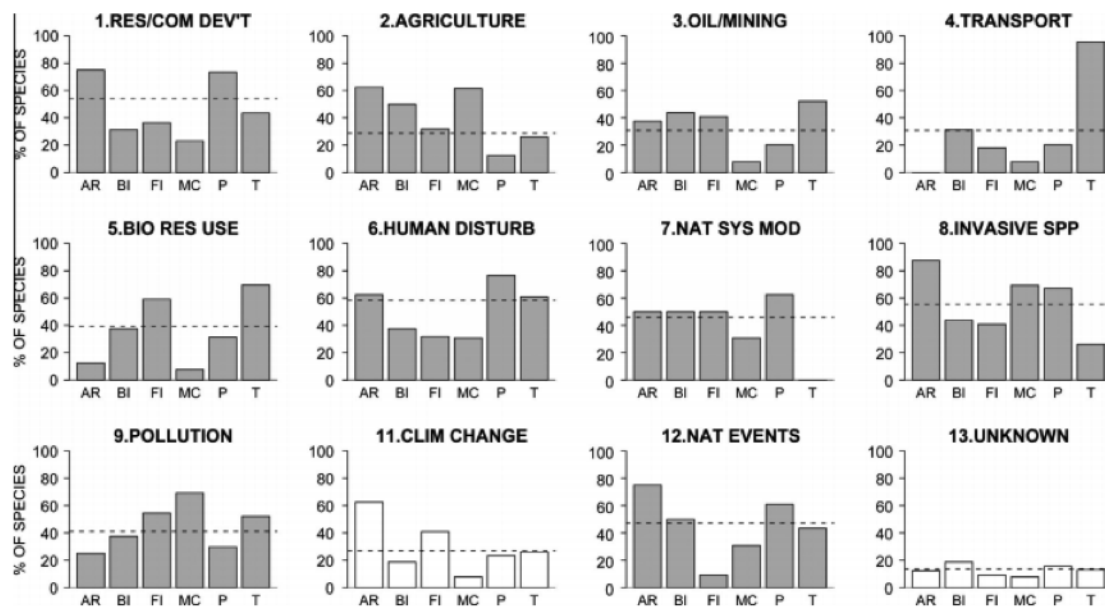


Figure 2: Comparing threats faced by Canadian species at risk to American and Global species. Reprinted from *Threats to Endangered Species in Canada* by Venter et al. Retrieved from JSTOR.org. Copyright 2006.

Another study analyzed the percentage of species affected by IUCN threats.¹² There were differences found in the major threat types across taxonomic groups (McCune et al, 2013: 263). Plant species were threatened mainly by human disturbance, and then residential and commercial development and invasive species. It was also found that 95% of tetrapods, which includes

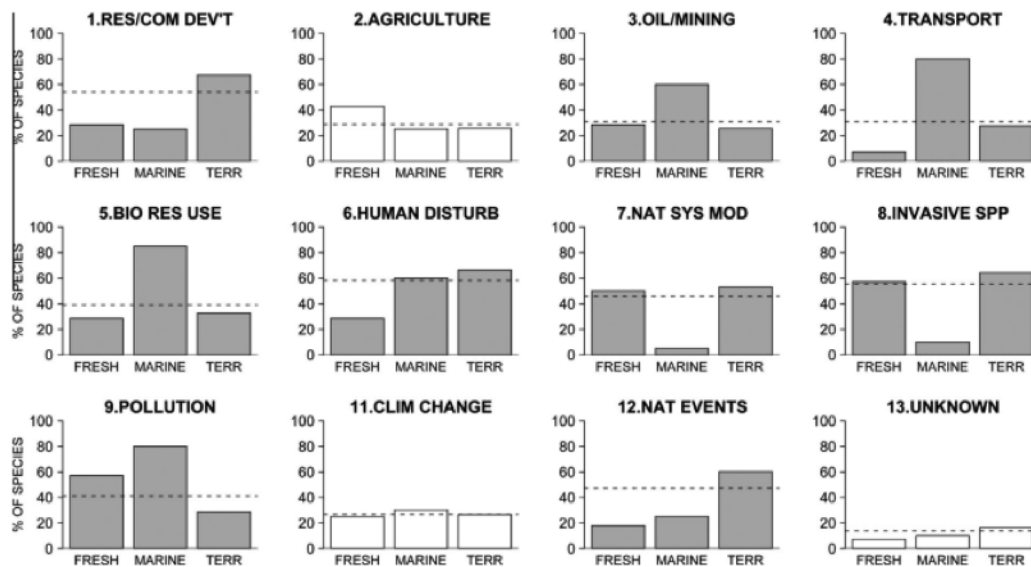
¹² The International Union for Conservation of Nature (IUCN) Red List Categories and Criteria are an internationally “understood system for classifying species at high risk of global extinction” (IUCN, 2001).

mammals, reptiles and amphibians, face threats from transportation and service corridors. Over 75% of marine species are threatened by biological resource use, pollution, and transportation. Less than half of the recovery strategies for these included critical habitat designation, and many species did not have finalized recovery strategies (McCune et al, 2013: 263).



The percentage of species in each taxonomic group threatened by each IUCN first-level threat type. Fisher's exact tests indicated that there is a significant association ($p < 0.05$) between taxonomic group and the presence/absence of all threat types except for climate change and unknown/uncertain threats (unshaded graphs). Dashed lines show the percentage of all species pooled. (AR = arthropods, BI = birds, FI = fish, MC = molluscs, P = plants (including lichens and mosses), and T = tetrapods (including mammals, amphibians and reptiles)).

Figure 3: Percentage of species facing IUCN threats, organized by taxonomic group.
Reprinted from *Threats to Canadian species at risk: An analysis of finalized recovery strategies* by McCune et al: 261. Copyright 2013.



The percentage of species in each broad habitat type threatened by each IUCN first-level threat type. Fisher's exact tests indicated that there is a significant association ($p < 0.05$) between broad habitat type and the presence/absence of all threat types except for agriculture and aquaculture, climate change, and unknown/uncertain threats (unshaded graphs). Dashed lines show the percentage of all species pooled (Freshwater = "FRESH", marine = "MARINE" and terrestrial = "TERR").

Figure 4: Percentage of species facing IUCN threats, organized by broad habitat type. Reprinted from *Threats to Canadian species at risk: An analysis of finalized recovery strategies* by McCune et al: 261. Copyright 2013.

2.3 Species at Risk in Ontario

Under the OESA, decisions to list species to be protected under the act are made by the Committee on the Status of Species at Risk in Ontario (COSSARO), which is an independent scientific body, and listing of recommended species is mandatory under the law. COSSARO's recommendations are passed onto the Ministry of Natural Resources (MNR), and MNR lists species that COSSARO believe are at risk on the Species at Risk in Ontario List (SARO). However, there have been listing delays on part of the MNR. Once a species is listed under SARO, it cannot be harmed or killed, and its habitat is legally protected from destruction. It is necessary to define critical habitat under the OESA, however the extent of habitat identification and regulation has been inconsistent and unreliable. The provincial government has to make a decision about its proposed actions within a certain deadline, and must conduct progress reviews. However, the government has been slow in creating response statements. In 2012, there were

212 listed species under the OESA, and 47 recovery strategies and 33 government response statements completed, and 12 response statements were being drafted.

2.4 Threats to Bird Species

Overall, there are many causes for the rise in endangered species in Canada. Habitat loss is a major threat for bird species, and for migratory birds (Hutchings and Festa-Bianchet, 2009: 58-59, 64). Aerial insectivores are now less abundant, and species that were once abundant in Canada are now considered threatened, such as the Olive-sided Flycatcher, the Common Nighthawk, and the Chimney Swift. The Olive-sided flycatcher, a subject of one of the court cases discussed in Chapter Five, is estimated to have declined by 79% since the late 1960s and by 29% in the past decade (Hutchings and Festa-Bianchet, 2009: 58). The Common Nighthawk, another once abundant species, declined around 50% over the past three generations (past 10 years), and approximately 80% since the late 1960s and early 1970s (Hutchings and Festa-Bianchet, 2009: 59). Since the late 1960s, Chimney Swifts have declined by over 95% (Hutchings and Festa-Bianchet, 2009: 59). Hobson et al (2013:1) estimated that 616 thousand to 2.09 million bird nests are destroyed annually by industrial forest harvesting in Canada. This is strong cause for concern. This thesis will focus specifically on threats to bird species from window collisions, as that is the subject of two of the court cases discussed in Chapter Five.

A report released by Environment Canada in 2013 stated that 269 million birds and 2 million nests are destroyed by human related activities annually (Calvert et al, 2013). These killers of wild birds in Canada can be broken down into the following categories: domestic and feral cats (200 million); Power lines, collisions and electrocutions (interestingly, wind turbines are not a huge source of bird deaths); collisions with houses and buildings; vehicle collisions; game bird hunting; agricultural pesticides; agricultural mowing (an example is the bobolink, a protected species that makes its nests in grass and is often killed when grass is cut or cleared); commercial forestry; and communication towers. Approximately 95% of these bird kills result from domestic and feral cats, collisions with tall structures, and mortality from vehicle collisions (9 leading causes of bird deaths, 2013).

Migratory bird deaths due to window collisions

This thesis will examine two cases where NGOs litigated against businesses in relation to the deaths of migratory birds from buildings. It is estimated that 1 to 10 million birds are killed every year in Toronto from colliding into buildings or other structures (LeBlanc, 2014). Dr. D. Klem Jr. in 1990 estimated that 97.6-975.6 million birds are killed yearly in the U.S as a result of flying into buildings (Machtans et al, 2013). Around 25 million birds in Canada are killed as a result of hitting windows; this includes houses, low-rise buildings, and tall buildings (Machtans et al, 2013). Houses have the highest rate of collisions (around 90%), followed by low-rise buildings (just under 10%), and tall buildings are responsible for 1% of building-related mortality (Machtans et al, 2013).

The Fatal Light Awareness Program (FLAP) is an NGO that has been gathering data on bird collisions in Toronto and surrounding areas since 1993. According to FLAP estimates, anywhere from 100 million to 1 billion birds are killed after colliding into buildings in North America (Scientist uses light study..., 2014). Many of the collisions happen at night when building lights are left on, and birds are migrating. The City of Toronto is a hotspot for these collisions because it is located where two migratory flyways converge and has many low, mid and high-rise buildings along Lake Ontario.

2.5 Policy Tools for Protection of Species at Risk

Canada was the first industrialized western nation to ratify the United Nations *Convention on Biological Diversity* in 1992, and pledged to protect Canadian species at risk and their habitats and ecosystems (Government of Canada, 2014a, May 30). The signing and passing of SARA in 2002 fulfilled one of Canada's obligations under the CBD. Section 14 of SARA establishes COSEWIC as the responsible body for assessing the status of Canadian species at risk (Hutchings and Festa-Bianchet, 2009: 53). There are three main purposes of SARA: 1) to prevent species extinction; 2) to recover endangered, threatened, and extirpated species; and 3) to ensure that species of special concern do not become further at risk (Hutchings and Festa-

Bianchet, 2009: 54). An important function of SARA is to take pre-emptive measures to reduce threats to species before they become at-risk (Hutchings and Festa-Bianchet, 2009: 54).

A *Canadian Biodiversity Strategy* was developed in the early 1990s as well, to provide a framework for action for various levels of government (Government of Canada, 2014a, May 30). The strategy encourages biodiversity conservation and sustainable resource use, and outlines how Canada will aid in international conservation measures to implement the Convention. A *Biodiversity Outcomes Framework* was also created to complement the strategy. This framework states the objectives that need to be met for Canadian biodiversity. One defining goal of this framework is to stop wild species in Canada from becoming at risk by addressing and mitigating the issue at early stages of risk. The framework aims to bring together governments, Aboriginal organizations and communities, industry, and other stakeholders to manage land use and collaborate on these issues.

The development of the *Canadian Biodiversity Strategy* was followed by the *1996 Accord for the Protection of Species at Risk* (Government of Canada, 2014a, May 30). The accord contains commitments from federal, provincial, and territorial ministers to do the following: (i) identify at-risk species and protect their habitats and living spaces; (ii) create recovery plans; (iii) develop needed laws, regulations, and policies as well as programs for stewardship opportunities. In Canada, the provinces and territories manage wildlife species on their lands as well as land use of their habitats, and the federal government regulates aquatic and migratory species, and species found on federal lands. Thus, species conservation in Canada requires collaboration between all levels of government, and other stakeholders. As a result of the commitments in the *Canadian Biodiversity Strategy* and the *1996 Accord for the Protection of Species at Risk*, the federal law SARA came into place¹³. SARA's main focus is to prevent Canadian wildlife species from extirpation or extinction and to recover those populations that are at risk due to human activities, and to take care of species of special concern so they will not become endangered or threatened (Government of Canada, 2014a, May 30).

¹³ Table 2, found at the end of this chapter, situates significant Canadian developments relating to biodiversity within a global context.

The Species at Risk Public Registry outlines the National Framework for Species at Risk Conservation (NFSARC). This framework is meant to support the implementation of the 1996 Accord for the Protection of Species at risk by “providing a set of common principles, objectives and overarching approaches for species at risk conservation that all participants can share and work toward in a collaborative way,” (Government of Canada, 2014a, May 30). The objectives of the framework are to facilitate coordination between various jurisdictions, maintain consistency in policies and procedures across jurisdictions, and to pave the way for agreements across various levels of government (Government of Canada, 2014a).

The Species at Risk Public Registry also outlines the Species at Risk Conservation Cycle.¹⁴ This cycle contains steps for the assessment, recovery planning, implementation, and monitoring and evaluation stages.

2.6 Stakeholders, Volunteer Efforts and Stewardship Programs

The Species at Risk Public Registry identifies stakeholders involved in the Species at Risk program. These stakeholders will vary across the elements and departments that are involved, and can be a part of various cycles in the Species at Risk Conservation Cycle. Stakeholders should be consulted in various stages of the cycle, and their input is considered in the assessment process; they are also involved in stewardship activities. Co-operating and working with stakeholders is imperative to the successful recovery of species. The Registry identifies the following groups of stakeholders (Government of Canada, 2011a):

¹⁴ The Species at Risk Conservation Cycle will be discussed in Chapter Four.

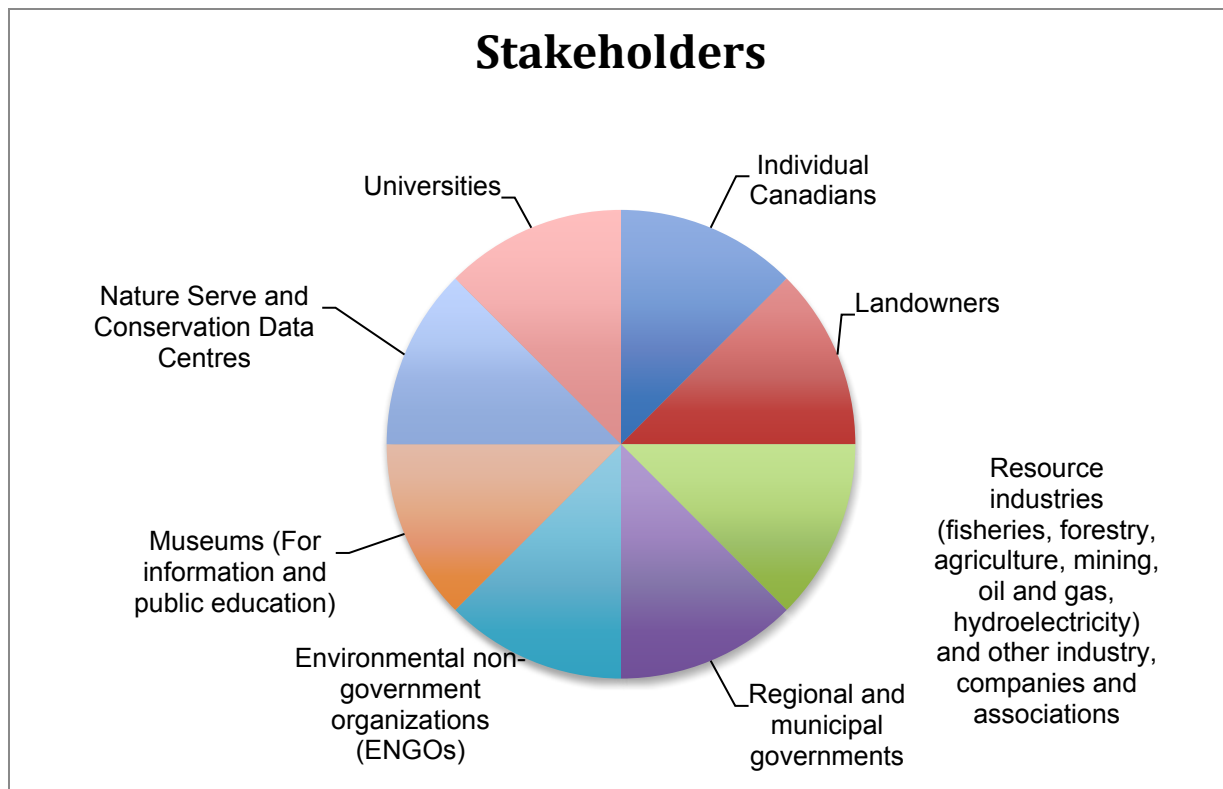


Figure 5: Stakeholders in the protection of species at risk. Adapted from *Species at Risk Program: Results-Based Management and Accountability Framework and Risk-Based Audit Framework* by the Species At Risk Public Registry. Retrieved from <https://www.registrelep-sararegistry.gc.ca>. Copyright 2011.

The stakeholders¹⁵ involved in species at risk protection could be any individual or group affected or interested in the issue. This could include concerned individuals, private landowners, researchers, NGO volunteers, members of government, researchers and research institutions and universities, zoos, and various industries. The aim for this thesis was to interview members from the listed major stakeholder groups. The valuable data that was gathered provided insights on the rationale behind stakeholder actions when pursuing litigation.

¹⁵ In 1995, Environment Canada and the Canadian Wildlife Service published a document, *Report on public consultation: a national approach to endangered species conservation in Canada*. This document summarized the results from 14 workshops, with public consultation on species at risk in Canada.

Table 2: Timeline of Significant Biodiversity Developments. Adapted from Environmental Law and Policy in the Canadian Context by Greenbaum and Wellington, 2010: 465.

This is a timeline of selected significant developments in biodiversity law and policy, situating Canada in the larger global context:

1885: Canada's first national park established, initially called Banff Hot Springs Reserve, then renamed Rocky Mountains National Park, more recently called Banff National Park

1887: Canada's first bird sanctuary, Last Mountain Lake, established

1916: Canada-United States Migratory Birds Convention

1917: Canada enacts the *Migratory Birds Convention Act*

1930: Canadian Parliament passes first *National Parks Act*

1966: United States passes *Endangered Species Preservation Act*, amended in 1969 and replaced in 1973 with the *Endangered Species Act*

1971: Ontario passes *Endangered Species Act*; Ramsar Convention on Wetlands of International Importance

1973: Canada passes the *Canada Wildlife Act*; New Brunswick passes *Endangered Species Act*; United States passes revised and comprehensive *Endangered Species Act*

1978: Committee on the Status of Endangered Wildlife in Canada (COSEWIC) begins assessing wildlife species and classifying their chances of survival

1980: *World Conservation Strategy* developed

1981: Canada adopts the Ramsar Convention of 1971

1987: Brundtland Commission releases *Our Common Future*

1988: Wildlife Ministers' Council of Canada establishes the program for Recovery of Nationally Endangered Wildlife (ReNEW)

1989: Canadian Parks and Wilderness Society (CPAWS) and World Wildlife Fund (WWF) launch Endangered Spaces Campaign; Manitoba passes *Endangered Species Act* and Quebec passes *An Act Respecting Threatened or Vulnerable Species*

1990: Federal government and Wildlife Ministers' Council of Canada develop *A Wildlife Policy for Canada*

1991: Federal government develops *The Federal Policy on Wetland Conservation*

1992: In June, Convention on Biological Diversity opened for signature at United Nations Conference on Environment and Development (UNCED), and Canada becomes a signatory; Council of Canadian Forest Ministers release Canada Forest Accord

1993: Convention on Biological Diversity enters into force during December; Canada becomes first industrialized nation to ratify the Convention

1994: Canadian government and Biodiversity Working Group develop *Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity*; Revised National Marine Conservation Areas Policy released; *Migratory Birds Convention Act* amended

1996: National Accord for the Protection of Species At Risk endorsed by federal, provincial, and territorial governments; *Canadian Endangered Species Protection Act* introduced in October 1996 and died on the order paper in April 1997 when federal election called

1998: *Parks Canada Agency Act* passed; Nova Scotia passes *Endangered Species Act*; Prince Edward Island passes *Wildlife Conservation Act*; Saskatchewan passes *Wildlife Act*

1999: COSEWIC updates criteria, relying upon criteria developed by International Union for Conservation of Nature (IUCN)

2000: *Canada National Parks Act* passed by Parliament in June (passed by Senate in October 2000); *Species at Risk Act* introduced in April 2000 and died on the order paper in October 2000 when federal election called; Alberta passes *Wildlife Act*

2001: *Species at Risk Act* reintroduced after Liberals re-elected

2002: *Species at Risk Act* passed by Parliament in June 2002, coming into force during December 2002; *Canada National Marine Conservation Areas Act* passed

2007: Ontario passes *Endangered Species Act, 2007*

2009: Parliament passes *Environmental Enforcement Act*, amending *Antarctic Environmental Protection Act*; *Canada Wildlife Act*; *Canada National Marine Conservation Areas Act*; *Canada National Parks Act*; *Canadian Environmental Protection Act, 1999*; *International River Improvements Act*; *Migratory Birds Convention Act, 1994*; *Saguenay-St. Lawrence Marine Park Act*; and *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act*.

Chapter Three: Research Methods

Knowledge production and research in the field of environmental law and policy overlap considerably with research undertaken in the context of the humanities and social sciences, although much of the content of environmental law and policy falls within the scope of the natural and physical sciences.¹⁶ This type of research can be done through either qualitative or quantitative methods, although the former is much more common.

Qualitative research, which was used for this thesis, aims to make meaning out of data. The methods used for this type of research include: i) participant observation often through social science fieldwork; ii) interview research using a highly structured format with predetermined questions, or open ended exploratory questions, or a mixture of both; iii) case study research or (iv) interpretation of documents or artifacts (Yin, 2011, Malterud, 2012; Gill et al, 2008). These methods are meant to explore or expose the perspectives and experiences and meanings that individuals or groups being studied attach to the topic. Much of the policy analysis oriented scholarship in the field of environmental law will rely upon interpretive, qualitative research (Wellington, 2017).

A qualitative study will typically begin by considering three key aspects: i) the topic that will be chosen and what will be studied, ii) a method of data collection; and iii) a source of data, and where the data will be collected from. An overarching purpose of qualitative research can be to collect and make sense of data obtained from various sources, including interviews, observations, and analysis of documents and artifacts (Yin, 2011:8-9). The perspectives and opinions of interview subjects, for instance, can contribute substantially to an interpretive, qualitative study. Qualitative interviews aim to understand the participants' experiences from their perspectives and how they define them, which is one of the main objectives of qualitative

¹⁶ Chynoweth (2008) explicitly and expressly differentiates research methodology for legal analysis relating to environmental themes from the methodology that is common to the physical and natural sciences. Chynoweth (2008: 35) emphasizes that the former has its own ways to establish credibility and legitimacy, including by demonstrating an “understanding [of] and adherence to the accepted conventions and norms of its discourse.”

research. Conclusions that will be developed at the culmination of a qualitative research project, including policy recommendations, can be expected to draw upon data acquired from the various sources, which helps to ensure “the study’s credibility and trustworthiness,” (Yin, 2011:9).

In the context of this thesis, qualitative research was conducted through: (i) undertaking policy analysis of relevant species at risk laws, regulations and policies; (ii) carrying out and analyzing semi-structured interviews; and (iii) examining factors motivating and prompting litigation, with a focus on selected court cases.

3.1 Literature Review

The thesis began with a literature review that drew materials from the field of empirical science. This scientific information depicted the current biodiversity crisis worldwide, and more specifically in Canada, and in Ontario. The scientific research focused on ecology and biodiversity, and these sources of knowledge are what inform the fields of policy and law.

The literature review began with research on the current state of biodiversity worldwide, and the major threats faced by species at risk. It then focused on species at risk in Canada, and the major threats that these species face. The scientific information is what influences policy-making, so the next part of the literature review discussed the policy cycle in regard to the federal and provincial processes for species at risk protection. The final portion of the literature review discussed the various stakeholders that can be involved in issues relating to species at risk. These factors are important for Chapter Four’s discussion of the Canadian federal and Ontario’s laws for species at risk, and the implementation gaps and weaknesses in the laws.

3.2 Policy Evaluation of Laws and Legal Cases

The study of law and legal cases involves examination of the activities of persons, which can include human beings, as well as artificial persons, such as businesses and corporations, and government organizations (Wellington, 2017). Legal scholars are concerned with human conduct in regards to the ways that legal rules are created, implemented, applied, and followed, and also

with conduct that is law-abiding, or law-breaking. Legal scholars, along with policy makers and bureaucrats, are also interested in how to address non-compliance with respect to these legal measures. Social and natural scientists interact with the studies of law by attempting to assess the “societal, ecological and economic consequences of compliance and non-compliance,” (Wellington, 2017).

Environmental legal and policy scholarship combines doctrinal analysis with normative analysis. Doctrinal analysis involves examining relevant status, regulations and jurisprudence, whereas normative analysis involves interpretation and policy evaluation and recommendations for reforms. In the evaluation and prescription stages of the research, there is an assessment of what is and is not working effectively and efficiently in a specific area of law, and recommendations and improvements are suggested to strengthen that area of law (Wellington, 2017).

Doctrinal Analysis and Analysis of Legal Cases

One common approach to analyzing areas of law, including environmental law, is doctrinal analysis.¹⁷ The aim of such research is to understand the legal rules that are in place, and to analyze the relationships between these rules. Doctrinal research is also used to understand how the law has changed and evolved over time, and what changes can be expected in the future (Wellington, 2017).

¹⁷ Doctrinal research can include various legal materials and data including: primary sources such as case law, legislation, and regulations (for example, federal and provincial statutes and municipal bylaws), and also secondary sources, such as parliamentary material, law reform reports, government policy documents, discussion papers, and policy documents from NGOs, industry associations, and think tanks, and journal articles. In addition, useful sources can include: government press releases and backgrounders; summaries of legal cases in bulletins and newsletters from lawyers and law firms; advocacy and campaign materials from ENGOs and citizen advocacy groups, as well as mass media or social media materials (such as newspaper articles, editorials, and blog posts). Many of those types of materials were the focus of analysis for this thesis.

Doctrinal research is a common approach used by lawyers, as well as legal and public policy scholars. The skills used for conducting doctrinal research are locating, reading, analyzing, and organizing the primary sources, following by locating, reading, analyzing, and connecting these to the secondary sources of information. Doctrinal approach used for legal research uses qualitative interpretative analysis to answer the question it is investigation. The steps to conduct this approach are: i) choosing a topic; ii) identifying the legal issues or aspects of that topic; iii) searching for and accessing and analyzing the relevant legal documents, which can include status, regulations, and court cases; iv) locating and analyzing relevant legal commentary, which can involve books, policy¹⁸ documents, media coverage, and other sources of information; v) analyzing what there is to be learned about the law in relation to the chosen topic. Doctrinal analysis can be useful preliminary research for evaluating a law, and assessing whether reform is needed, and if so, which aspects should be reformed or improved (Wellington, 2017).

Policy evaluation of legal cases can help in developing knowledge through “an ongoing process of reiterative enquiry,” (Chynoweth, 2008:36). Such qualitative, interpretive scholarship attempts to gain a “holistic understanding of ... overall complexity,” (Chynoweth, 2008:36). The aim of this thesis was not to examine the cases themselves, but rather to ask questions surrounding the events that led to these cases. The research examined the situations that led NGOs to take government and businesses to court. The second part of the analysis was to determine what the results were outside of the courtroom, and what sorts of policies and initiatives were developed as a result. This was done by looking at policy documents, and also supplemented by the interview research with participants that were involved in litigation, or other efforts to protect species at risk.

¹⁸ Many of the most current and up to date materials about jurisprudence and legal cases are not peer-reviewed sources, as distinct from what is otherwise the norm in academic research and scholarship. These sources can be assessed for their relevance and importance for using in research, by checking the authorship of the materials (and especially the legal expertise of the authors), the source which they came from (reliability and credibility), and particularly their timeliness (Wellington, 2017).

Policy Evaluation Analysis

Policy evaluation analysis is another approach that can be used for studying environmental law. This type of analysis is grounded in the methods, approaches and perspectives in the fields of social sciences and humanities. Environmental policy analysis most commonly involves identifying policy goals of government or business or other actors, and then a focus on specific policy tools (such as laws, regulations, and program) to determine whether the chosen policy instruments are constructed well enough to achieve the policy goals that they were meant to. Environmental policy analysis can choose to examine existing or proposed laws, regulations, bylaws, and programs (Wellington, 2017).

One of the purposes of policy analysis is to determine how effective the chosen legal and policy instruments are. To conduct this type of analysis, it is important to create and apply certain criteria for assessing the effectiveness of those instruments. This is to answer the question of what makes a certain law, regulation, bylaw, or policy more or less effective. A second purpose of policy analysis is to create recommendations for how to improve and enhance the effectiveness of those policy tools (Wellington, 2017).

Conducting a policy analysis involves developing evaluation criteria to determine how effective the chosen law, regulation, bylaw, or program is. Some criteria that can be used include: “Effectiveness and Efficiency; Incentives to motivate behavioural changes; Enforceability and Compliance; Fairness, Equity and Inclusion; Opportunities for Public Participation; Transparency and Accountability, (Wellington, 2017).” Effectiveness is usually analyzed and evaluated keeping in mind the goals and objectives of the policy, and is conducted by doing the following steps:

- i. Identifying policy goals, which are usually found in policy documents, or in legislation or regulation;
- ii. Identifying policy tools and instruments that were created to achieve the policy goals

- iii. Interpreting and evaluating the way that these tools and instruments were developed to achieve its goals and objectives
- iv. Interpreting and evaluating whether the tools that are in place are realizing their intended purposes; and
- v. Interpreting and evaluating whether there are reforms required, and if so, what kind of reforms are required, for the existing policy tools and instruments to be more effective at fulfilling the intended goals and objectives (Wellington, 2017).

3.3 Interview Research in Support of Policy Evaluation

Rationale for interview research

Interviews can be a good choice for conducting qualitative research, and to collect facts and gain “insights into or understanding of opinions, attitudes, experiences, processes, behaviours, or predictions” (Rowley, 2012: 261). Interviews can be conducted with one participant only, or with different people together (focus groups) or separately (Rowley, 2012). Studies based on a set of open-ended interviews are considered qualitative because the researcher is analyzing the interview’s perspectives, opinions and ideas, and not using the data numerically (Yin, 2011:32). The dialogues from interviews can form enough data to complete an entire study (Yin, 2011:32).

The purpose of research interviews is to explore views, opinions and experiences from participants on various topics (Gill et al, 2008: 292). They can provide a more in depth understanding of the subject compared to quantitative methods, such as questionnaires. Interviews work well in situations where there is not a lot of available information about a topic or where more detailed information is needed. They can also be used to research sensitive topics which are more personal, and which participants would rather not discuss in a group setting. Interviews vary in what they are trying to have answered by the interviewee. In some types of research, a hypothesis is being tested, where the interviewing will be very structured, and other types of research are used to go more in-depth into a certain topic and to understand it better

(DiCicco-Bloom & Crabtree, 2006: 314). A qualitative research interview will “contribute to a body of knowledge that is conceptual and theoretical and is based on the meanings that life experiences hold for the interviewees,” (DiCicco-Bloom & Crabtree, 2006: 314). For the purpose of this thesis, qualitative interview research was carried out, to gain further insight on litigation on behalf of species at risk. The interviews were conducted with experts on the subject, members of NGOs and members of governments, and participants in litigation cases.

Research interviews can be of three types: structured, semi structured, and unstructured (Gill et al, 2008: 291).¹⁹ These interviews are easy to conduct because of the format, however the responses from the participants will be limited to only the asked questions, and the responses may not be in depth. Unstructured interviews are minimally organized if at all, and the interviewer will not begin with any preconceived notions about the topic.²⁰ Semi-structured interviews can be used by researchers to explore a few questions or topics that they would like to discuss, and can inquire further into the subjects based on the participants’ responses. These interviews have some important questions that set the tone of the interview, but also allow for either the interviewer or the participant to deviate from those questions to explore certain subjects further. This interview method can prepare participants with an idea on what to discuss. Semi-structured interviews are also more flexible than structured interviews, and can allow the participant to discuss things that may not have been deemed important to the researcher when preparing questions.

Semi-structured interviews were chosen as the research method for this subject, as the interviews were expected to generate new data, which could then prompt more questions and in-depth discussion. This turned out to be the case, as a few of the interviews allowed for discussion of new information that had not been considered before. The format of a semi-structured

¹⁹ Structured interviews are similar to a verbal questionnaire, where the questions are predetermined, and the discussion does not vary from those topics. There are also no follow-up questions to the participant’s responses.

²⁰ These interviews take up more time and can be difficult to manage, since there are no interview questions to guide the discussion. Unstructured interviews are preferred for research where a lot of depth is required, or in cases where there is no information available on the subject, or a different perspective is required on a topic.

interview also allowed for more discussion of certain areas the interviewees wanted to discuss, and allowed for adjusting of the questions accordingly. Semi-structured interviews generally consist of a set of open-ended questions, and other questions will come up during the dialogue (DiCicco-Bloom & Crabtree, 2006: 315). They are the most common interviewing type in qualitative research, and can happen with one participant or in groups. Individual interviews allow the interviewer to have more in-depth conversations about the topic. Interview questions can be altered, added, and removed as the researchers learn more about the subject, as is often the case with qualitative research (DiCicco-Bloom & Crabtree, 2006: 316).

In a qualitative semi-structured interview, the interview does not have to be scripted, and there is usually not a set of rigid questions that the interviewer will ask (Yin, 2011:134). Rather, the researcher can adopt a “mental framework” of guiding questions, however the specific questions that will be asked will differ in each interview. The second difference is that in qualitative research, the researcher does not need to conduct themselves in a uniform behaviour in each interview. Rather, a qualitative interview can flow like a conversation and will “lead to a social relationship of sorts,” with the type of relationship varying with each participant (Yin, 2011:134). The conversational relationship can allow for two-way interactions, where the participant can even ask questions to the researcher. A third key distinction between qualitative and structured interviews is that a lot of the important questions in a qualitative interview will be open-ended rather than close-ended (Yin, 2011:135).

The aim for the research interviews was to have candidates from 3-4 categories: environmental lawyers, NGOs, members of government, scientists and researchers, and other stakeholders. Candidates were found by examining the relevant court cases and selecting lawyers, members of NGOs, scientists and researchers, and members of government who had worked on the relevant cases or had some involvement in the case relative to the species.

Recruitment was done through email; in the emails, the candidates were informed that they had been chosen specifically, and not at random.²¹ The email highlighted the value of their expertise and that it would benefit the research greatly. Six in-depth interviews were conducted, and the information gathered was sufficient for the purposes of writing this project.²²

The final list of candidates is summarized in the following table:

Table 3: Interview participants

Interviewee Number	Category	Profession	Relevant expertise/case
1	CEO of NGO	Bird safety advocate	Witness for court case involving migratory birds
2	Lawyer	Environmental lawyer	Prosecutor in a case against the Ontario government regarding ESA regulation
3	Scientist/researcher	University professor and researcher	Expert on species at risk in North America
4	Scientist/researcher	University professor and researcher/scientist	Expert on migratory birds
5	Member of government	City Councillor and environmentalist	Witness for court case involving migratory birds, introduced bird friendly guidelines and other bird-friendly initiatives to Toronto
6	Member of government	City Councillor	Introduced bird friendly guidelines and other bird-friendly initiatives to Toronto

²² The research was conducted in keeping with best practices according to Ryerson University's Research Ethics. The participants' identities were kept anonymous throughout the thesis for the purposes of not affecting their careers or personal lives. The interviews for this thesis were conducted via Skype, phone call, and in person. The locations that were picked for the interviews were quiet and free of interruptions. Most of the interviews were conducted in my home, at a time when I was usually alone.

In terms of analyzing interview data, there is no rigid definition of what makes a sound interpretation (Yin, 2011:207). Interpretation involves assigning meaning to one's collected data, not necessarily in a table or chart, but rather to "develop a comprehensive interpretation, still encompassing specific data, but whose main themes will become the basis for understanding your entire study," (Yin, 2011:207). The interview questions were designed to help answer the research questions outlined in Chapter One. Passages were selected from the interviews that could complement and supplement the existing literature, and also importantly, to explore perspectives that may otherwise have been hidden or obscured. I believe that this was the strongest way to present the collected data. It provided insights that could not have been easily or readily gathered from quantitative data.

While there do not have to be strict rules for how to interpret data, some key features of interpretation that should be considered are:

- Completeness – does the interpretation have a beginning, middle, and end?
- Fairness – would others be able to interpret this information the same way
- Empirical accuracy – does the interpretation fairly represent the data that has been collected?
- Value-added – does this interpretation contribute new information, rather than reiterating what can be found in literature relating to your topic?
- Credibility – how would ones peers in the field response to this interpretation? (Yin, 2011:207).

The existing scientific and public policy literature discusses the relevant laws to protect species at risk, and the integrity gaps and implementation failures of these laws. There is ample literature that is focused on SARA and the OESA, their histories, their strengths and weaknesses, and comparisons with other laws. Some of the literature available from NGOs or from media reports discusses litigation cases that NGOs brought forward due to these failures and integrity gaps. NGOs generate press releases, reports, outreach materials, and articles that can provide further insight on the threats to species at risk, and initiatives that are being taken by NGOs and

communities to help protect them. These materials provide insight as to what is being done by stakeholders. However, what is missing from the available literature is an in depth examination of the motivations for, and thought processes behind pursuing litigation; there is a gap in the literature for when, why, and how litigation is pursued by NGOs. The interviews provided insight into NGOs actions and their rationales for choosing to pursue litigation. The interviews also highlighted the dedicated volunteers, researchers, policy analysts who work for and with NGOs, and the passionately committed members of the community who work on behalf of species at risk. The interviews shed light on their insights, thoughts, and hopes for what species at risk protection could and should be.

This thesis goes beyond the existing literature and is novel because it draws upon so many types of materials to conduct its analysis. It incorporates interview research with people who have participated in court cases. It explores perspectives that are not usually explored in scientific research. This is a unique concept that was able to make a new contribution to the literature, and to add new and valuable material. The interviews also provided insight into what happened after the litigations, what worked well for the NGOs, and what can be done differently in the future. It also discusses the impacts and effects of the litigation cases; what the results were for the threatened species, and how litigation affected working relationships that NGOs had with businesses and government. The provincial and federal governments could make use of such material in the future, when trying to gain insight into the views of NGOs and other stakeholders, and to understand why litigation is being seen as a necessary strategy.

This thesis relied on a combination of three techniques of qualitative research methods to carry out its policy analysis, and to develop its policy recommendations in the conclusion. Policy document research was the basis of the policy analysis in Chapter Four. Doctrinal legal research and case analysis (focusing on litigation), along with interview research were used for Chapter Five. Chapter Six integrates findings from the use of the combination of research methods in its recommendations and conclusions.

Chapter Four: Legal Frameworks for Protection of Species at Risk In Canada and Ontario

4.1 Overview of Chapter

This Chapter is focused on the Canadian legal framework for protection of species at risk. The discussion begins with the federal *Species at Risk Act* (SARA), followed by a survey of the Species at Risk Conservation Cycle (including assessment, protection, recovery planning, implementation, monitoring and evaluation). Then there is an elaboration on the categories for species at risk and the decision making process of COSEWIC. Next is a brief comparison of SARA and the U.S ESA²³, and a brief look at other Canadian federal laws that are relevant to species at risk.

The second portion of the chapter discusses the history of the OESA and the committee responsible for listing species under the act, Committee on the Status of Species at Risk in Ontario (COSSARO). The history is followed by a policy evaluation of the merits and demerits of the OESA, highlighting its inadequacies for properly protecting species at risk in Ontario. Then, there is a comparison study between the U.S ESA and the OESA, analyzing a case that involves the Lake Erie Water Snake, a species at risk that was recovered in the U.S, but not in Ontario. The aim of Chapter Four is to explain the legal frameworks to protect species at risk in Canada, and in Ontario, and to highlight their strengths, drawbacks, and failures to protect species effectively. Chapter Four will lead into the discussions found in Chapter Five, which will focus on litigation on behalf of the species at risk, as well as volunteer and stewardship activities by NGOs and other stakeholders.

²³ Due to the importance of the influence of the US ESA on the Canadian SARA, there will be a brief discussion contrasting the two acts later in this Chapter (4.2.1). For reasons of scope and space, it is not possible to include a comprehensive overview of the United States legal framework for protection of species at risk in this thesis. There is substantial literature that is focused on comparisons of the United States *Endangered Species Act*, and the Canadian *Species At Risk Act*. For a representative selection of that literature, see Taylor et. al, (2005); Findlay (2009); Illical and Harrison (2007); Olive (2012); and Waples et al, (2013).

4.2 The Canadian Framework for Protection of Species At Risk

In Canada, the federal legislation for protecting species at risk is SARA. The process for species protection begins with species being assessed and identified by COSEWIC. SARA was passed in 2003 with the intention of protecting species at risk and their habitats, and creating plans for their recovery. COSEWIC bases its assessments on scientific information only, and does not consider socioeconomic factors or other benefits or drawbacks to a species' protection, and only looks at the species' extent within Canada.

4.2.1 History of COSEWIC and SARA

The idea to create an independent scientific committee to assess the status of species at risk began when the Canadian Nature Federation and World Wildlife Fund (WWF) held a national symposium in Canada in May of 1976, titled, "Canada's Threatened Species and Habitats," (Hutchings and Festa-Bianchet, 2009: 54). A recommendation was made that the Federal Provincial Wildlife Conference²⁴ should create a standing committee with representatives from the federal and provincial governments and scientific and conservation organizations to determine the status of Canadian species and their habitats. This recommendation was passed in July 1976 at the 40th annual meeting of federal and provincial wildlife directors, and a temporary committee was formed in March of 1977. The committee first met in Quebec on September 27th, 1977 (Hutchings and Festa-Bianchet, 2009: 54).

COSEWIC's initial status assessments in April 1978 were focused on birds and mammal species only (Hutchings and Festa-Bianchet, 2009: 54, 57). This range expanded in 1980 to include fishes and vascular plants, and in 1981, to include reptiles as well (Hutchings and Festa-Bianchet, 2009: 57). In 1989, amphibians were included, and in 1995, lichens, and then in 1996, molluscs were also added, and in 1997, mosses and arthropods (Hutchings and Festa-Bianchet, 2009: 57). COSEWIC's criterion for assessment of species was revised in 2001. The same categories of assessment were used after the revision, but to be listed as endangered or

threatened, species now had to have a more drastic decline in their population numbers than they previously did. Before the revision, a species had to have a 50% decline in the number of its mature individuals in the past 10 years or 3 generations. After the revision, it was changed to a 70% decline (Favaro et al, 2014). COSEWIC's categories and decision-making process are discussed below, after the Species At Risk Conservation Cycle is surveyed.

4.2.2 Species At Risk Conservation Cycle

The Species at Risk Public Registry outlines the Species at Risk Conservation Cycle. This cycle contains steps for the assessment, recovery planning, implementation, and monitoring and evaluation stages of species protection. Monitoring the progress towards the objectives and evaluation of the effectiveness of the strategies should be ongoing, and included in each part of the cycle, so there is a phase for adaption included in the cycle. The framework is guided by its foundational elements, and there is a set of guiding principles for each part of the cycle. These guidelines are meant to keep the conservation process “nationally coordinated and consistent,” (Government of Canada, 2014a).

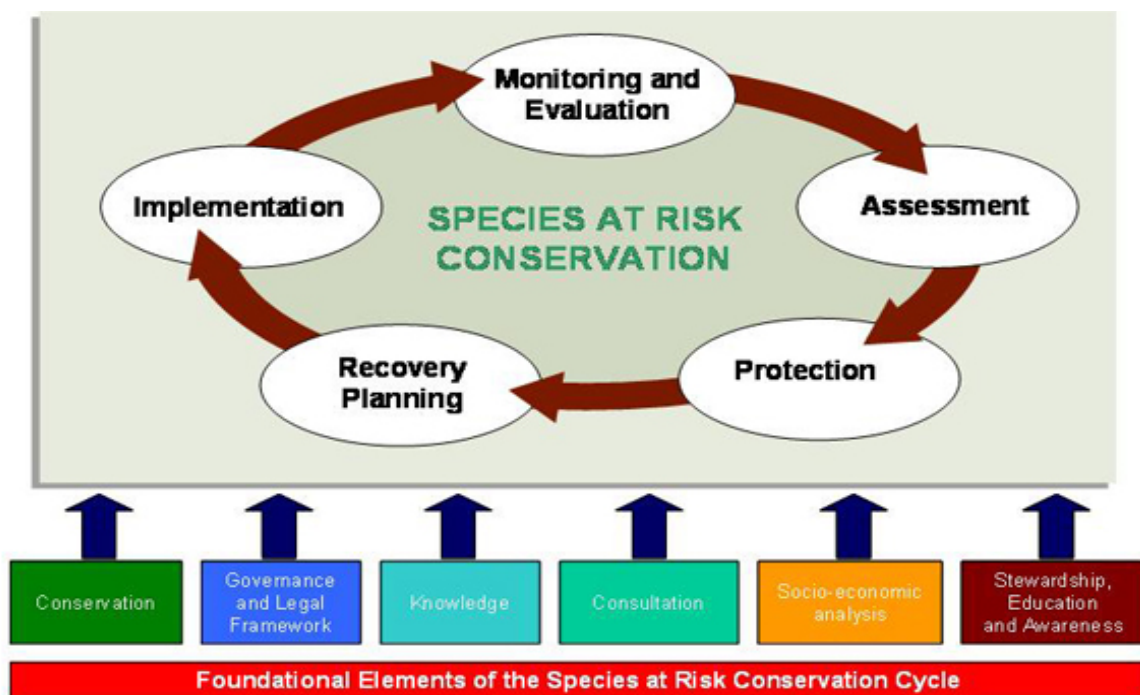


Figure 6: The Species at Risk Conservation Cycle (Species at Risk Public Registry, 2014). Reprinted from *National Framework for Species at Risk Conservation* by the Species at Risk Public Registry. Retrieved from <https://www.registrelep-sararegistry.gc.ca/>. Copyright 2014.

Components of the cycle

Assessment

The assessment process is meant to identify species at risk, or species that may become at risk in the future.

The process for assessment has two stages:

- 1) Jurisdictions should review the general status of their species, using the best available information and data, and determine which species may be at risk.
- 2) Species that may be at risk should be evaluated further using a “science-based” approach, to determine the severity of risk. The species is then classified based on its status.

The process for assessment should be based on knowledge from a variety of sources, have continuously updated data and information and timely assessments conducted by independent scientific bodies to ensure the process is transparent, and ensure “cost-effective early action,” (Government of Canada, 2014a). If there are uncertainties or lack of available information, more work should be undertaken to address the gaps. Lastly, the assessment process should consider multi-species and ecosystem approaches towards conservation. Species that reside within one ecosystem can be assessed together, and can be incorporated into multi-species or ecosystem recovery options (Government of Canada, 2014a).

Protection:

Once a species is found to be at risk, protection measures need to be put in place quickly. Protection should be applied to individuals as well as their habitats, and these measures can be put in place before a recovery strategy or plan is developed. The protection process should include establishing formal protection measures, including voluntary compliance, regulations

and enforceable measures, such as legal listing of the species. The protection decisions and actions for the species should be timely and based on the level of risk regarding its status. The protective measures should consider existing protection in federal, provincial, and territorial legislatures. Where there is overlap of the laws, the jurisdictions should decide together who will take action (Government of Canada, 2014a).

Recovery Planning:

The recovery planning process has two stages:

- 1) Goals, objectives, and strategies are developed to help recover the species and their habitats.
- 2) Specific actions and measures that will help to achieve those goals are identified. The goal of this stage is to improve the chances of the species' survival and recovery. The scientific, social, economic, and ecological factors involved are identified and set of actions for jurisdictions and stakeholders to implement is created (Government of Canada, 2014a).²⁵

Implementation:

The goal of the implementation stage is to make sure that the actions are put in place by the responsible parties, and to meet the goals identified in the recovery planning process in a timely manner. The implementation process should incorporate existing landscape, ecosystem, and species management systems where possible, and a multi-species approach can be used if it will be more effective. Collaboration between the responsible jurisdictions and parties is

²⁵ This process is meant to be knowledge-based, by identifying relevant goals and objectives based on solid scientific and technical information. Any gaps or uncertainties in data must be addressed with additional research. A variety of measures and solutions should be considered, with socio-economic factors in mind, as well as the feasibility of implementation in terms of time and effectiveness. Jurisdictions should cooperate and consult with each other, include community input where possible. Lastly, the responsible parties should commit to their actions, and governments should make their commitments for species recovery public (Government of Canada, 2014a).

encouraged to make the process more efficient and cost-effective. The jurisdictions should encourage individuals, communities, organizations, corporations, and other stakeholders to participate in conservation and stewardship activities (Government of Canada, 2014a).

Monitoring and Evaluation:

In the Monitoring and Evaluation stage, the implemented actions should be evaluated to determine whether they are working towards the outlined goals and objectives. Monitoring is done to determine changes in a species' status, and how effective the protection and recovery measures have been, and to measure overall advancements towards achieving the recovery goals. The evaluations should be based on reliable data; the steps to conduct this should be included in the recovery plans. This process may require the recovery goals, objectives, and measures to be adapted based on the results of the evaluation and consideration of other external factors, such as climate change; the protection and recovery measures may also be adapted to reflect changes in the ecosystem. When a species' situation changes enough that its conservation status should be reassessed, the appropriate body should be notified (Government of Canada, 2014a).

The foundational elements meant to guide the implementation of the cycle are defined on the Species at Risk Public Registry website:

Table 4: Species at Risk Program Foundational Elements. Adapted from *Foundational Elements* by the Species at Risk Public Registry. Retrieved from <https://www.registrelep-sararegistry.gc.ca/>, Copyright 2014.

Foundational Element	Description
Conservation	The main goal is to conserve biodiversity, and this goal should guide all decision-making and actions in any of the stages of the cycle. Preventive actions and early intervention should be imperative, to prevent species from becoming at risk.
Governance and Legal Framework	Implementation of the cycle involves recognizing the laws created by federal, provincial, and territorial governments, as well as treaties and Land Claim Agreements, and the role of Wildlife Management Boards. Jurisdictions are encouraged to “build on the Accord” and participate in “joint implementation

	approached through bi-lateral agreements,” (Species at Risk Public Registry, 2014).
Knowledge	Jurisdictions should use the best available information in their decision-making. This includes best available scientific information, Aboriginal Traditional Knowledge (ATK), and community knowledge, as well as the precautionary approach.
Consultation	Jurisdictions must consult any parties that will be affected by species at risk issues, including Aboriginal organizations and communities, and Wildlife Management Boards.
Socio-economic Analysis	Socio-economic information should be used in decision-making as appropriate, when it comes to protecting, as well as in the recovery planning and implementation stages, and when these decisions will likely have significant impacts. This analysis should involve cooperating and sharing of information across participating jurisdictions, and if appropriate, be subject to peer review.
Stewardship, Education, and Awareness	Jurisdictions should promote stewardship and voluntary actions for protection and recovery of species at risk. This should be done by collaborating with partners to increase awareness and participation of residents, through measures such as education programs and incentives.

4.2.3 Categories and Decision Making Process of COSEWIC

COSEWIC’s decision-making process includes criteria for which species can be assessed, and categories relating to the status of species. Two tables are included here to illustrate those components of the decision making process (Table 4 and Table 5). COSEWIC’s assessments are to be based on the best available information when determining the status of wildlife species; this includes scientific information, Aboriginal Traditional Knowledge (ATK)²⁶, and community knowledge²⁷ (Hutchings and Festa-Bianchet, 2009: 57).

²⁶ ATK (Aboriginal Traditional Knowledge) is referring to “the collective knowledge systems unique to the First Peoples of Turtle Island,” (Chiefs of Ontario, n.d). Other words used to describe ATK are “traditional knowledge”, “Indigenous knowledge”, or “naturalized knowledge.” ATK refers to “those Indigenous systems of knowledge, as well as cultural practices and methodologies related to the production of knowledge based on traditional belief systems, relationships to the environment, and community practices,” (Chiefs of Ontario, n.d).

²⁷ COSEWIC defines community knowledge as “Information derived from observation, personal experience and culture informing about a species (or a group of species) current and/or past

The following criteria determines which types of species can be assessed:

Table 5: Criteria for Species Assessment (via Government of Canada, 2017). Reprinted from *COSEWIC Assessment Process, Categories and Guidelines*, by COSEWIC. Retrieved from COSWEIC.gc.ca, Copyright 2015.

Criteria	Definition
a) Taxonomic Validity	COSEWIC considers species and subspecies or varieties that are established to be valid in either published works on taxonomy or other peer reviewed documents from taxonomic specialists. COSEWIC does not consider other designatable units unless they have been proven to be “genetically distinct, separated by a major range disjunction, or biogeographically distinct,” (Government of Canada, 2017).
b) Native wildlife Species	Only wildlife species can be considered for listing. A native wildlife species is defined as a wildlife species that naturally occurs in Canada or has expanded its range into Canada from its natural region, without human interference, and must have resided here for at least 50 years. The species must also have produced viable populations. SARA states that a wildlife species is assumed to have been residing in Canada for 50 years, if there is no evidence to prove otherwise.
c) Regularity of occurrence	Only wildlife species that occur or have occurred regularly in the past will be considered. This includes species that migrate, but not vagrants.
d) Special Cases	A taxon can be considered eligible if there are strong reasons for its conservation, such as a high risk of extinction. A Species that is not eligible but is at risk in its range outside of Canada may be considered. ²⁸

The following table summarizes the terms COSEWIC uses for species at risk categories (Government of Canada, 2016a):

population distribution and abundance), habitat use and availability, life history traits, ecological relationships and potential threats to the species survival," (Government of Canada, 2016f).

Table 6: SARA Terminology for species at risk categories. Reprinted from *COSEWIC wildlife species status categories and definitions* by the Species at Risk Public Registry. Retrieved from <https://www.registrelep-sararegistry.gc.ca/>. Copyright 2016.

Term	Definition
Wildlife Species	A species, subspecies, variety, or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus, that is wild by nature and it is either native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.
Extinct (X)	A wildlife species that no longer exists.
Extirpated (XT)	A wildlife species that no longer exists in the wild in Canada but exists elsewhere.
Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
Special Concern (SC)	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
Not at Risk (NAR)	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
Data Deficient (DD)	A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or b) to permit an assessment of the wildlife species' risk of extinction.

Species' designations are decided at Species Assessment Meetings, where five factors are considered by the committee members for the status designation:

- i. "Eligibility of species to be assessed
- ii. Sufficiency of information to determine status
- iii. Adequacy of the species assessment report
- iv. Preliminary designation based on the quantitative assessment
- v. Evaluation of preliminary designation leading to final designation (Lukey and Crawford, 2009: 959-960)."

The quantitative assessments are derived from the revised Red List and Criteria and Categories that were created by the IUCN (Lukey and Crawford, 2009: 960). There are two phases to determine a species' status. Phase I includes five quantitative criteria (A-E), and Phase II is based on four modifying criteria (F-I) (Lukey and Crawford, 2009: 960). The criteria are: A) a reduction in the species' population size; B) a reduction in its geographic range; C) if the species' population size is small; or D) extremely small, and lastly; E) quantitative estimates of its risk of extinction. The species is then assessed according to the criterion that shows the highest level of risk (Waples et al, 2013). After the two steps are completed, the species is designated a status (Lukey and Crawford, 2009: 960). Then the committee makes a decision based on the information and analysis that was presented, and determines if the status category that is "suggested by the application of the criteria and guidelines is consistent with the definition of the status category used by COSEWIC," (Lukey and Crawford, 2009: 959). If it is not consistent, then "the status representing the most appropriate definition will take precedence, and any variance between the status definition and the quantitative criteria will be explained," (Lukey and Crawford, 2009: 959).

Committee on the Status of Endangered Wildlife in Canada (COSEWIC) decision-making process, from candidate species to final designation, showing the five quantitative criteria in Phase I (A–E) and the four modifying criteria in Phase II (F–I). Risk designation codes are as follows: DD, Data Deficient; NR, Not at Risk; SC, Special Concern; TH, Threatened; EN, Endangered. Broken lines represent decision-making based on nonquantitative criteria based on expert opinion (i.e., criteria that could not be effectively represented in the computer algorithm of the COSEWIC protocol used in this study).

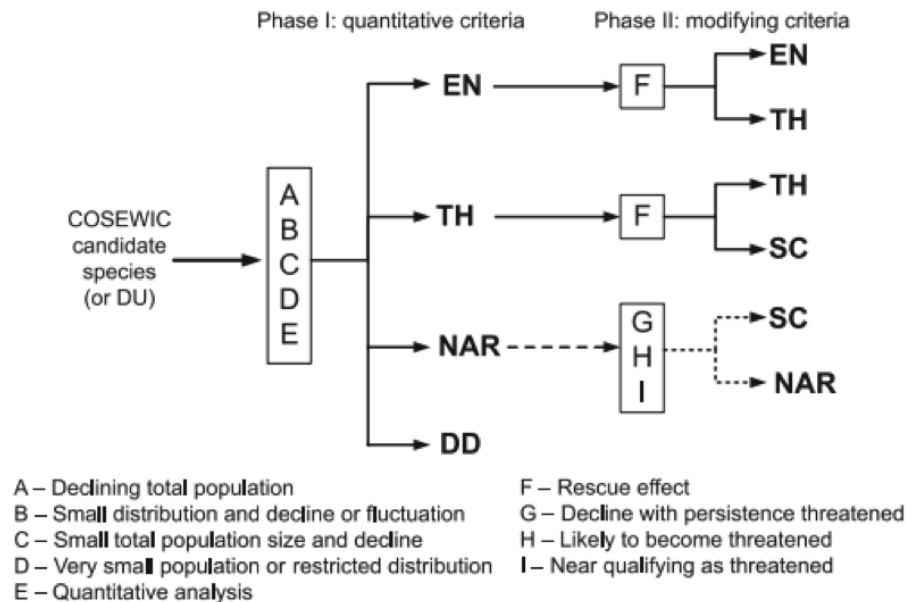


Figure 7: COSEWIC’s decision-making process for species at risk categorization. Reprinted from *Consistency of COSEWIC species at risk designations: freshwater fishes as a case study* by Lukey and Crawford. Retrieved from www.nrcresearchpress.com, Copyright 2009.

When SARA came into force in 2003, all of the 233 species that COSEWIC had deemed to be at risk from 1978 to 2001 were automatically listed, in compliance with section 42(2) of the act. By January of 2013, COSEWIC had assessed 668 species to be at risk, with 456 of them considered endangered or threatened. Of those, 33% were plants, and 67% were animals (Waples et al, 2013).

COSEWIC is responsible for selecting species for assessment under section 15(1)(b) of SARA. COSEWIC has a systematic process to create new status reports, which it does by

selecting from a list of candidate species, those that are deemed to be of the highest priority (Waples et al, 2013: 728, Mooers et al, 2010). To prioritize the list of potential species to be considered, COSEWIC considers the risk of extinction to the species, its taxonomic distinctiveness, global distribution, and how much of its range occurs in Canada. This list is made almost entirely from the lists provided by the Species Specialist Subcommittees (SSC). The public can recommend species to be considered, but it is rare for that to happen (Waples et al, 2013).

The 31 members of COSEWIC and the members of the ATK subcommittee are appointed based on their expertise (Waples et al, 2013). The jurisdictional members of COSEWIC are nominated by federal, provincial, or territorial government ministers. The co-chairs of the SSCs, and any non-government scientist members are nominated by COSEWIC through a public competition, and ATK subcommittee members are nominated by 5 national Aboriginal organizations. Most of the SSC co-chairs and non-government scientist members are from university faculties; others are self-employed independent scientists, or employees of NGOs. Though COSEWIC includes members of government in its organizations, as jurisdictions are given representation, the status assessments are made independent from the government, as COSEWIC's members are primarily biologists who share their knowledge and expertise but do not represent their jurisdiction (Waples et al, 2013). Another important fact is that the species' status assessment that is provided to the federal government is based on the best available science, and does not consider any socio-economic or political factors in its recommendation (Hutchings and Festa-Bianchet, 2009: 57).

Around 40 species are assessed at each of COSEWIC's twice yearly meetings. (Waples et al, 2013). Most of the preliminary scientific analyses are prepared by the 10 SSCs. The SSC members are experts in one or more fields or genetics, population biology, taxonomy, ecology, or life history for a specific taxonomic group. The members are not supposed to consider social, economic, or political, or personal factors, but are to use their "best professional judgement and knowledge to oversee the preparation, by third-party contractors, of reports for COSEWIC" and to review, revise, and present the reports and the SSC recommendations to COSEWIC (Waples

et al, 2013: 727). COSEWIC, in its decision-making process, does not consider the feasibility of the recovery of a species, nor the costs associated with recovery, nor potential social or political implications (Mooers et al, 2010).

The reports are first reviewed by the jurisdictions the species reside in, such as federal agencies, or provinces and territories, and then by scientists that work in the COSEWIC subcommittees for the relevant species and holders of aboriginal traditional knowledge (Mooers et al, 2010). The draft reports have to go through detailed and open external review by the jurisdictions (government, aboriginal wildlife management boards, etc.), self-employed species experts, university scientists, and industry-employed biologists, all of which can take 1-2 years (Waples et al, 2013). A species' status is determined after a vote at a COSEWIC species assessment meeting, where two-thirds represents a majority (Hutchings and Festa-Bianchet, 2009: 57). A maximum of 31 votes can be cast: i) one for each of the four federal government agencies; ii) one each for the 10 provinces and 3 territories; iii) one for each of the 10 Species Specialist subcommittees; iv) one for the ATK subcommittee; and iv) one for each of the 3 non-government science members (Hutchings and Festa-Bianchet, 2009: 57). The subcommittee makes a final draft of recommendations that are discussed by all the members of COSEWIC, after which the committee will present an official status recommendation for the species to the federal government (Mooers et al, 2010). COSEWIC makes its status recommendations public on its website after its assessment meetings (Mooers et al, 2010).

4.2.4 SARA and The Species Listing Process

4.2.4.1 Overview of SARA

SARA was passed in 2002 and came into effect in 2003. The act states, “wildlife, in all its forms, has value in itself and is valued by Canadians for aesthetic, cultural, spiritual, recreational, educational, historical, medical, ecological and scientific reasons,” (SARA, 2002). SARA's process aims to work through “science-based prioritization and assessment of wildlife species independent of legal listing decisions,” (Mooers et al, 2010: 844).

The table included here provides an overview of the crucial features and aspects of SARA.

Table 7: A summary of SARA. Adapted from *Environmental Law and Policy in the Canadian Context* by Greenbaum and Wellington, 2010: 484.

A summary of *SARA* (Bill C-5) reads as follows:
The purposes of this enactment are to prevent Canadian indigenous species, subspecies and distinct populations of wildlife from becoming extirpated or extinct, to provide for the recovery of endangered or threatened species, to encourage the management of other species to prevent them from becoming at risk.
This enactment establishes the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as an independent body of experts responsible for assessing and identifying species at risk.
It provides that COSEWIC's assessments are to be reported to the Minister of the Environment and to the Canadian Endangered Species Conservation Council and it authorizes the Governor in Council to establish by regulation the official list of species at risk based on that process.
It creates prohibitions to protect listed threatened and endangered species and their critical habitat.
It recognizes that compensation may be needed to ensure fairness following the imposition of the critical habitat prohibitions.
It creates a public registry to assist in making documents under the Act more accessible to the public.
It is consistent with Aboriginal and treaty rights and respects the authority of other federal ministers and provincial governments.

4.2.4.2 The Species Listing Process

The SARA listing process begins with an assessment of the species considered for listing by COSEWIC, which determines the category a species will fall under. Once COSEWIC designates a status for a species, that recommendation is then passed on to the Minister of Environment. Legally, COSEWIC's recommendations do not imply that the federal government has to list a species. The government can choose to do one of the following after receiving a recommendation for listing: i) accept COSEWIC's recommendation to list the species, ii) decline the recommendation, with the responsible minister providing their reasons for doing so, or iii)

return the report to COSEWIC with a request for more information. When deciding whether or not to list a species, the federal government must consider input gathered from consultations with members of the public as well as internal economic assessments, and the scientific assessment provided by COSEWIC (Mooers et al, 2010: 844).

The laws of SARA apply to federal lands, waters, and species. Once a species is listed, it becomes illegal to kill or harm the species on federal lands. Under SARA, the species' critical habitat must also be identified and protected, which is a crucial factor in its recovery. Provinces and territories have the responsibility to protect wildlife species on their own lands, but aquatic species and migratory birds fall under the responsibility of the federal government.

After a species is listed, the government is required to create a recovery strategy and action plan within a certain timeframe, dependant on the status of the species and when it was listed. For species that are not at "immediate risk of extinction or extirpation," but fall under a designation of "special concern," SARA requires the government to create a management plan (Favaro et al, 2014: 2). These species do not receive full protection as threatened or endangered species do (Favaro et al, 2014).

A recovery strategy outlines the major needs of and threats to a species, and broad objectives for the recovery of the population and distribution of individuals (Mooers et al, 2010). The action plan defines specific goals and recovery measures and evaluates the "potential socioeconomic impacts" of those actions (Mooers et al, 2010: 845). The action plan must identify the critical habitat, which is defined under SARA as "the habitat necessary for a listed species' survival or recovery," (Mooers et al, 2010: 845). Once this critical habitat has been identified, the federal government must protect said habitat on its lands, which makes up just 4% of Canada's 10 provinces as well as most of the 3 northern territories. The government must also report on the progress of the species' recovery every 5 years. COSEWIC reassesses wildlife species every 10 years (Mooers et al, 2010).

The species listing process under SARA

SARA separates the scientific assessment process from the listing decision. This approach ensures that scientists can provide fully independent recommendations, and that decisions affecting Canadians are made by elected officials who can be held accountable for those decisions.

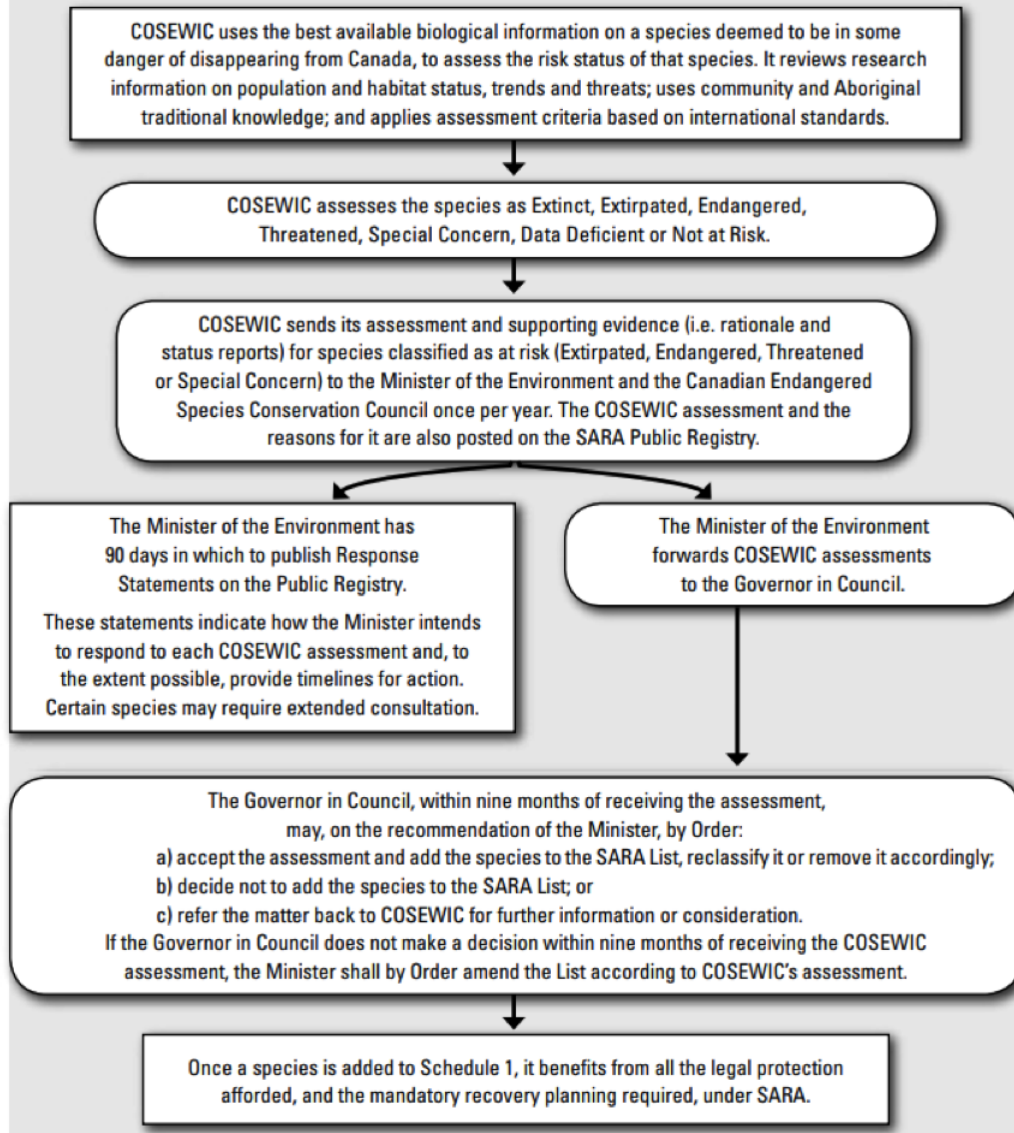


Figure 8. The Species Listing Process under SARA. Reprinted from *Consultation on amending the list of species under the Species at Risk Act: terrestrial species by Environment Canada*. Retrieved from Scholars Portal Book, Copyright 2006.

4.3 Policy Evaluation of SARA

4.3.1 Context

SARA was purposely created to be different from the U.S ESA in the way it functions. The act was created decades after the U.S ESA, and Canadian lawmakers considered the ESA to be “heavy handed” and unfair towards private landowners. Its “regulatory style” was not seen favourably either, so SARA was created to protect species on federal lands only (Olive, 2012; 88). Canadian provinces’ have historically enjoyed jurisdiction over most of the natural resources in their areas, including towards species (Olive, 2012). When SARA was introduced in parliament, Bob Mills, a Member of Parliament (MP) who wanted to have landowners on the government’s side, stated, “we cannot expect landowners to absorb all of the cost of protecting something that one hundred percent of us want to protect,” (Mills 2001). Another MP, Joe Comartin of the New Democratic Party stated, “landowners must be assured that they are not facing personal losses if a species is designated on their property,” (Comartin 2001).

4.3.2 Findings of Integrity Gaps

The purpose of SARA was to create an act that would enable the listing of a species on the basis of the scientific information that determined its status (Mooers et al, 2010). However, SARA audits and analysis of trends in listing have revealed gaps in the listing process. Another cause for concern is that SARA’s assessments use purely scientific concerns where it seems more appropriate, such as in the listing assessments, identifying critical habitat, and the “determination of the feasibility of recovery,” (Mooers et al, 2010: 847). However, in other sections, SARA allows for the consideration for economic costs and/or benefits (Mooers et al, 2010).

Existing literature has identified gaps within the process of protecting species in Canada, and a lack of implementation of SARA’s legal requirements; some of these findings will be discussed in this section. Analysis of the listing process has determined that harvested species

residing in the northern territories are less likely to be listed; the same was found for species that are threatened by resource use, including those that are unintentionally harvested. Another major finding is that recovery strategies and action plans are usually not released by the deadlines mentioned in SARA, meaning that species may not be actively protected and recovering, even after they are listed. Since COSEWIC began its work in 1977, species that have been assessed more than once have moved to a status of more risk almost twice as often as they have moved to a status of less risk (Mooers et al, 2010).

Challenges with Listing and Regulatory Impact Assessment Statement (RIAS)

As of December 2007, the federal government had chosen to not list 23% (60 of 252) species that were recommended by COSEWIC since the introduction of SARA in 2002 (Mooers et al, 2010). Since 2003, COSEWIC had recommended 110 fish species for listing. By the end of 2010, 54 of them received a listing decision with economic data (Schultz et al, 2013: 127). Another concern is the deadline to make a listing decision, which is 9 months, but this timeline can and often has been stretched. Of the 176 wildlife species that were listed as threatened or endangered under SARA when it was enacted on June 5th, 2003, all of the species should have had recovery strategies submitted by June 5th, 2007. However that was not the case, with less than half of them being completed by 2009 (Mooers et al, 2010).

The fact that most marine species have historically been denied listing demonstrates that economic and political factors take precedence over scientific considerations in listing matters (David Suzuki Foundation, 2007)²⁹. 43% of marine fishes (9 out of 21) and 87% of freshwater fishes (29 out of 33) that were recommended by COSEWIC for listing were listed under SARA by the end of 2010. This may be due to the fact that the estimated cost of listing marine species

²⁹ The majority of species that were denied listing under SARA are northern or marine species (David Suzuki, 2007). One report found that six out of eleven terrestrial mammals recommended for protection under SARA were not listed, five of which were northern species. Similarly, six out of nineteen marine mammals recommended were not listed, and five of those were northern species. Also ten out of eleven mammal fish species were denied listing (David Suzuki, 2007).

was higher than freshwater species³⁰. Increasing costs decreased chances of being listed, as did inhabiting marine habitats; however the costs affected their chances more; “any predicted cost was associated with the rejection of listing recommendations for marine fish species,” (Schultz et al, 2013: 129). The species’ threat status did not affect their chances of being listed (Schultz et al, 2013: 129). Benefits and drawbacks for listed taxa were qualitatively mentioned for many species, however the quantitative economic benefits were only provided for one species (the Chinook salmon). This indicates that economics factor more heavily for listing decisions for some species more than others (Schultz et al, 2013: 129).

If the listing of a species is expected to affect industry or the economy, the government tends to focus on “short-term, regional economic impacts,” such as those on local jobs and businesses, and regional impacts, rather than long-term effects or benefits to the society (Mooers et al, 2010: 846). The chances of a species being listed were found to be less “if they were harvested or had commercial or subsistence harvesting as an explicitly identified threat,” (Findlay et al, 2009: 1609). Another finding was that more plants and herpetofauna were listed under SARA, compared to marine fish and terrestrial mammals and harvested fish and mammals were less likely to be listed than non-harvested species (Mooers et al, 2007: 572-573). In fact, 93% of non-harvested fish and mammal species were listed, as were 17% of harvested species recommended by COSEWIC for listing (David Suzuki Foundation, 2007).

The legal listing process typically includes a regulatory impact analysis statement (RIAS), considered to be one of the weaknesses of SARA (Mooers et al, 2007: 574; Mooers et al, 2010). SARA does not specifically discuss the consideration of economic factors during the listing stage, but the Canadian federal government’s policy is to review the economic implications of any regulatory change. The process of producing an RIAS is carried out by the federal government under the *Financial Administration Act*. The RIAS usually takes place in the 9 months preceding a listing decision, before a recovery strategy or action plan is created.

³⁰ Marine species that are used by Aboriginal peoples have also been denied protection under SARA, however, most of the freshwater species that are essential to Aboriginal uses were listed. This means that Aboriginal rights are being considered when determining listing for marine species, however not for freshwater species.

Government policy analysts develop an RIAS before making a decision regarding listing, and they work with scientists and resource managers to come up with “plausible scenarios for economic costs and benefits and impact analyses on the basis of the best available information,” (Mooers et al, 2010: 846). The amount of time spent analyzing depends on the potential economic effects of the changes. The government is required to consider the economic value of “public environmental goods,” as part of its analysis (Mooers et al, 2010: 846). The government may conduct an economic impact analysis, which looks at the effects that the listing will have on jobs and the regional economy. Economic concerns have been presented as a reason in 50% of the instances (10/20) where species were denied listing (Mooers et al, 2010).

Policy evaluation of the RIAS process indicates that there is insufficient effort put into estimating the benefits of listing species, and undue weight given to economic costs. One example is the Porbeagle Shark, *Lamna nasus*. The species has gone through an almost 90% reduction in population over the years. In 2006, the decision was made not to list the species, despite there being a low estimated cost of listing (approximately \$900,000-\$1.75 million over 10 years). The denial was due to the estimated costs that would be faced by a community that derived 2% of its overall pool of economic resources from harvesting the shark. Factored into the calculation was the potential loss of a maximum of eight jobs (with two fishers obtaining one quarter of their gross revenue from the porbeagle shark fishery). Ultimately, commentators suggest that there was a “non-use value” (the costs of not using the species for economic gain) for the species of tens of millions dollars per year (Mooers et al, 2010: 846). On the basis of situations such as the Porbeagle Shark, Mooers et al (2010) argue that the incorporation of economic analysis into the listing process of SARA is problematic because it is, in effect, “embedded in a non-scientific policy-based framework,” (Mooers et al, 2010: 846).³¹ Some researchers argue that SARA should be revised so that socioeconomic analysis should take place

³¹ In the Canadian context, commentators have reflected upon the influence of the historical example of the high profile loss of the entire Newfoundland northern Atlantic Cod (*Gadus morhua*) fishery (Mooers et al, 2007: 574).

when it is being decided how to protect a species and its habitat, not when a species is up for listing (Findlay et al, 2009).

Challenges of Recovery and Habitat Protection

Identifying critical habitat is key for the recovery of endangered and threatened species. Although species and their residences are protected automatically after being listed, identifying their habitat is crucial to implementing recovery measures. Under SARA, there is a timeline for creating a recovery strategy; however, there are no deadlines for creating a recovery action plan. Also, although SARA states that critical habitat must be defined for every species, that had only been done for 23 of the 104 species with recovery strategies, meaning for only 23 of the total 447 of listed species (Mooers et al, 2010).

Problems in the recovery stage arise when it is unknown whether the species' recovery goals are coming from scientific or socio-economic factors. The two factors that are really important when it comes to species recovery as a whole are the population and distribution of the species. Mooers et al (2010:846) argue that certain biological terms must be defined specifically in order to have "transparent conservation decisions," especially words such as "survival" and "recovery," which can mean many different things in the context of a recovery strategy. The authors point out that critical habitat is defined as the habitat that is necessary for the survival or recovery of a listed wildlife species, and the quantity and location of said critical habitat depends on how the terms "survival" and "recovery" are interpreted (Mooers et al, 2010).

Recovery action plans are even more rarely completed than recovery plans. Action plans must be completed after the recovery strategies and contain more specific steps and activities that will be undertaken to realize the more general goals that were laid out in the recovery strategies. Many species have "voluntary recovery activities" to help restore populations (Mooers et al, 2010: 847). Until 2010, only one species, the Banff Springs Snail (*Physella johnsoni*), whose entire range falls within a national park, had an accepted action plan. If critical habitat has not been defined in the recovery strategy, then there are no legal timelines before which the

government has to identify and protect the critical habitat, because the action plans have no deadline by which they must be completed. If the habitat has not been defined, this means that even if the species is listed, and recovery is planned, there is no guarantee that this will materialize into a tangible plan (Mooers et al, 2010).

Another serious concern is that activities that may harm species are permitted when they are not believed to jeopardize the survival or recovery of the species, thus providing another reason for said terms to be clearly defined. IUCN criteria defines survival as the species having a greater than 90% chance of persisting for at least 100 years. The Canadian government has suggested policies where survival would be defined as maintaining the current population in the “short term,” which creates a question of whether the 100 years benchmark would fall within that timeframe. Species that are already at risk of extinction have little chance of surviving in the long-term if the government is only attempting to “maintain” its current population (Mooers et al, 2010). Canadian policy has generally described recovery as being “long term persistence,” or a situation where decline of the population is “arrested or reversed,” (Mooers et al, 2010: 847). There is a requirement for specific terminology in this case, as the word “or” could lead policymakers to choose the easier achievement (arresting decline) as the default choice; the meaning of the word “long term” should also be clarified (Mooers et al, 2010). However, recovery of a species should include higher-reaching goals in terms of the population size and distribution that is being aimed for (Mooers et al, 2010).

Problems of Downlisting and Declining Species

Favaro et al (2014) conducted a study to examine the trends over the years in the status of species that were assessed by COSEWIC two or more times, to determine how many species reached COSEWIC’s designation of “not at risk” and to conclude whether species are on average improving or deteriorating or remaining stable (Favaro et al, 2014; 2).

Of the 499 species that had been assessed by COSEWIC between 1977 and December 2013, 221 species had a designation of threatened, endangered, or extirpated under SARA.

Critical habitat had not been fully identified for more than half of those species (Favaro et al, 2014). Only 20 species were shown to have increased population sizes in that timeframe, but this was due to increased sampling that found more populations, not due to actual increases in the population numbers. Across all taxonomic groups, except marine fish, most of the listed species' status worsened or remained the same (Favaro et al, 2014).

Interestingly, a species' final status usually depended on its first assessment (Favaro et al, 2014). Species that were deemed to be not at risk, and endangered or extirpated species mostly stayed at the same designation. Species that were determined to be of special concern or threatened deteriorated in status; the status of 47% of species that were previously categorized as "special concern" decreased. Only 5.4% or 20 of the species moved to the "not at risk" category after being in an at-risk category, and 5 of those were due to increased sampling and finding of more individuals. Species also had a greater chance of decreasing in status as more generations passed since their initial listing. For each generation since listing, a species' odds ranged from an improvement in its status by 1% to decreasing in status by 12% (Favaro et al, 2014).

The most common finding in the assessment was that species on the whole remained the same, however almost twice as many species declined compared to those that recovered. This is alarming because species that are assessed to be threatened or endangered already face a higher risk of extinction or extirpation, so maintaining their status is not a positive outcome. In addition, a species' population must decrease substantially for its status to change, so a species' population size can be changing without its status changing under COSEWIC. Even a status of "not at risk" does not mean that a species has recovered to its previous size, only that it is not at an "elevated risk of extinction or extirpation," (Favaro et al, 2014: 7). Species that fall under the "not at risk" category can still have decreased and decreasing population sizes (Favaro et al, 2014).

Another study (Lukey and Crawford, 2009) examined 54 COSEWIC designations and assessments for freshwater fishes (5 were found to be data deficient, which left 49) from 2000 to 2007 found that 35.1% of designations were downlisted from a status of endangered to

threatened without sufficient explanation as to why (Lukey and Crawford, 2009: 959, 961). This suggests a problem in COSEWIC's system for assessments.

Another concern is the lack of protection provided for species of "special concern". Firstly, since species of "special concern" generally deteriorate more than they improve in status, there should be stronger protections for those species. Second, there should be a stronger focus on preventing species from becoming at-risk, since the outcomes of at-risk species have not been positive (Favaro et al, 2014).

Litigation and Emergency Orders Under SARA

One study found that the timing of the identification of critical habitat for species was correlated with the release of Federal Court decisions where the implementation of SARA for recovery planning was challenged. These cases were brought forward by NGOs who believed that species were not being protected as is legally required under SARA, and that their critical habitat was not identified in a timely manner. As a result of the court cases, the requirements under SARA were clarified, and the scientific information that was included in the recovery strategies was strengthened (Taylor and Pinkus, 2013, n.p). The act of NGOs intervening through legal means "facilitated nationwide compliance with federal endangered species legislation, indicating that both NGOs and independent recovery team members play an important role in the ongoing evolution of recovery planning for species at risk in Canada," (Taylor and Pinkus, 2013, n.p). The intervention by the NGOs is what led to the clarifying of SARA's requirements and implementation of the law (Taylor and Pinkus, 2013).

Another weak aspect of SARA's implementation is the federal government's unwillingness to use the "safety net"³² function when required, which has never been used till

³² There are two "safety nets" provided by SARA. They are the "basic prohibitions safety net (federal action to protect a species or its residence) and the critical habitat safety net (federal action to protect critical habitat)," (Smallwood, 2003).

date. The Federal Government has issued two emergency orders³³³⁴ thus far. One is *Emergency Order for the Protection of the Greater Sage-Grouse* that came into effect on February 18, 2014.

The Greater Sage-Grouse was once an abundant species across the prairies and within inner British Columbia; however, it has been on the endangered species list since 1998 (Page et al, n.d). This bird is now found in remote areas in southeastern Alberta and in northwestern Saskatchewan. Its major threats have come from oil and gas development in the area, and researchers estimated at the time that the bird could disappear from Alberta within the next six years if there was not stronger protection for its habitat.

In 2009, Ecojustice represented Alberta Wilderness Association, Federation of Alberta Naturalists, Grasslands Naturalists, Nature Saskatchewan and Wilderness Committee in a case against the federal Minister of Environment, who did not have the Sage-Grouse's habitat identified under a recovery plan as required under SARA. When the case was heard in court, it was revealed that the Sage-Grouse's population had declined 20% since 2008. The Federal Court ruled in favour of the NGOs in July 2009, and the Minister was ordered to recreate the recovery strategy to identify the Sage-Grouse's critical habitat. This case demonstrated the possibility for public-interest groups, including NGOs, and environmental lawyers, to "force the government to obey its own laws," (Page et al, n.d).

In 2012, Ecojustice again represented conservation groups (Alberta Wilderness Association, Wilderness Committee, Nature Saskatchewan and Grasslands Naturalists) in

³³ Federal Cabinet can "make an emergency order to provide for the protection of a listed wildlife species" if the competent minister makes a recommendation (Smallwood, 2003). The competent minister must "make the recommendation if her or she is of the opinion that the species faces imminent threats to its survival or recovery (s. 80 (1)). Before making the recommendation, the competent minister must consult every other competent minister (s. 80 (2))." (Smallwood, 2003).

³⁴ The purposes of an emergency order are to: i) "Identify habitat that is necessary for the survival or recovery of the species in the area to which the emergency order relates;" and i) "Include provisions requiring the doing of things that protect the species and that habitat and provisions prohibiting activities that may adversely affect the species and that habitat," (Smallwood, 2003).

Federal Court, this time challenging the Minister of Environment for failing to effectively protect the Greater Sage-Grouse as required under SARA (Robinson et al, n.d). The conservation groups wanted a court order that would force the Minister to make recommendations to Cabinet to release an emergency order to protect the species. The federal government claimed that the Minister of Environment's plans for protecting the Sage-Grouse were confidential; the NGOs claimed that it was an example of the lack of transparency by the federal government, about its failure to protect the environment (Robinson et al, n.d).

As a result of the court case, the Federal Court of Appeal ordered the federal government to publicize the Minister's decision on whether the Sage-Grouse would receive emergency protection (Robinson et al, n.d). The federal government then issued an emergency order in 2013 (Robinson et al, n.d). In the emergency order, the Government states that its aim was to provide the "best protection" (Government of Canada, 2016b) for the Sage-Grouse, while ensuring that the effects on landowners and the agriculture industry remain at a minimum. The emergency order's prohibitions apply to areas of the species' habitat that fall on federal and provincial crown lands in southeastern Alberta and southwestern Saskatchewan³⁵ (Government of Canada, 2016b).

Ecojustice's motivation for getting involved was that this species is nearing extinction, and requires "special protection," and that if an endangered species is facing serious threats, then the federal government must be held responsible for its inaction (Robinson et al, n.d). Ecojustice also stated that the federal government must be transparent about its decisions pertaining to the environment and species at risk. This court case was the first time that the federal government announced emergency protections for an endangered species. In addition, the Court of Appeal's decision is precedent-setting; According to Ecojustice, this victory proves that "courts can review ministerial decisions, that ministers must be open and transparent about their decisions, and that they cannot hide behind a vague and unfounded claim of cabinet confidence in an attempt to avoid judicial review," (Robinson et al, n.d).

³⁵ The full list of prohibited activities can be found on the Species at Risk Public Registry's page for the Emergency Order, *Emergency Order Summary – Greater Sage-Grouse*.

Ecojustice was able to report in 2016, that as a result of this emergency protection order, the Sage-Grouses' population began to grow in Alberta and Saskatchewan, after declining for decades. In 2014, the Sage-Grouse population had reached its lowest levels ever in the two provinces, and it was feared that the species would become extinct. Ecojustice lawyer Sean Nixon stated that the species' growth in the following two years demonstrated that "federal intervention under the *Species at Risk Act* can help bring endangered species back from the brink of extinction," (Ecojustice, 2016). In 2012, 14 male Sage-Grouse were found in Alberta, and 6 males in Saskatchewan. In 2015, 35 males were found in Alberta, and 20 in Saskatchewan, and in 2016, 46 were found in Alberta, and 33 in Saskatchewan. The strong growth of the Sage-Grouse can be attributed to the federal intervention, as well as two years of good spring nesting conditions for the bird. Experts now estimate that there are at least 200 Sage-Grouse in Canada (Ecojustice, 2016). This case is an example of the result of NGO intervention for species at risk that are not receiving sufficient protection in their respective provinces. Without the NGO intervention, the federal government would not have felt pressured to issue an emergency order. The outcome of this case should encourage federal government to issue safety net orders and emergency protection orders in situations where provinces are not doing enough for species at risk.

Another emergency order was issued due to a second court case; however, this one took place in Quebec. In *Centre Québécois du droit de l'environnement v. Canada (Environnement)*, 2015 FC 773 (*CanLII*), two non-profit organizations, the Centre Québécois Du Droit De L'environnement and Nature Québec, challenged a decision from the Minister of Environment made on March 27, 2014. In this decision, the Minister refused to make recommendations to the Governor in Council to issue an emergency order for the Western Chorus Frog under section 80 of SARA (Fluker, 2015). In the Federal Court judgement, Justice Martineau ordered the Minister of Environment to reconsider making a recommendation (Fluker, 2015). Since the frog's habitats fall on provincial lands, the strong protections it would be awarded under SARA would not apply without an order issued by the Governor in Council. The largest Canadian population for the species is in La Prairie, a suburb of Montreal.

The Western Chorus Frog (GLSLCS) was listed as a threatened species under SARA in 2010. The major threats faced by this species come from habitat loss and degradation due to urban development, agriculture, climate change, pesticide and fertilizer use, expansion of linear infrastructure, and habitat succession (Government of Canada, 2016e).

The court case was regarding a housing development that was to be built in an area of the frog's habitat in La Prairie (Fluker, 2015). In May 2013, Nature Quebec requested the Minister of Environment to make a recommendation to the Governor in Council to issue an emergency protection for the La Prairie population of the frog. The Minister refused to do so, stating that the frog's survival and recovery is not being threatened. Nature Quebec then began a judicial review application in Federal Court against the Minister. Justice Martineau did not agree with the Minister that this request was unreasonable, but he did not command the Minister to make the recommendation either; he instead asked her to reconsider her refusal to do so. While the decision to issue an emergency order is up to the discretion of the Governor Council under section 80 of SARA, section 80(2) does require the Minister to make a recommendation if they believe that the species faces a strong threat to its survival or recovery. Litigation cases since have been regarding the Minister's refusal to do so. The scientific evidence presented for the Western Chorus Frog was similar to the case of the Sage-Grouse, which had strong proof to show that the species would become extinct if immediate action was not undertaken (Fluker, 2015).

In 2016, the federal government issued the *Emergency Order for the protection of the Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield Population (GLSLCS))* (Government of Canada, 2016e). This order came into effect on July 8 2016. Its purpose was to address the threats faced by the Western Chorus Frog and provided protection for its populations. The emergency order covers approximately 2 km² of partially developed land in Quebec, specifically in La Prairie, Candiac, and Saint-Philippe. The prohibited acts in those areas are

meant to prevent habitat loss and degradation, and to prohibit harmful acts that would affect the Western Chorus Frog³⁶ (Government of Canada, 2016e).

This section discussed the history of SARA and COSEWIC, as well as the integrity and implementation gaps in the process for protecting species at risk in Canada. SARA must be fully implemented in order to have the true conservation benefits of the law. Proper implementation means that critical habitat has to be fully identified and protected for any listed species. Another important consideration is that recovery takes time to fulfil, and to be effective, these conservation measures must remain consistent in the long term (Favaro et al, 2014). As loss of habitat is the main threat for approximately 84% of Canadian species at risk, time wasted in identifying critical habitat can cause serious repercussions for the species involved (Page, n.d). The government's neglect to identify and protect critical habitat contrasts directly with one of the main purposes of SARA, which is to protect and recover species at risk in Canada (Page, n.d).

4.3.3 Comparison of SARA and U.S ESA

The U.S division of powers is different than Canada's. The federal Congress is distrustful of the executive branch, and writes detailed statutes so that they are implemented exactly as wanted (Illical and Harrison, 2007: 369). The U.S historically has a very adversarial system, where any action made by the executive branch can be taken to court (Illical and Harrison, 2007: 369).

Canada has a different style of government in which the executive and legislative branches are joined together (Illical and Harrison, 2007: 370). Cabinet drafts most bills and ensures their implementation. Environmental statutes generally authorize actions by the executive branch, but do not compel them. Canada's model is one of decentralization, where provincial governments maintain jurisdiction over most species.

³⁶ The full list of prohibited activities can be found on the Species at Risk Public Registry's page for the Emergency Order, *Emergency Order for the protection of the Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield Population (GLSLCS))*

The huge gap between the enactment of the U.S ESA and the Canadian SARA was in part due to Canadian businesses and the agriculture sector's observation of "negative lessons" from the experiences faced in the United States (Illical and Harrison, 2007: 372-373). Canadian lawmakers wanted to avoid the "economic consequences and litigiousness" which resulted from the U.S' nondiscretionary approach (Illical and Harrison, 2007: 372-373). Thus there was stronger opposition in Canada than there was in the U.S, which led to the Canadian government considering voluntary compensated stewardship as an option (Illical and Harrison, 2007: 373).

Table 8: Comparing some aspects of SARA and the American ESA. Reprinted from *A Tale of Two Acts: Endangered Species Listing Practices in Canada and the United States* by Waples et al. Retrieved from JSTOR.org, Copyright 2013.

<i>A comparison of key elements of Canada's Species at Risk Act (SARA) and the US Endangered Species Act (ESA) with respect to the assessment, recovery, and protection of species.</i>		
Element	SARA	ESA
Purpose	"To prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened" (section 6)	"To provide a means whereby the ecosystems upon which <i>endangered</i> species and <i>threatened</i> species depend may be conserved, [and] to provide a program for the conservation of such... species" (section 2[b])
Status categories	<i>Extirpated, endangered, threatened, special concern</i>	<i>Endangered, threatened, warranted but precluded by other actions; agency-specific candidate species and species of concern categories</i>
Definition of <i>extirpated</i>	"No longer exists in the wild in Canada, but exists elsewhere in the wild" (section 2)	Not defined
Definition of <i>endangered</i>	"Facing imminent extirpation or extinction" (section 2)	"In danger of extinction throughout all or a significant portion of its range" (section 3)
Definition of <i>threatened</i>	"Likely to become an <i>endangered</i> species if nothing is done to reverse the factors leading to its extirpation or extinction" (section 2)	"Likely to become an <i>endangered</i> species throughout all or a significant portion of its range in the foreseeable future" (section 3)
Definition of <i>special concern</i>	"May become a <i>threatened</i> or an <i>endangered</i> species because of a combination of biological characteristics and identified threats" (section 2)	Not in the ESA. If information is insufficient to indicate a need to list but concerns exist regarding status and threats, the National Marine Fisheries Service (NMFS) labels it a <i>species of concern</i>
Initiation of an assessment	Over 95% of listed species originate from decisions made by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); the others are from unsolicited requests from government and the public	The US Fish and Wildlife Service (USFWS) and the NMFS conduct most status reviews in response to petitions; however, reviews can also be initiated by the services
Assessors of species status	Independent advisory body (COSEWIC)	Staff in the USFWS and the NMFS, following input from government scientists and others
Who makes listing decisions	The governor in council, a subcommittee of ministers of the federal cabinet	The secretary of the interior (USFWS species) or of commerce (NMFS species)
Protective regulations for listed species	Automatically apply to <i>endangered</i> and <i>threatened</i> species	Automatically apply to <i>endangered</i> species; regulations for <i>threatened</i> species are promulgated as needed
Review of status	By COSEWIC, every 10 years, or sooner if there is reason to believe that status has changed	At least every 5 years by the USFWS and the NMFS
Status assessment criteria	IUCN criteria are used as a guide	No standardized criteria
Geographical range of listed species	Limited to the species range within Canadian territory	Wherever species occur; not limited to US territory
Rescue effect	Status can be adjusted on the basis of immigration from adjacent, non-Canadian populations	Not explicitly considered, but the unit to be assessed can include adjacent, non-US populations

Is prelisting scientific advice on status publicly available?	All COSEWIC species status reports and status assessments are publicly available	All listing determinations are published in the <i>Federal Register</i> and supporting information is publicly available; stand-alone, publicly available science reports are common within the NMFS but not the USFWS
Population units eligible for listing consideration	Designatable units of all species can be listed if they are determined to be at risk	Ability to list distinct population segments is restricted to vertebrates
Scientific basis of listing decisions	A decision not to list can be based on perceived socioeconomic consequences of listing decisions	Listing decisions are based solely on best scientific and commercial data available
Steps and time lines following a proposed listing determination	(a) Issuance of a response statement by the minister of the environment (3 months) (b) Preparation of a listing decision recommendation by the minister to federal cabinet (c) listing decision by cabinet following receipt of COSEWIC assessment from the minister of the environment (9 months)	(a) Public review and comment (no less than 60 days) (b) Final listing decision by the responsible secretary within 12 months of a proposed listing determination
Time lines for preparation of recovery strategy	<i>Endangered</i> species: 12 months after listing; <i>extirpated</i> and <i>threatened</i> species: 24 months after listing	No statutory time frame, but the USFWS and the NMFS are required to develop and implement recovery plans unless doing so would not promote conservation; a progress report to Congress is required every 2 years
Public participation in species assessment process	Anyone can submit a request for observer status at a COSEWIC meeting; none has been denied; observers typically include environmental nongovernment organization representatives, government managers and scientists, university students, and other interested members of the public	Participation by individuals from outside government agencies is generally constrained by provisions of the Federal Advisory Committee Act

Abbreviations: COSEWIC, Committee on the Status of Endangered Wildlife in Canada; NMFS, US National Marine Fisheries Service; USFWS, US Fish and Wildlife Service.

Table 9: The number of Canadian species assessed by COSEWIC as being at risk.
Reprinted from *A Tale of Two Acts: Endangered Species Listing Practices in Canada and the United States* by Waples et al. Retrieved from JSTOR.org, Copyright 2013.

<i>The numbers of species assessed by the Committee on the Status of Endangered Wildlife in Canada as endangered, threatened, and special concern as of January 2013.</i>					
Taxon	Endangered	Threatened	Combined endangered and threatened	Special concern	Combined endangered, threatened, and special concern
Amphibians	10	5	15	8	23
Arthropods	34	6	40	8	48
Birds	29	28	57	21	78
Corals	0	0	0	0	0
Fishes	54	40	94	52	146
Lichens	5	3	8	6	14
Mammals	24	17	41	30	71
Molluscs	18	3	21	7	28
Mosses	8	3	11	4	15
Plants	96	44	140	44	184
Reptiles	19	10	29	10	39
Total	297	159	456	190	646

Note: For a current list, see www.cosewic.gc.ca/rpts/Full_List_Species.html.

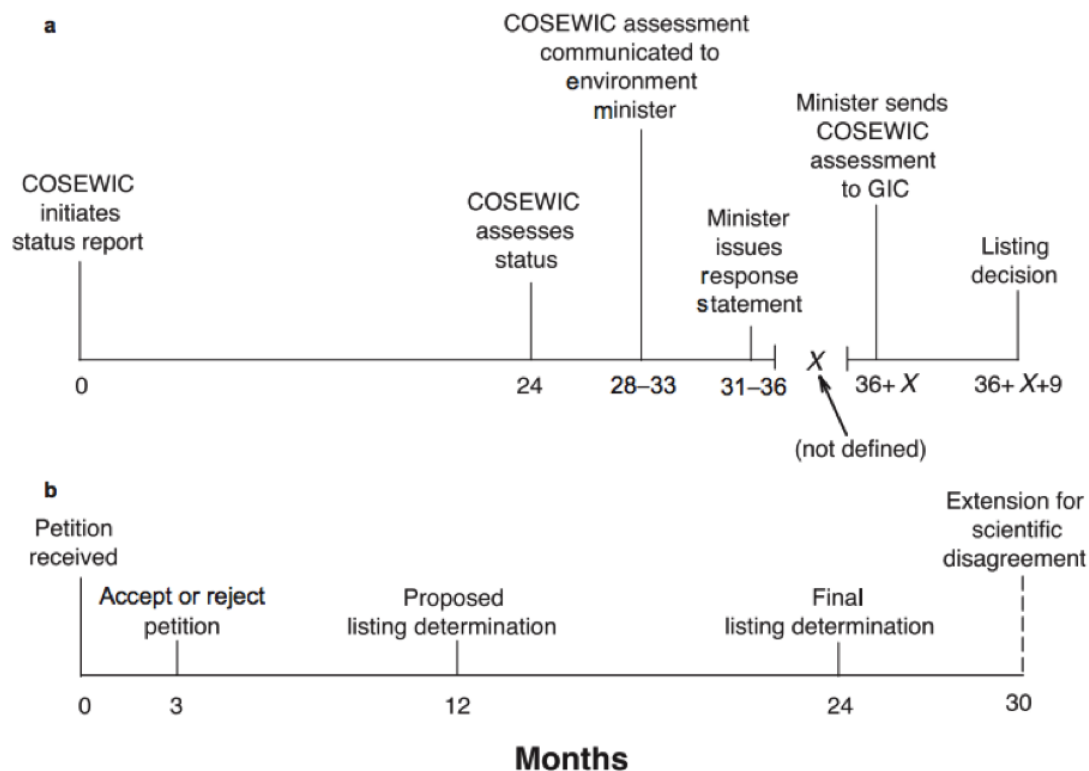
Table 10: Number of species assessed by as being at risk under the ESA. Reprinted from *A Tale of Two Acts: Endangered Species Listing Practices in Canada and the United States* by Waples et al. Retrieved from JSTOR.org, Copyright 2013.

<i>The numbers of species listed in the United States under the Endangered Species Act as endangered and threatened as of January 2013.</i>			
Taxon	Endangered	Threatened	Combined endangered and threatened
Amphibians	16	10	26
Arthropods	88	13	101
Birds	78	15	93
Corals	0	2	2
Fishes	83	70	153
Lichens	2	0	2
Mammals	70	15	85
Molluscs	99	24	123
Mosses	0	0	0
Plants	665	150	815
Reptiles	14	22	36
Total	1115	321	1436

Note: Although the Endangered Species Act (ESA) allows the listing of species occurring entirely outside the United States's national boundaries, to be comparable with the Canadian data in table 1a, this table includes only those ESA species that occur in the United States or its territories. For a current list, see http://ecos.fws.gov/tess_public/pub/Boxscore.do#ij.

There are a few significant differences between SARA and the ESA. Under SARA, any taxon can be listed, but under the ESA, only vertebrates can be listed. SARA also has a more “restrictive” definition of the term “endangered,” requiring that a species be “facing imminent extirpation or extinction,” (section 2) compared to the ESA’s “in danger of extinction,” (section 3). Also, under the ESA, a species can only be listed if it is at risk in a significant part of its range. In Canada, IUCN criteria that COSEWIC uses are meant to be precautionary, and status is designated based on “the single highest-risk characteristic,” (Waples et al, 2013: 730). On the contrary, the ESA standards require that available information is considered collectively, and species are given a status determined by the weight of the evidence. Also, the ESA only considers scientific factors when making listing decisions, whereas under SARA, the federal government can decline listing for a species based on socioeconomic factors. This is the main reason why many marine fish species recommended by COSEWIC have been denied listing. SARA also does not have timelines for every step of the listing process, and there is no deadline

by which the Minister of Environment has to send a COSEWIC assessment to the Governor in Council, which can cause delays (Waples et al, 2013).



Time lines for listing under (a) Canada's Species at Risk Act and (b) the US Endangered Species Act. The legally mandated time lines in Canada are those for the ministerial response statement and listing decision (the 24-month period for the Committee on the Status of Endangered Wildlife in Canada [COSEWIC] assessments can be considered typical); all time lines indicated for the United States are legally mandated. X is an undefined length of time between two stages of the process. Abbreviation: GIC, governor in council, a subcommittee of federal cabinet ministers.

Figure 9: Timelines for listing under the SARA and the ESA. Reprinted from *A Tale of Two Acts: Endangered Species Listing Practices in Canada and the United States* by Waples et al. Retrieved from JSTOR.org, Copyright 2013.

4.4 Other Federal Laws

It is important to recognize that there are two other laws that provide some measure of protection for species at risk in Canada. One of those laws is the *Migratory Birds Convention Act*; it is briefly canvassed here. The other law is the *Fisheries Act*.³⁷

³⁷ For reasons of scope and space, it will not be feasible to provide an overview of the *Fisheries Act*, a significant federal law that is currently under revision. The law underwent substantial

Migratory Birds Convention Act

The Migratory Birds Convention Act (MBCA) was passed in 1994. The law was originally created after the Migratory Birds Convention between Canada and the United States, and was enacted in 1917, and updated in 1994. Its intention was to deal with issues of “uncontrolled hunting of waterfowl and shore birds,” (Boutis, 2016)³⁸. The treaty was signed at the end of 1916, and the Migratory Birds Convention Act was passed in Canada in 1917, and the Migratory Bird Treaty Act was passed in the United States in 1918 (Burnett, 2003). The two acts included in their list of birds to be protected, waterfowl, cranes, rails, shorebirds, doves, insect-eating passerines and seabirds, and excluded raptors and corvids, including predatory birds such as hawks, crows, and other fish-eating species. Over the years, the MBCA has been used in court to protect migratory birds that are also species at risk (Boutis, 2016). The Environmental Offender’s Registry shows that there have been 10 convictions under the MBCA since June 18, 2009³⁹ (Boutis, 2016).

4.5 The Ontario Context

4.5.1 History of the Ontario Endangered Species Act (OESA) and COSSARO

The Ontario Endangered Species Act (OESA) was passed in 2007 and implemented in June 2008. This law is more similar to the U.S ESA than to SARA in the way that it is written. When the OESA was being considered, members of government stressed the importance of regulating property but making sure to “proceed with carrots instead of sticks,” in regards to the

reform under the former federal government; the current federal government has promised to make substantial changes, in part to remedy the failings of the previous reforms.

³⁸ The law was also created after concern about the extinction of the last passenger pigeon in 1914 in a zoo in Cincinnati, Ohio (Burnett, 2003)

³⁹ In April 2016, Bergedac Ltee and one of its shareholders and employees was convicted and fined \$12,000 for violation of the MBCA by causing the destruction of over 40 Bank Swallow nests, a threatened species under SARA. Another conviction happened in 2016 when Canaport LNG Facility was charged and fined \$750,000 under both the MBCA and SARA. With two convictions in less than six months under the MBCA, it is possible that the law will be used more often in court (Boutis, 2016).

government's relationships with landowners (Olive, 2012: 88-89). The OESA prohibits individuals from killing, harming, harassing, capturing, or taking a living member of a listed species, with fines for doing so going up to \$1 million and/or a year in jail (OESA 2007, 9.1). Private landowners have to obtain a "take permit" if they want to alter areas of critical habitat on their lands. They can petition for a permit allowing them to make changes on their property as long as their actions will not result in negative consequences that cannot be reversed, and also if they participate in certain mitigation measures (Olive, 2012: 89). The OESA also resulted in the creation of the Species at Risk Ontario Stewardship Program that is meant to promote stewardship activities for listed species. When the bill was passed, \$18 million was put towards funding these programs over 4 years (Olive, 2012). Stewardship programs in Ontario will be discussed in Chapter Five.

In Ontario, COSSARO is responsible for assessing and listing species at risk. COSSARO is comprised of 11 members from public and private sectors who assess species in Ontario that may be at risk. These members have "relative expertise," usually from a scientific background that involves work on "conservation biology, population ecology, taxonomy, or genetics," (Olive, 2012: 89). The government has one year to create a recovery plan for species listed as endangered, and two years for threatened species. 128 species were moved into the OESA framework from older wildlife acts, and there is no deadline for their recovery strategies to be created, because the deadlines apply only to species that were listed after 2008 (Olive, 2012).

Table 11: Bill 184, [Ontario] *Endangered Species Act, 2007* Explanatory Notes. Adapted from Environmental Law and Policy in the Canadian Context by Greenbaum and Wellington, 2010.

Purposes of the Bill	To identify species at risk based on the best available scientific information, including information obtained from community knowledge and Aboriginal Traditional Knowledge.
	To protect species at risk and their habitats, and to promote the recovery of species at risk.
	To promote stewardship activities to help protect and recover species at risk.

Classification of species	The Committee on the Status of Species at Risk in Ontario (COSSARO) is continued. Its members must be persons who have relevant expertise drawn from a scientific discipline or aboriginal traditional knowledge. COSSARO is required to assess and classify species and to report the classifications to the responsible Minister. The Bill sets out rules for classifying species as extinct, extirpated, endangered, threatened or special concern species. Classifications must be based on the best available scientific information, including information obtained from community knowledge and Aboriginal Traditional Knowledge. See sections 3 to 6.
	A designated Ministry official is required to make and file a regulation (referred to in the Bill as the Species at Risk in Ontario List) that lists all the species that are classified by COSSARO as extirpated, endangered, threatened or special concern species. When new information is reported to the Minister by COSSARO, the Ministry official must amend the regulation to accurately reflect the new information... See section 7 and Schedules 1 to 5.
Protection and recovery of species	If a species is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species, the Bill prohibits killing, harming, harassing, capturing, taking, possessing, transporting, collecting, buying, selling, leasing, trading or offering to buy, sell, lease or trade a member of the species, or selling, leasing, trading or offering to sell, lease or trade anything that is represented to be a member of the species... See Section 9.
	If a species is listed on the Species at Risk in Ontario List as an endangered or threatened species, the Bill prohibits damaging or destroying the habitat of the species... The regulations may specifically prescribe an area as the habitat of a species but, if no habitat regulation is in force with respect to a species, “habitat” is defined to mean an area on which the species depends, directly or indirectly, to carry on its life processes... See Section 10 and 2 (definitions).
	The Minister is required to ensure that a recovery strategy is prepared for each species that is listed on the Species at Risk in Ontario List as an endangered or threatened species... See Sections 11 to 15.
Agreements, Permits, and other instruments	The Minister may enter into agreements for the purpose of assisting in the protection and recovery of species that are listed on the Species at Risk in Ontario List. Such an agreement may authorize a person to engage in an activity that would otherwise be prohibited. See section 16.
	The Minister may also issue a permit that authorizes a person to engage in an activity that would otherwise be prohibited. These permits may only be issued in specified circumstances. See section 17.
	If specified conditions are met, instruments issued under other Acts that authorize a person to engage in an activity have the same effect as a permit issued by the

	Minister under the Bill. See section 18.
	Special provisions govern agreements and permits relating to aboriginal people. See section 19.
Enforcement	The Bill contains a number of provisions relating to enforcement. These include provisions designating enforcement officers and, in specified circumstances, authorizing them to conduct inspections and searches. Orders may be made in specified circumstances. A person against whom an order is made may require that a hearing be held and, after a hearing is held, the Minister may confirm, amend or revoke the order. See sections 21 to 35.
Offences and Penalties	A contravention of specified provisions of the Bill, or of provisions of agreements, permits or orders under the Bill, is an offence. A person cannot be convicted of an offence if the person establishes that the person exercised all due diligence to prevent the commission of the offence, or that the person honestly and reasonably believed in the existence of facts that, if true, would render the person's conduct innocent... See sections 36 to 45.
Miscellaneous. Other provisions in the Bill include:	<p>The Bill makes clear that it does not abrogate or derogate from the protection provided for the existing aboriginal and treaty rights of the aboriginal peoples of Canada as recognized and affirmed in section 35 of the Constitution Act, 1982. See section 46.</p> <p>The Species at Risk in Ontario Stewardship Program is established. Its purpose is to promote stewardship activities that relate to species listed on the Species at Risk in Ontario List... See section 47.</p>

4.5.2 Evaluation of the OESA

In 2007, the ESA was widely recognized by NGOs as the “gold standard” when it came to protecting species at risk in North America. However, over the years, the province has neglected its duties to protect species at risk. Regulation (O Reg 176/13) was created in 2013 by Cabinet and exempts major industries such as forestry, mining, energy, and residential development from the guidelines in the ESA. This allows industries to kill and harm endangered and threatened species and destroy their habitat, as long as the harm is “minimized,” (Ecojustice, 2015b). Some of the Ontario listed species at risk that would be affected by the regulations include the American Eel, the Blanding’s Turtle, Lakeside Daisy, Jefferson Salamander, and the Woodland

Caribou (Ecojustice, 2015c). A case that was launched against the Ministry of Natural Resources by Ecojustice will be discussed in Chapter Five.

Ecojustice⁴⁰ published a report in October 2012 titled *Failure to Protect – Grading Canada’s Species at Risk Laws*. This report graded the federal government as well as the provinces and territories for their actions or lack of actions for protecting species at risk. Ontario received a grade of C+ on the “report card,” (Ecojustice, 2012). The report card mentions that while the OESA was once considered the “gold-standard” for species protection amongst all the Canadian provinces, because of its balance between a science-based approach and inclusions of socio-economic considerations in its recovery actions, the OESA implementation has been poor and inconsistent (Ecojustice, 2012:14).⁴¹ An example of the OESA’s failures to protect species at risk, and the resulting court cases from these failures will be discussed in Chapter Five

4.5.3 Other Ontario Laws Relevant to Species at Risk

Ontario Fish and Wildlife Conservation Act

The Ontario Fish and Wildlife Conservation Act (FWCA) was passed in 1997. This law applies to wildlife,⁴² and refers to fish separately; they are not included in its definition of *animal*, because the law applies minimally to fish species⁴³ (Shields, 2016). It also deals with the protection of wildlife and conservation of their living spaces (Fish and Wildlife Conservation

⁴⁰ Ecojustice is the largest Canadian environmental law charity; it has been at the forefront of species at risk protection in Canada. The organization continues to evaluate SARA and the OESA, and has participated in many litigation cases to protect species at risk.

⁴¹ The Environmental Commissioner’s Office (ECO) has also published yearly reports criticizing the systemic problems with implementing the ESA, and examined listing delays by the MNR; see Environmental Commissioner of Ontario (2013a, 2013b, 2017a, 2017b).

⁴² Which it defines as "an animal that belongs to a species that is wild by nature, and includes game wildlife and specially protected wildlife," [FWCA 1(1)]. The term *animal* is defined as "Mammalia (mammals), Aves (birds), Reptilia (reptiles) or Amphibia (amphibians)," (Shields, 2016)

⁴³ It mostly deals with the licensing of recreational and commercial fishing.

Act, 1997). This Act also deals with lawful animal hunting⁴⁴ and trapping of mammals, birds, reptiles, and amphibians and fish. The FWCA allows for property owners to capture, kill, or harass certain wildlife to protect property, if the owner has grounds for believing that the animal has damaged or may damage their property⁴⁵. In any circumstance where the FWCA and the OESA conflict about the protection for an animal, invertebrate or fish, the law that provides the species with the most available protection will prevail (Shields, 2016).

Ontario Heritage Hunting and Fishing Act

This act, passed in 2002, states that "(a) person has a right to hunt and fish in accordance with the law" (HHFA 1). The Act was created to deal with concerns from hunters who enjoy hunting of wild animals for recreational and sport purposes (Shields, 2016).

Ontario Provincial Policy Statement under the Ontario Planning Act:

The Provincial Policy Statement under the Ontario Planning Act protects the habitats of threatened and endangered species by prohibiting development⁴⁶ or alteration of those sites (Section 2.1.3[a]). It also prohibits those actions in areas of "significant wildlife habitat," (Section 2.1.4[d]).⁴⁷ This may include areas where species concentrate at any vulnerable point in

⁴⁴ The act does not apply to "farmed animals" for commercial use or production, or animals that are being used for research in a facility registered under the animals for Research Act.

⁴⁵ Some wildlife species residing in Ontario are still federally regulated; geese are protected under the MBCA, so an Ontario landowner would require permission from Environment Canada to harass or kill geese to protect their property (Fish and Wildlife Conservation Act, 1997).

⁴⁶ Section 6 defines the term *development* as being "the creation of a new lot, a change in land use, or the construction of buildings and structures, requiring approval under the Planning Act," (Ontario Nature, n.d). This means that wildlife habitats and species at risk habitats are not protected from work conducted under the Drainage Act, mining and mining exploration, or building or maintaining infrastructure, which includes road construction (Ontario Nature, n.d)

⁴⁷ The term *significant* is defined in Section 6 of the policy, as being areas that are "ecologically important in terms of features, functions, representation or amount, and contributing to the quality and diversity of an identifiable geographic area or natural heritage system," (Ontario Nature, n.d).

their annual or life cycle; or areas which are of importance to migratory or non-migratory species, (Ontario Nature, n.d).⁴⁸

4.5.4 Comparison of U.S ESA and OESA: Lake Erie Water Snake Case

A 2012 study comparing the OESA to the U.S ESA,⁴⁹ using the case of the Lake Erie Water Snake (LEWS) examined the approaches taken by Ontario and the United States. This study attempted to determine which country was more effective in protecting a species that was at risk in both Canada and the U.S. In 2010, the LEWS was determined to be a recovered species by the U.S Fish and Wildlife Service, and in June of 2011, it was removed from the ESA. There is nothing to suggest that the species will be delisted under Canada or Ontario's species at risk laws anytime soon (Olive, 2012).

The LEWS is a rare species found along the shorelines of the islands along western Lake Erie and does not exist anywhere else in the world. It has faced population declines in the past, mostly due to habitat loss due to development along the shores of the islands. This species resides in Ontario and Ohio, on two islands 5 miles away from each other, and was listed as endangered or threatened under both the Canadian and American federal laws. Since SARA applies to federal Crown lands, the snake is mostly protected under the OESA; in Ohio, it is protected under the ESA. Ontario's jurisdiction includes provincially regulated Crown lands as well as on private property, so the LEWS snake that exists on provincial public lands like parks, and private property, is protected by the OESA (Olive, 2012). The USFWS created and implemented a recovery plan; the Ontario Ministry of Natural Resources (OMNR) has yet to write one. The LEWS is one of the species that was transferred onto the OESA from older wildlife acts, so there is no deadline for a recovery strategy for it, because the deadlines apply only to species that were listed after 2008 (Olive, 2012).

⁴⁸ *Wildlife habitat* is also defined in Section 6 as being “areas where plants, animals and other organisms live, and find adequate amounts of food, water, shelter and space needed to sustain their populations.

⁴⁹ For reasons of scope, this thesis does not provide comprehensive review of ESA. For discussions and evaluations of the ESA, please see Taylor et al (2005); Findlay (2009);, Illical and Harrison (2007); Olive (2012); and Waples et al, (2013).

Implementation of the ESA in Ohio, where the LEWS resides, falls under the jurisdiction of the USFWS in the Great Lakes Region. The LEWS was listed as threatened in 1999, and the species and its critical habitat were instantly protected. While the ESA requires the USFWS to create and put into place recovery plans for all species, there is no deadline for the completion of those plans. Also, the USFWS considers recovery plans to be “guidance documents,” and not “legally binding requirements,” (Olive, 2012: 87). This means that once the plan has been written, there is no legal contract that compels the USFWS to implement it. The USFWS writes approximately 16 recovery plans every year. In the 38 years since the ESA’s enactment, a total of 600 plans had been written, and a total of 1231 species were listed under the Act at the time this research was conducted in 2012. As of 2011, 24 species had been delisted after having recovered. Other species were removed from the list as well, due to scientific reclassification, finding of new members of the population, or due to becoming extinct (Olive, 2012: 87).

The USFWS completed a recovery plan for the LEWS by 2003, which recognized 3 important factors in its recovery; a maintained population of 5,555 individuals for 6 or more years, an area of 4.6 miles of shoreline and 126 acres of inland habitat that had to be protected, and a decrease in its killing (Olive, 2012: 87). This plan was successfully put into place. Working with the Ohio Department of Natural Resources (ODNR) and other independent conservation agencies, 11.27 miles of shoreline were protected, as were 313 acres of inland habitat using various approaches, including outreach programs, and a newsletter called the “LEWS News” and information bundles for landowners and visitors. Surveys conducted in 2008 indicated that landowners are aware of the LEWS and its general needs. When the paper was written in 2010, for the previous eight years, there were 6,200 snakes counted yearly (Olive, 2012). Olive found that the USFWS restored the snake population, which might improve their relationship with landowners, but the OMNR did not, which may ruin its relationship with landowners in the long-term. It is also difficult to compare the two agencies since OMNR previously used to focus on hunting, fishing, and natural resource use, and then had to revise its priorities in 2007. The USFWS has had 37 years to do this revision.

Through the study, landowners were interviewed on one American and one Canadian island (Olive, 2012: 87). Overall, landowners on both islands were found to have similar attitudes towards conservation on private properties. Landowners on both sides support conservation, but do not harbour positive views towards the USFWS and the OMNR, and the laws they are in charge of enforcing. Landowners did not seem to know many specifics about the laws or the endangered species in their area either, suggesting that public outreach has not been very effective. On both sides, over 80% of landowners thought it important for humans to protect other species. Almost 60% of landowners said they cared about the LEWS. According to the data, some landowners felt that property was a right given to them by the government, and not a natural right. However, landowners on both sides were not in favour of the government receiving money from them for conservation on private property. Most landowners were accepting of other restrictions that did not involve money, or other restrictions on what they can do on their properties. Both sides were willing to allow government officials access to their properties to manage the species, with the Ohio landowners more willing. (Olive, 2012).

The laws are similar, and so are the landowners' views, so it was unclear as to why the LEWS was recovered in Ohio and not in Ontario. This research demonstrates that the U.S ESA⁵⁰ and the OESA are very similar and there is little difference between the landowners' willingness to participate in stewardship, as well as their attitudes towards their properties or the government. Olive argues that thus, "bureaucratic differences, particularly institutional capacity and implementation styles," were why the snake has recovered in the U.S but not in Canada, not because of landowner actions (Olive, 2012: 84).

⁵⁰ While there were no complaints when the ESA was enacted, over the years it was not seen favourably by government. When the law expired in 1992, Congress did not officially reauthorize the Act and began revising it instead. Currently the law is being renewed every year through funding from Congress, but revisions have not been discussed in either Congressional House as of yet. The public's support for the law has also lessened over the years, mostly from landowners and commercial developers who believe they were burdened due to conservation measures (Olive, 2012).

This research concluded that the USFWS is more effective when it comes to writing and implementing recovery plans (Olive, 2012: 87). However, both agencies are not good at working with landowners and making them aware of the law and the species on their lands that are affected by it. Olive says that the government of Ontario is sending mixed signals to landowners; on the one hand, landowners have to apply for permits to modify their land, and are having shoreline activities limited for species at risk; on the other hand, the species which is to be protected has yet to have a proper recovery plan in place. This may lead landowners to think that the species might not be in urgent need of restoration and that their activities are being restricted unnecessarily.

The OMNR needs to create a recovery plan that is public for landowners. Currently, the LEWS is visible to landowners, and they may not understand the urgency to protect it, and may become frustrated and not willing to cooperate in the long-term. According to the interviews, most landowners were willing to help species at risk, but they do not know what to do. There are \$18 million in stewardship funds in Ontario, but most landowners do not know about it (Olive, 2012). If landowners were to be informed about the law and the available funds, they may perhaps voluntarily steward their land, reducing the OMNR's finances. Both countries should also work together on cross-border species, since 20 species on the ESA's list of species also reside in Canada⁵¹ (Olive, 2012). This research also addresses the lack of information about private landowners' attitudes towards conservation in Canada. Currently, this data that was collected in Ontario is the only data looking at property norms in Canada and the U.S and how those may affect landowners' views towards conservation (Olive, 2012: 85).

⁵¹ There was an attempt in 2001 for the USFWS and Environment Canada to work together on cross-border species (Olive, 2012). This happened in the form of a partnership, and a publication called "Conserving Borderline Species," and two meetings with agency representatives from Canada and the U.S; however nothing materialized after that.

Chapter Five: Litigation, Stewardship, and Volunteer Efforts for Protection for Species at Risk

5.1 Overview of Chapter

The first portion of the thesis focused on the biodiversity crisis worldwide and in Canada, and more specifically, in the province of Ontario. Chapter Four explored the legal frameworks that are in place to protect species at risk in Canada and Ontario, and compared SARA and the OESA to the American ESA. Chapter Four also highlighted the weaknesses and implementation gaps in the federal and provincial processes for species at risk recovery and protection. This discussion leads into Chapter Five, which addresses other approaches that NGOs and stakeholders have resorted to or can participate in. This includes litigation, stewardship activities, and volunteer efforts and community programs.

Chapter Five begins with some examples of court cases where NGOs have litigated against government and businesses, on behalf of species at risk. NGOs can take sue businesses for breaking laws, or for harming/killing species at risk. Governments can also be challenged through applications for judicial review for failing to properly implement species at risk legislation, or for creating exemptions or regulations that could harm species at risk, as was the case in *Wildlands League v. Lieutenant Governor in Council, 2015 ONSC 2942*.

Following the litigation cases are examples of volunteer efforts and stewardship programs for species at risk in Ontario. This section explores some initiatives and programs that resulted from the discussed court cases, as well as examples of programs and volunteer measures that began earlier, and have continued onward after the court cases as well. These collaborative governance initiatives involve different stakeholders collaborating on joint goals, and can include partners such as NGOs, members of the community, municipal and provincial governments, scientists and researchers, businesses, zoos, universities and education institutes, and the media. This type of collaboration is being used as a strategy for protection and recovery of species at

risk, and to accomplish a common goal.⁵² Clarke and Fuller (2011) write about what they term multi-organizational cross-sector social partnerships (CSSP), which are an increasingly popular option to address “complex social and ecological problems that are too extensive to be solved by any one organization,” (Clarke & Fuller, 2011, pg. 87). Cross-sector social partnerships allow organizations to collaborate on issues that are outside of the scope of any one organization (Clarke, 2011). This collaborative strategy involves organizations forming partnerships or alliances to work towards collective goals, creating a collaborative strategic plan, and organizing implementation at the collaborative and organizational levels.

When asked about this type of cross-sectorial collaboration during the interviews, Interviewee 6, a city councillor, responded, “... I think cross-sectorial collaboration is the only way you get things done in this world. You know, government alone [does not] have the strength, community sector of course [does not] have the legislative ability, and the business sector sometimes ... [is] seeking its own profit.” Interviewee 1, CEO and co-founder of an NGO, responded, “...we could not have accomplished what we accomplished without stakeholders, without partnerships, and a variety of partnerships- [on our website] [there is] a section dedicated to partners, and we tried to map out all the various partnerships that [we have] participated in since 1993 ... we [have not] captured them all, but [there are] well over 80 partnerships.” The interviewee also stressed the importance of having different types of stakeholders: “...with partnerships you also get diversity of expertise... in areas that ... you [cannot] necessarily possess on your own so for sure ... I think they need to be pursued; I think they need to be embraced and taken full advantage of.”

5.2 Ecojustice Court Challenge to ESA’s Regulatory Exemptions

In 2013, two NGOs, Ontario Nature and CPAWS Wildlands League filed a Notice of Application to the Ontario Divisional Court against the Ontario government regarding proposed Regulation O Reg 176/13 under the OESA (Wildlands League, 2016). The changes under this regulation exempt certain ministries from the OESA, and mean that not a single of the 150

species at risk in Ontario is fully protected under the OESA as they were originally intended to be. The forestry, mining, and energy sectors would now be allowed to kill or harm species at risk, and destroy their habitats are part of their business. Since the regulation was introduced in 2013, over 1,100 industrial and development activities were exempted from their legal requirements towards species at risk (Wildlands League, 2016). Anna Baggio of Wildlands League states that the OESA went from being guided by a “presumption of protection” to a “presumption of permission,” by introducing this regulation (Baggio, 2015). When the MNR posted about the exemptions on the Environmental Registry (EBR)⁵³, the proposals received a substantially high amount of public attention; there were over 10,000 public comments made on the registry.

Wildlands League and Ontario Nature were represented in court by Lara Tessaro and Anastasia Lintner, two lawyers from Ecojustice (Baggio, 2016a). The Divisional Court decision was received in May 2015, and Ecojustice lost the case. The applicants then filed a Notice for Motion for Leave to Appeal in July 2015. The Appeal case was heard in 2015, and the Decision of the Ontario Court of Appeal was released in October 2016 in favour of the defendants. The appellants then filed a Notice of Application for Leave to Appeal to the Supreme Court of Canada in December 2016, hoping to have the case heard in the Supreme Court. The case was rejected by the Supreme Court, and ultimately Ecojustice lost the verdict (Wildlands League, n.d.).

Lawyer Lara Tessaro elaborated on the NGOs’ reasons for going to court, stating, “In those situations, despite the expense and risk, sometimes going to court is the only option that environmentalists have left.” Tessaro stated that she was astounded by the “sheer breadth of the regulation” that her team was challenging, as every endangered and threatened species in Ontario was affected by the regulatory reform. Tessaro also pointed out that the appeal case was the first

⁵³ The Environmental Registry is where government ministries can inform the public through “public notices” about proposed environmental matters that are covered under the Environmental Bill of Rights. This can include information about “new laws, regulations, policies and programs or about proposals to change or eliminate existing ones,” (Environmental Registry, n.d.).

time that the Ontario Court of Appeal would interpret the meaning of the ESA. The litigants argued that protecting species should be the highest priority under the ESA (Baggio, 2016a).

Interviewee 2 stated: “there’s good examples of instances where species specific target exemptions from the law make good sense, but this regulation wasn’t that, it was a regulation that exempted every endangered and threatened species from most harmful activities in Ontario. So really, it’s seen as kind of an attack on the statute itself.”

Interviewee 2 stated that there were initially 5 groups that wanted to participate in the legislation, but only 2 ended up going to court. They could not reveal why the other three groups did not go forward with the litigation against the ESA regulations but stated that: “I [cannot] tell you why, but you can always think about the kinds of... barriers, like money, diversion of staff resources away from other priorities ... limited financial and human resources, but also, you can also think about ... if you have a ... [new] premier ... and [you are] ... working with her on other issues and her staff, maybe you don’t [want to] turn around then and sue her.” The interviewee also stated: “... [I am] not saying that those were considerations in this case, but they are ... things for you to bear in mind for why groups may or may not go to courts, [it is] rarely just about the disputed issue.”

When discussing whether a loss in court can still lead to positive results elsewhere, Interviewee 2 replied, “as a litigator I want to win these cases, but ... you can sometimes have what groups might call ... a strategic loss ... sometimes a case can be designed so that ... even if you lose, all the loss does is ... help to demonstrate the legal gap between implementation and failure, it can help groups lobby for improved laws ... if a court says, ‘... well this was a very well intentioned attempt to try and obtain ... [an] important conservation outcome but the law in this province doesn’t require that,’ ... that can bolster and buttress groups to make demands for a stronger law.” And that “... sometimes when you lose a case you just lose a case. Sometimes... you have the risk of making it worse; that can definitely happen. Sometimes, you can win a case, and actually lose your battle, and I have done that where [I have] ... won cases, and then a few

months later the government has weakened the law to try to ... justify its previous course of action.”

Interviewee 2 stated that litigation is “one piece of the activist arsenal.” This is a point that this thesis aimed to highlight; that litigation is one strategy that can be used for a large problem that requires many approaches. NGOs participate in multiple methods of species at risk protection, and litigation is one of the many approaches that they use. It is definitely a costly and time-consuming strategy; Interviewee 2 pointed out the difficulty for NGO’s to find resources to simultaneously litigate and lobby, and work with government, and conduct outreach.

The appeal case was the first time that the Ontario Court of Appeal would interpret the meaning of the ESA (Baggio, 2016a). Interviewee 2, a lawyer, also discussed the repercussions of this court decision, stating “This is the first case where the court is kind of required to open up the ESA and say, “What does this Act do? What is its purpose? How does the Act work? [What is] its scheme? What does this provision require?” And [that is] a real contrast to the federal courts where SARA has been litigated for 10 years.” At the time the case was in court, there were 161 endangered and threatened species in Ontario.

The discussions stemming from this case also highlight some of the difficulties NGOs face when trying to pursue litigation. Anastasia Lintner mentioned that in a situation where the OESA is challenged, public money is used to fund the government and its arguments that are supporting industry and worsening the chances of species at risk. However, non-profit organizations have to obtain their funds from volunteers and supporters to argue their case in court (Baggio, 2016b, n.p).

5.3 Litigation cases on behalf of species at risk on Canada

The following sections, 5.3.1 and 5.3.2, discuss three court cases that took place in Ontario. The court cases involved species at risk, although to varying degrees. Section 5.3.1 discusses the *Prince Edward County Field Naturalists v. Ostrander Point GP Inc.* court case, and involves the finding of Blanding’s Turtles habitats where a wind turbine was to be built.

Section 5.3.2 discusses two cases involving migratory birds. In *Liat Podolsky (“Ecojustice”) v. Cadillac Fairview Corp. et al*, and *Schultz v. Menkes Consilium et al*, two businesses were charged for causing harm to migratory birds with their reflective building windows. Sections 5.3.1 and 5.3.2 discuss the relevant cases and how they relate to species at risk. The sections that follow will discuss volunteer efforts that resulted from the cases, or transpired parallel to the court cases.

List of cases in chronological order							
2003	2007	2009	2009	2009	2014	2014	2015
Western Canada Wilderness Committee v. British Columbia	2007 Rounthwaite v. Minister of Environment	2009 Environmental Defence Canada v. Canada	2009 Alberta Wilderness Association v. Canada (Minister of Environment)	2009 Environmental Defence Canada v. Canada (Fisheries and Oceans)	2014 Western Canada Wilderness Committee v. Canada (Fisheries and Oceans)	2014 Western Canada Wilderness Committee v. Canada (Fisheries and Oceans)	2015 Prince Edward County Field Naturalists v. Ostrander Point GP Inc

Figure 10: Timeline of cases brought forward by NGOs.

5.3.1 PECFN Litigation Relating to Turtle Deaths

*Prince Edward County Field Naturalists v. Ostrander Point GP Inc., 2015 ONCA 269 (Court of Appeal for Ontario, 2015).*⁵⁴

This thesis examined another case that dealt with Blanding’s Turtles. This case involved an industrial wind turbine project that was to be located on Crown land, in southern Prince

Edward County, around 15 km south of Picton, Ontario. The Ministry of Environment (MOE) issued a Renewable Energy Approval (REA) in 2012 for Ostrander Point GP Inc.'s nine turbine wind farm (Birchall, 2014). In July 2013, the Environmental Review Tribunal (ERT)⁵⁵ revoked this REA. The ERT retracted the approval because the wind farm would result in "serious and irreversible harm," to Blanding's turtles in the area (Birchall, 2014). The ERT stated that traffic, and a rise in poaching and predators would hurt the turtle population at the site. Thus, the approval was revoked due to section 145.2.1(4) of the Ontario *Environmental Protection Act* (EPA) (Birchall, 2014).

A noteworthy fact in the Ostrander case is that it is the first REA appeal decision that addresses a project on Crown lands. One of the main issues the ERT considered was that new roads would be developed, for traveling to and from the site. The ERT examined a work permit that the MNR provided to the REA permit holder; the permit stated that the proposed roadways would be "multipurpose" and would allow "greater access to the Crown land resource for hunting and trapping and other passive recreational activities," and would only be restricted at the turbine location and the transformer station (Northey, 2013).

The ERT was concerned with this approach on the access to Crown lands, as it could cause more harm to Blanding's Turtles and their habitat. As the road access was given through the permits issued by the MNR, it was not within the ERT's jurisdiction to change it. This was another reason for the ERT to conclude that there is no alternative "project design" that "avoids the road mortality issue," that the ERT had identified when it came to the Blanding's Turtle (Northey, 2013). Thus, the REA was revoked.

The ERT decision was released on July 3, 2013 in *Alliance to Protect Prince Edward County v. Director, Ministry of the Environment* (Northey, 2013). This decision was

⁵⁵ The Environmental Review Tribunal (ERT) is one of five administrative tribunals that deal with environmental and land use issues. As explained on its website, the primary role for the ERT is to adjudicate applications and appeals, including ones arising under the Ontario *Environmental Protection Act*.

unprecedented, as the ERT was revoking an REA that was issued by the Director of the MOE. In its decision, the ERT found that there would be serious and irreparable harm in a situation where a permit had already been obtained. The tribunal, in effect, found that the issuance of the permit amounted to authorizing the harm to the threatened species. The ERT's finding of the harm will set precedents for future cases surrounding renewable energy projects, such as solar energy facilities, and the ERT's revoking of a permit issued under the ESA can affect future projects that involve endangered species (Northey, 2013).

One of the precedents set by this case was the revoking of an REA by a Tribunal. If the ERT concludes that an appellant has "established harm in the degree required," then it has 3 options: i) revoke the MOE Director's decision, ii) ask the Director to take suitable action that the ERT believes should be taken under the REA framework, or iii) alter the Director's decision, such as the conditions of approval that were issued. In this case, the ERT chose to revoke the REA, and stated that Ostrander had not submitted any possible solutions or remedies to the issue of harm to species at risk, nor explained how the project would continue without causing the harm that the Tribunal had identified. It was considered unusual for Ostrander to not be allowed submit possible remedies after the ERT's findings, however this may be because all the experts agreed that the location was an area of suitable habitat for Blanding's Turtles (Northey, 2013). Another fact the ERT considered in this case was that it would also be difficult for an REA proponent to alter part of its project since the developer in this case had a Power Purchase Agreement (PPA) with the Ontario Power Authority (OPA), and changes to the project area could change the power that would be delivered and thus affect the signed PPA (Northey, 2013).

Ostrander Point GP Inc., the MOE, and the Prince Edward County Field Naturalists (PECFN) appealed the ERT's decision to revoke the ERT. The PECFN believed that the ERT made an error when it did not find that the wind farm project would also have the same threats on migratory birds and alvar plant life. The Alliance to Protect Prince Edward Court (APPEC) also appealed, believing that the project would seriously harm human health. The Ontario Divisional Court's Decision was released on February 20, 2014. The court repealed the ERT's

decision (Birchall, 2014).⁵⁶ The Court denied the PECFN's appeal, as well as APPEC's appeal. PECFN intended to seek leave to appeal the Divisional Court's decision (Birchall, 2014). The PECFN raised over \$200,000 to help with court costs, and the case attracted attention from people nationwide. Members of the public sent supportive messages, joined petitions and sent letters to elected representatives. This case is significant as this is the first renewable energy case to reach the Ontario Court of Appeal (Bell, 2015).

In April 2015, the Ontario Court of Appeal reversed the ruling of the Ontario Divisional Court regarding the Renewal Energy Approval (REA). This decision confirmed what the 2013 ERT decision concluded, that Blanding's Turtles and their habitat would be susceptible to serious and irreversible harm as a result of the project. The appeal court did agree with the Ontario Divisional Court that the ERT should have given Ostrander Point GP Inc. a chance to figure out a solution for the problem, after it concluded that the turtle population would be harmed. The Court also stated that the ERT's decision to revoke the approval was unreasonable. The appeal court then sent the issue back to the ERT to figure out another remedy, and so that Ostrander could provide evidence of how it planned to close the access roads to the public (Birchall, 2015).

5.3.2 Ecojustice Litigation Relating to Bird Deaths From Window Collisions

Private Prosecution Cases: *Menkes + Cadillac Fairview*.

Two cases will be discussed: Case 1 is the *Schultz v. Menkes Consilium et. al.* decided by the Ontario Court of Justice, which had an unreported decision. Case 2 is the *Liat Podolsky ("Ecojustice") v. Cadillac Fairview Corp. et. al* decided by the Ontario Court of Justice, which had a reported decision.

5.3.2.1 Ecojustice prosecution: *Schultz v. Menkes Consilium et al*

—*Schultz v. Menkes Consilium et al.* Ontario Court of Justice, Unreported Case Transcript (Justice W. Turtle).

In March 2010, Ecojustice prosecuted Menkes Management on behalf of Ontario Nature, due to an unusually high number of bird collisions at the Consilium Place office towers in Scarborough. Ecojustice claimed that between 2008 and 2009, 900 birds were killed or injured at the location. Menkes was charged under the Ontario *Environmental Protection Act* and the *Ontario Society for the Prevention of Cruelty Against Animals Act*. The legal argument presented by the clients was that the sunlight that was being reflected from the building's glass windows falls under the "radiation" category, and is a contaminant under the EPA. This is because the light reflecting from the mirrored windows mimics the sky and confuses birds. Under the EPA, contaminants cannot be discharged/released if they harm or kill a species (Wellington, 2015).

In an interview published in the media, Bill Malis, a worker at Consilium Place, recalled dramatic stories of birds falling into people's meals when they ate outside the building, and stated that he found "beaks, legs, heads, everywhere on the property over the summer from all the hawks and seagulls ripping the birds apart," (Findlay, 2011). Malis was also a volunteer for FLAP, the Fatal Light Awareness Program, an organization that organizes and participates in many initiatives to prevent bird deaths and injuries from flying into buildings. In 2011, Malis was called as a key witness in the court case involving Menkes Developments. At the time the article was published in 2011, FLAP's data from the past decade showed that 5,068 birds were recorded to have collided into the three towers at the site, more than any other office building in the Greater Toronto Area (Findlay, 2011).

This case began developing in 2009; an Ecojustice lawyer named Albert Koehl learned about the issue from a FLAP volunteer. Koehl turned towards the Ontario Environmental Protection Act as well as other laws that could be used to protect birds from injury or death due to the reflective windows. However, the issue would be difficult to resolve under the EPA

because many sections of the law were not applicable to the situation. Koehl then referred to Section 14, which states that a person cannot discharge a contaminant - which would be reflected light in this case - if it causes an adverse effect, which would be the injured or killed birds. This was the first time this section was used to make this kind of argument (Findlay, 2011).

Upon being charged, a Menkes spokesperson stated that building management had begun working with FLAP towards reducing collisions at their building, by installing ultraviolet lights, ultrasonic devices, and tape that “flaps loudly” in front of the buildings to warn birds from coming close (Findlay, 2011). Menkes’ vice-president of commercial property management, Sonya Buikema wrote, “There are no other tested and proven solutions available to us at this time,” and that they “continue to be diligent and proactive in our efforts,” (Findlay, 2011). If Menkes was found guilty, the company would have to retrofit its three buildings with bird protective window film, costing \$30,000 per building. The case would set a strong precedent, as every building in the GTA could potentially be subject to the same rules, or potentially be liable. Mark Winfield, an assistant professor of environmental policy at York University, said that these types of cases may “embarrass government to enforce laws they otherwise wouldn’t enforce,” (Findlay, 2011). They can also be applied to other cases (Findlay, 2011).

The expert witness on birds for this case was Dr. Daniel Klem Jr., an Ornithologist from Muhlenberg College in Pennsylvania. The expert witness in physics was Dr. Pekka Sinervo, a Physics professor from the University of Toronto, who stated that the definition of radiation could include light reflecting from a window. The facts presented in the case were clear; the data showed that migratory birds were being killed and/or injured from the windows at that building (Wellington, 2015).

The legal issues relating to radiation are reflected in the following questions:

Firstly, is the reflected sunlight considered radiation?

- If so, is considered a “contaminant,” as described under the EPA? ⁵⁷
- Can the reflection of the light be considered an “emission” or “discharge” of this radiation under the *Act*?⁵⁸⁵⁹
- Are the defendants (Menkes) responsible or allowing this emission?
- Has the company taken due diligence measures to deal with these emissions?
- Are the actions or inactions of Menkes causing “cruelty” to birds?

The exceptions for Section 6, subsection (2): Subsection (1):

- a) A discharge that is authorized under this Act or the *Ontario Water Resources Act*, if the discharge does not cause and is not likely to cause an adverse effect; or
- b) A discharge of a contaminant that arises when animal wastes are disposed of in accordance with normal farming practices...”

The case was heard from April 2011 to January 2012 in front of the Justice of the Peace William Turtle. The decision was released on November 14th, 2012. Justice Turtle stated that Menkes was not responsible for the natural emission of the sunlight, and that the company did not actively try to harm or kill birds. While he agreed that sunlight is considered “radiation,” according to him, Menkes did not discharge or permit its discharge. He also stated that the Ontario Legislature’s intent could not have been to include reflected light as a contaminant, since sunlight is “essential to all life,” and that the purpose of the EPA was to deal with “harmful” radiation (Wellington, 2015). The Justice stated that the sun’s radiation can not be considered a pollutant or contaminant, and that Menkes was not creating nor permitting the discharge, are

⁵⁷ Under the *Environmental Protection Act*, Section 1, a “contaminant” is defined as “any solid, liquid, gas, odor, heat, sound, vibration, or radiation, or any combination of them, resulting directly or indirectly from human activities that causes or may cause an adverse effect.”

⁵⁸ The EPA, under Section 6 (1), states: “No person shall discharge into the natural environment any contaminant, and no person responsible for a source of contaminant shall permit the discharge into the natural environment of any contaminant from the source of contaminant, in an amount, concentration or level in excess of that prescribed by the regulations.”

⁵⁹ Section 14 (1) states: “Subject to subsection (2) but despite any other provision of this Act or the regulations, a person shall not discharge a contaminant or cause or permit the discharge of a contaminant into the natural environment, if the discharge causes or may cause an adverse effect.”

therefore not liable, so they did not need to determine if there was due diligence. He agreed with Menkes' lawyer than if the company were held liable, then every household could potentially be charged for not bird-proofing their property. Thus, the charges under the EPA were dismissed. Justice Turtle also said that the window strikes were not considered "cruelty to animals," under the Ontario Society for the Prevention of Cruelty to Animals Act (OSPCA), because they were not deliberate, or due to neglect. Thus those charges were also dismissed (Wellington, 2015).

After the prosecution, Menkes worked with FLAP to retrofit the windows of the building, and also set up "bird action stations." The building was later sold to Kevric Real Estate Corporation (Wellington, 2015). When interviewed about the case, Interviewee 5, a member of government who had also testified in the case, stated that Menkes had to retrofit the building to be able to sell to Kevric because Kevric did not want to deal with legal or financial issues regarding the windows, and Menkes repaired them. Interviewee 1 stated that midway through the trial, a "first of its kind of product" of window film came out in the market. This film was applied to the Menkes building on the high collision areas. Interviewee 1 stated,

"... [This] is a perfect example of what has taken years for the industry to see- the industry being the building owners and operators of commercial structures- to take this issue [seriously] enough. Once the demand was there, to address this issue, products started to appear. And the demand was, if you don't do something, you're [going to] find yourself in the court. And it's sad, but that's what it took. That's really what it took. Because for years, 10 years, ever since FLAP began, we've taken this communicative, volunteer approach, in trying to get buildings to address the issues, and the volunteerism only goes so far."

This case is an example of when volunteerism was able to supplement a litigation case. FLAP's data gathering, outreach programs, and collaboration with the municipal government on various initiatives (which will be discussed later in this chapter) were able to help in its goal to have the birds deaths reduced at that site. Interviewee 5's view is that while legal actions are

sometimes necessary, they should be a last resort.⁶⁰ Interviewee 5 is hoping that when the bird friendly guidelines come are reviewed by the government in a few years, that the government will be able to enforce a 25 year timeframe for all old buildings to retrofit their windows. Since building windows have to be changed approximately every 20 years, the timeframe will allow owners to plan for bird-friendly windows the next time the windows are replaced.

5.3.2.2 Ecojustice prosecution: *Liat Podolsky (“Ecojustice”) v. Cadillac Fairview Corp. et al*

Liat Podolsky (“Ecojustice”) v. Cadillac Fairview Corp. et al, Ontario Court of Justice Reasons for Judgment (Justice Melvyn Green).

This case was a private prosecution; the defendants were the Yonge Corporate Centre (YCC) managed by Cadillac Fairview Corp (CFC), who was being sued by Ecojustice. The prosecutors were claiming that at least 826 birds had flown into the YCC’s windows in 2010, out of 5000 recorded collisions in the GTA that year. CFC was being charged under the *Environmental Protection Act*, the *Ontario Society for the Prevention of Cruelty to Animals Act*, and the federal *Species at Risk Act* (Wellington, 2015).

The potential offences were:

- i. Having reflective glass, which caused distress to animals under Section 11.2(1) of the OSPCA Act.
- ii. Discharging or allowing the discharge of a contaminant (radiation) from reflective glass that could harm or kill birds, under section 14(1) of the Ontario *Environmental Protection Act*.
- iii. Killing, harming or taking individuals from a threatened wildlife species (Canada Warblers and the Olive-sided flycatchers), by use of reflective glass, contrary to Section 32 (1) of the federal SARA, which states: “No person shall kill, harm, harass, capture or

⁶⁰ Interviewee 5 stated: “You do not want to go into that adversarial system. It’s an expensive system.” They added, “It takes a lot of resources to go to court, and to do litigation. So in my view, it’s usually a last resort. When all else fails, then I [will] sue you.”

take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.”

The legal issues that were discussed are as follows:

- i. Whether bird collisions fall under what is “legislatively prohibited conduct,”
- ii. Whether the defendant practiced due diligence,
- iii. And other issues regarding statutory interpretation of the laws.

Under Section 100 of SARA, due diligence can be used as a defence in the prosecution. Under Section 102, it states that the court must take into account whether the offence was committed “intentionally, recklessly or inadvertently...” YCC argued that “the impugned conduct or omissions fall outside the scope of any reasonable interpretation of the reach of the provisions,” or that they “exercised reasonable care,” and could not be found at fault (Wellington, 2015).

When it came to the interpretation of the laws, Justice Melvyn Green discussed evidence presented by Dr. Pekka Sinervo from the University of Toronto, and stated that there must be “flexibility,” when interpreting the laws. Specifically when it came to the term “radiation,” he stated that it does not refer to radioactivity only, or nuclear processes (Wellington, 2015).

When it came to the charges under the EPA, the Justice decided that the defendants were guilty because they knew the effects of the discharge of the light towards the birds. The Justice stated that the “legislation is sufficiently broad and supple to encompass the alleged transgressions,” (Wellington, 2015). When it came to the allegations under SARA, the elements of the offence were also found to be satisfied, since if even “an individual” were to be harmed, the offence would be there. Also, the term “inadvertently” is used in Section 102(b), which includes even accidental harm or death to an individual (Wellington, 2015).

Since the *actus reus* was found to be present under the EPA and SARA, the next step was to determine if there was due diligence. The due diligence arguments of the defendants were

successful in court. The defendants had sought out expert assistance and had contacted the executive director of FLAP. YCC also cooperated and worked with FLAP on their bird collecting and documenting programs, and complied with municipal building and industry standards. They also had tried some technology that did not work or was causing issues for their tenants, and immediately after the prosecution, the company increased their efforts to find a solution. Later on, the YCC had window film installed on its windows for a total cost of \$110,000. This cost was to be paid by the tenants, at 17 cents a square foot (Wellington, 2015).

Discussing the OSPCA, Justice Green stated that the Act does not fit within the realm of environmental law; rather it deals more with the subject of animal welfare. The objective of the OSPCA Act is, "to facilitate and provide for the prevention of cruelty to animals and their protection," (Wellington, 2015). The Justice stated that the Act focuses on pet ownership, breeding, and animals kept in captivity, as well as duties of veterinarians. Thus, the defendant's "passive ownership and management of buildings with which migratory birds collide" would not fall within the scope of the law, and the actions were not found to breach the OSPCA (Wellington, 2015).

Justice Green set a precedent with his decision that emissions of radiation and reflections of light from windows, which result in bird deaths and injuries, do breach both the EPA and the SARA. Then lawyer, Dianne Saxe,⁶¹ wrote that she found the Justice's "explanation of his conclusion on due diligence less clear and less persuasive," (Saxe, 2013). The Justice's explanation was that Cadillac Fairview was looking into the issues, by reducing light at night, and helped FLAP to collect evidence, and also undertook some remedial action once charges were laid. However, as Saxe points out, due diligence refers to efforts that the defendants made to avoid the offence which they are charged for, not to "a general attitude of overall compliance and responsibility, or to efforts to prevent other offences," (Saxe, 2013). Saxe also mentions that there was no evidence provided that demonstrates that Cadillac Fairview made an effort to prevent the offences before being charged. They had showed some interest in the issue, but did not "develop effective remedial measures," either with FLAP or a consultant, (Saxe, 2013). Saxe

⁶¹ Dianne Saxe is now the Environmental Commissioner of Ontario.

states that she would have recommended that the court convict the company, and give them a modest fine (Saxe, 2013).

5.3.2.3 Lessons to be learned from the two cases

Interviewee 1 was a witness in both cases, and discussed their experiences as a member of FLAP, being called to the witness stand during the trials. Discussing their experience on the witness stand in both cases, Interviewee 1 described it as “not at all an enjoyable experience,” and stated, “I sat on the stand for far too long in my opinion; more in the Menkes trial than the Cadillac Fairview was I really sort of ‘dragged through the poles.’” Interviewee 1 was also asked to discuss the thinking that went into pursuing litigation as a strategy, and the rationale for choosing to take this case to court. They explained that there were mixed opinions surrounding legal action because the organization had never sought it out, rather it “came” to them when one of their staff members had a conversation with an Ecojustice lawyer. Ecojustice wanted to address the issue further, and Interviewee 1 explained,

“They [Ecojustice] map out our history of years and years of trying to work on a voluntary level with industry, and only being able to get so far... it was a clear indicator that something had to shift, something had to change, and so they came to us with the offer of going to court, and ... at the beginning ... we took pause on that, and in the end you know we didn’t even want to be the informant. Because we had developed relationships with these building owners and building operators trying to walk them down that path of change and if we were to suddenly take them to court, we would lose their confidence...”

This provides insight into a fear that NGOs may have when deciding to pursue litigation. The delicate working relationships that take years to foster between NGOs and government and businesses can be severed when one party sues the other in court. After consideration, FLAP decided not to participate as an informant, and to be a witness only in the trial, which Interviewee 1 says, did not matter. “Our efforts to do it from a third party sort of perspective didn’t work, and both Cadillac Fairview and Menkes sort of ‘turned their backs’ on (the

organization) as a result of going to court.” While the court case did not impact their relationship with government much, it did affect their working relationships with the companies. Interviewee 1 stated that this actually made the second trial easier to work through, as he believed that FLAP was that their actions could not repair the relationship between them and the company. The organization did not serve as an informant in the second trial either; they thought it best to provide the data on migratory birds and answer questions related to that.

When asked if there was something they would do differently, Interviewee 1 said they might have participated in litigation sooner because the organization could only “get so far” with volunteerism. “...Here we have the law in place, and there’s maybe a handful of buildings that I can say have retrofitted their structures to address the law.” They believe that it might take “having to take another building to task under the law that now exists” for more people to address the law and the issue. According to Interviewee 1, the bird friendly guidelines that are in place at the moment have not made a significant change in the amount of birds that volunteers are picking up. Interestingly, Interviewee 6 believes that the guidelines are making a difference and that many buildings have been compliant with the requirements.⁶² However, at certain locations, such as the Menkes organizations, Interviewee 1 estimates that there has been a 70 to 80% reduction in bird deaths. They also pointed out that the issue is not new buildings, it’s existing ones, and that 99% of bird deaths are occurring at existing buildings.

An average of 3000 to 4000 birds are picked up yearly in the City of Toronto, “with a handful of volunteers monitoring a handful of buildings.” And this is only from a few buildings; Interviewee 1 says that the organization monitors 0.0001% of buildings in the city. When asked if they would participate in litigation again, Interviewee 1 stated that while it is the last place they would want to be, they would if they felt they had to. They explained, “It is not fun, it creates so much anxiety, it affects ... your mental state, your personal life, and so I wouldn’t ... be excited about it, but ... I’m able to see the potential outcome of it and would certainly find myself being able to sit on the stand again and go through something like that.”

⁶² The bird friendly guidelines will be discussed in later sections of Chapter Five.

Interviewee 1 also described their relationship with the City of Toronto, which began in 2005. They described it by saying, “the partnership we struck has been one of the pinnacle of all partnerships we’ve ever struck. And it’s allowed us to create similar partnerships with other municipalities; because we’ve seen the most momentum in bringing light and action to this issue through working with government, both municipally, you know provincially, federally.”

Interviewee 1 described their process to working with government: “we start the work, develop working relationships with various councillors, various levels of government, demonstrate to them the willingness to work with them, [and] offer them very viable, very concrete information that will help them help us do what we need to do.” The government “embraces” this, stated the Interviewee. Interviewee 1 also stressed that the organization remains patient in its campaigns, because “these things don’t change overnight.” They stated: “There’s always one or two councillors or one or two city representatives that [want to help] and they start to ... influence other councillors and other municipalities, and so ... it’s just developing some strong working relationships that have really helped us get this word out.”

Another one of the organization’s strongest allies has been the media. Interviewee 1 stated that the media has an unwavering interest in this story. They described it: “...Those poor, small, delicate songbirds dying at the hands of corporations... there’s always this sensationalism that journalists can ... put a swing on this, that makes it more readable... it increases the potential for readership in their articles.” Interviewee 1 said the media had a strong coverage of this issue and the lawsuit as well; however, they do not believe it had any “significant sway” in building management behaviours in terms of them addressing the issue. Interviewee 1 also believes that building management that have addressed the issue enjoy the positive media coverage. However this publicity is only enjoyed for a brief period of time, because the more attention that is drawn to a particular building, the more pressure the management will face for them to fix “their entire portfolio” of buildings. Interviewee 6 also mentioned that bad publicity could be a means for forcing businesses to take bird-friendly actions:

“So you ... get them in a negative way... No property owner would want that as a reputation. So what hopefully businesses do is they ... learn to accept that the bylaws are good

and they don't offer negative flack, as we try to institute good policies." Interviewee 6, a city councillor for the City of Toronto, also stated "you need a strong legislative framework and public consciousness for [building owners] to do the right thing. They don't want to be seen as bird unfriendly

Discussing the reasons why the two cases were so "successful," in court, Interviewee 1 stated that the data from FLAP was factual, strong and undeniable, and that "it didn't take long to convince the courts based on our data, based on the photographs, witness accounts, one after the other after the other, of volunteers sitting on the stands and being able to support the data that they carried, that you know, there was no point in lingering." Also, the problem was obvious and the solutions are simple "cost effective, and they can make a difference overnight." Interviewee 6 echoed similar sentiments, stating, "that picture of those hundreds of birds I think as soon as people see that, does it ever change heads, and ... people also have a very interesting relationships with birds. Birds to them symbolize spirituality... freedom, flight, and so when they see a bird go down they really have an awful feeling about it. So I think that also plays on people's consciousness."

Interviewee 1 was also asked whether a court case can have positive results even if the case does not end favourably, and what are other ways that the organization's objectives and goals can be achieved from litigation. They stated that it depends on whom the question is asked to, as some people believe they did not have a positive outcome in court, but Interviewee 1 believes that they did. The cases did lead to the creation of a new law that applies to new building developments in Toronto, and also the companies' "corporate reputation" was at stake and could scare other companies into resolving similar issues quicker in the future, before legal action is taken. When asked the same question, Interviewee 5, another Toronto city councillor said it was tough to discuss positives in this situation. They described the legal process as a "combative, ugly, expensive, stressful arena." For Interviewee 5, the "positives" were that without a legal avenue, the issues at those buildings would not have been fixed. When asked if litigation creates more hostile and divisive environments, or if it has the potential to lead to more collaboration between government and other stakeholders, Interviewee 5 answered that it does

both. And in some cases, the two opposing parties may actually end up working together before a verdict, rather than waiting for a verdict from the judge that could go either way. Interviewee 5 stated, “the legal system forces people who have disagreements, whether they’re slight ... disagreements or huge profound differences, and brings them together.”

The interviewees were also asked if they believe that litigation on behalf of species at risk will gain stronger traction in the future in Canada; Interviewee 1 replied that litigation is “happily and yet sadly is the way to go.” However they also believe that if they had tried it two decades ago, they would not have had the same results in the courts, stating:

Sadly, it did take years of data to accumulate, to be able to reinforce the fact that this wasn’t ... one [time]. This is happening year after year, migration after migration, and nothing’s being done about it. And so there was that duration that needed to take place to gather [data] reinforces that message and funny enough it was never an intention of our data, you know we never ever intended it to be used in the court of law. But ... it proved to be one of the most valuable exercises our organization has ever done.

When asked the same question, Interviewee 5, answered that they believed there will be more and more litigation on behalf of species at risk: “...yes, I think more litigation will happen. They stated that they did not believe it was a route that anyone wants to take, yet, they are thankful that there is a “legal framework to try and protect species even if that legal framework is not that good.”

An interesting discussion stemmed from one of the interviews. Interviewee 4, a researcher and expert on migratory songbirds, revealed that she was asked to testify against wind turbine development due to concerns about bird deaths from wind turbines. Interviewee 4 provided some insight into the factors that may encourage researchers and other qualified stakeholders to participate in certain litigation cases and not others. They were invited to be a witness on behalf of one of the organizations in *Prince Edward County Field Naturalists v.*

*Ostrander Point GP Inc., 2015 ONCA 269 (Court of Appeal for Ontario, 2015).*⁶³ However, Interviewee 4 refused to testify, as they did not believe that there was sufficient evidence to support the claim that wind turbines are dangerous to birds. They stated during the interview that “all the science tells us that for every bird killed by a wind turbine, we have 10 that are killed by windows. And to put it in even more context, for every bird killed by a turbine, we have 100 that are killed by cats.” The organization also argued that there would be habitat loss from the project. In regards to that, Interviewee 4 stated that: “The habitat loss because of suburban and urban development and agriculture dwarfs anything that wind turbines are ever [going to] do, so ... I think for litigation to be effective, ... the science has to be really sound...” They pointed out that in the Menkes/YCC cases, the companies were not taking away habitat or responsible for the decline of those at-risk species, but directly responsible for their buildings that were killing large numbers of birds, and that the data supported the NGOs claims in court.

Interviewee 4 brought up another interesting point, which was that different species require different monitoring and research programs, which can take longer depending on the species. An example they gave was issues with measuring turtle breeding programs, stating that a study could take up to 20 years, since Blanding’s Turtles do not begin breeding until they are 10 years old. At the moment it is difficult to know exactly how many turtles survived these programs long enough to be able to breed. However, when researching birds, there are some studies that are a lot easier to conduct, including breeding surveys, but measuring mortality and its causes are more difficult for birds. In regards to this, Interviewee 4 stated, “I think for each group of animals, whether it’s bees or turtles or birds, there are certain questions that are relatively easy and other ones where it’s really ... hard, and we may never have good enough science to really support the litigation action.” In other cases, they believe that the science might be present but “the scientists don’t necessarily [want to] participate,” such as was here case when asked to be a witness in the Blanding’s Turtles case. In regards to this, Interviewee 4 spoke through personal experience: “I’ve been asked several times, and I’ve said no because the issues that they were talking about, I felt like I either didn’t agree with them or I felt like my own

⁶³ For reasons of scope, the thesis does not discuss this case in detail; however there is literature available that discusses this case: (Birchall, 2014); (Northey, 2013); (Bell, 2015).

research wasn't in that area specifically..." In this case, the interviewee did not feel strongly enough to testify on behalf of birds or turtles, as they believed that there are other more significant threats. They also felt that organizations were concerned about the wind mills more than the species at risk, and were using the latter to stop construction of these wind mills. However, in the cases involving the deaths of migratory birds, Interviewee 4 agreed that the science was sound and unmistakable: birds were being killed in alarmingly high numbers by specific buildings.

5.4 Volunteer Efforts, Stewardship Programs and Stakeholders

5.4.1 Collaborative Governance, Volunteer and Community based efforts on behalf of birds

This section will discuss volunteer initiatives, outreach programs, and other measures that are being carried out to increase awareness about species at risk, and to help protect and recover endangered and threatened species. While the federal and provincial governments write and implement species at risk laws, NGOs and other stakeholders can take action and actively help species at risk through other initiatives.

There are many ongoing initiatives to help endangered and threatened bird species, and to deal with migratory bird deaths caused by human activities. For example, glass manufacturers are increasingly becoming aware of the market for bird-friendly products (Foderaro, 2014: 2). Both glass manufacturers and conservation groups have embraced changes in attitude towards this issue, with the creation of innovative products. One panel by Arnold Glas is called the Ornlux, and has a "patterned, ultraviolet reflective coating," that birds can see, but is almost invisible to humans (Foderaro, 2014: 1). Other patterns can have decals, dots, or stripes that can be applied as a film over the glass.

Scientists have conducted tests at the Bronx Zoo in the U.S, researching alternatives to reflective windows, and their effects on birds in the hope of understanding and finding a solution for migratory bird deaths. The research was a collaboration between the New York City

Audubon, the American Bird Conservancy and Fordham University. The researchers tested different glass types and their ability to steer birds away from the glass. The birds were released into a test tunnel, where at the end were two glass panels side by side; one panel was the usual glass that is used in many buildings, and the other was a bird-friendly glass, with white vertical stripes that are meant to deter birds⁶⁴. The bird-friendly glass proved to be effective, as the birds noticed it and steered away from it (Foderaro, 2014).

FLAP has been at the forefront of the issue (birds hitting building windows) for years, and first brought the issue of migratory bird deaths caused by window buildings to the Toronto city council's attention in 2005. City Councillors Glenn De Baeremaeker and Joe Mihevc took an interest in the issue, and a "bird-friendly" working group began creating voluntary building guidelines that buildings could adopt to become safer for migratory birds.⁶⁵⁶⁶ Interviewee 6 stated during the interview that after the City of Toronto's collaboration with FLAP, "...there was a whole set of policies that were developed as a result, making [Toronto] ... the first bird friendly municipality in Canada; and ... in North America."

FLAP has published on its website strategies to reduce bird collisions to building windows, including solutions for both older and newer buildings. The recommendations provide options for architects, designers, and building owners and managers to minimize bird collisions at their buildings. This can be done using channel glass, embedded markers, frit patterns, silk-screen, spandrels, grillwork, retrofits, sun shades, etched patterns, ultraviolet technology, or other design features. FLAP's website has pictures, descriptions, and examples of these options (FLAP, n.d).

⁶⁴ There was a fine-mesh net hanging in front of the glass panels, so regardless of their choice, the birds would not hit the glass.

⁶⁵ According to architect John Robert Carley, the issue of bird collisions is not a historic one, as glass walls in the past "were broken up with brick," and windows "had a screen on the outside, and a bird would perceive a screen," (Leblanc, 2014: 1).

⁶⁶ Migrating birds are more likely to hit buildings than "resident species, like house sparrows, blue jays and cardinals," (Foderaro, 2014: 2). It is more difficult for newer birds to learn and adapt to their surrounding areas (Foderaro, 2014).

FLAP CANADA STANDARD FOR VISUAL MARKERS


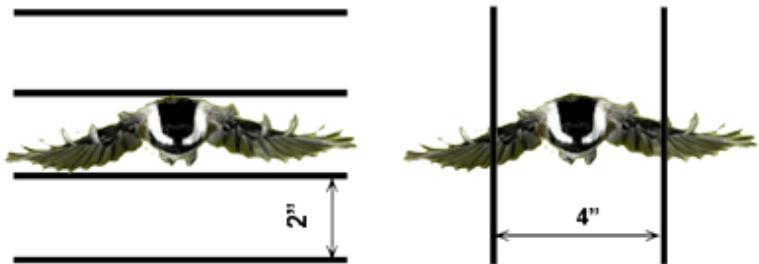



	DENSITY: For most bird species visual markers are to be separated no greater than of 5 cm (2 inches) vertically and/or 10 cm (4 inches) horizontally. See below image
 <p>For smaller bird species (hummingbirds, kinglets, creepers, etc) markers should be separated by a maximum of 5 cm (2 inches) vertically and/or 5 cm (2 inches) horizontally.</p>	
	CONTRAST: Markers should stand out and offer the highest level of contrast on clear or reflective exterior surfaces under varying weather conditions.
	SIZE: The dimension of a visual marker pattern needs to be no less than 0.32 cm (1/8 inch).
	SURFACE: Visual markers are to be applied to the exterior surface (first surface) of glass in order to disrupt the illusion of the reflected environment or open area beyond the glass.

Figure 11: FLAP Canada Standard for Visual Markers. Reprinted from *Protect Birds At Home* by FLAP Canada. Retrieved from FLAP.org, Copyright 2017.

5.4.2 Collaborative Governance, Volunteer and Community based efforts on behalf of turtles

There are many ongoing research projects to help recover turtles in Ontario. This section focuses mainly on the Blanding's Turtle, which was the focus of the court case that was discussed in this chapter. This section highlights some of the programs in place and how NGOs work with members of their communities, as well as with government, researchers, zoos, law enforcement, and Aboriginal groups.

The Natural Heritage Information Centre has a database of all known observations of turtles at risk in Ontario, and the database is continually updated with new information. Blanding's Turtle nesting ecology is being studied at Long Point and St. Lawrence Islands National Park (Government of Canada, 2017a).

Municipalities can be involved in species at risk protection as well. The City of Windsor is “securing” Blanding’s Turtle habitat for long-term protection through “land purchase,” (Government of Canada, 2017a). The Essex Region Conservation Authority is helping by “planting native trees and shrubs to act as riparian buffer strips to reduce sedimentation, nutrient loading, and siltation of turtle habitat,” (Government of Canada, 2017a). Also, ATV and off-road vehicle restrictions and barriers are being placed in areas where there is sensitive Blanding’s Turtle habitat in an effort to reduce human disruption. Rondeau Provincial Park provided nest protection for Blanding’s Turtles in 2000 and 2001, and Point Pelee National Park did the same from 2001 to 2007 (Government of Canada, 2017a). The Nottawasaga Valley Conservation Authority (NVCA) is another organization that is working with landowners in the area to help locate, map out, and examine the turtle habitat in the watershed, and is looking at possible threats. Developing working relationships with landowners is crucial in areas of suitable habitat. The Georgian Bay Reptile Awareness Program conducts outreach on all the reptile species at risk in the Georgian Bay area. In 2003, the program reached 2000 students and 2300 members of the public. In 2005, an outreach program held along the Trent Severn Waterway educated boaters about turtle species at risk. Another initiative is the Kawartha Turtle Trauma Centre, where injured turtles are rehabilitated and then released into the wild (Government of Canada, 2017a).

Earth Rangers is another non-profit organization that helps protect species at risk, and it uses a unique approach, by engaging children and encouraging them to get involved in fundraising projects. Their website has information about local species at risk and how people can help in their conservation and protection. Children can start a “Bring Back the Wild” campaign for a species of their choice and fundraise for it; by raising a certain amount of money, they can win prizes. There is information on what children can do if Blanding’s Turtle is spotted and where to report it, and to make sure to look out for turtles while travelling by car from May to October. The campaign helps fund the Toronto Zoo’s Head-starting and Reintroduction project where 55 turtle eggs are collected from at-risk nests and incubated; the turtles are cared for until they are able to survive independently. The money will also go towards educating kids about threats facing freshwater turtles in Ontario (Earth Rangers, 2013).

The Toronto Zoo is an example of a business and research organization that is working with many different stakeholders, through different initiatives. The zoo has relationships with NGOs, researchers, citizens and community members, Aboriginal groups, the provincial government, and law enforcement, actively working towards restoring Blanding's Turtle's habitats and also involved in breeding studies and outreach programs. The zoo carries out surveys to estimate population sizes, identify potential habitat sites, and map the movement of turtles using radio-tracking technology. The zoo's researchers have identified areas in Ontario where there are high levels of turtle traffic mortality. The researchers are also looking at how effective road signs are at those locations by studying videos of the public's reactions to the signage to see which signs are more effective at reducing human impacts. The Toronto Zoo has also designed stewardship materials to educate people about turtles at risk in the area, including posters (Government of Canada. 2017).

The Toronto Zoo is also working with the Ontario Association of Crime Stoppers to stop the illegal trade of Blanding's Turtles. Globally, the illegal wildlife trade is worth an estimated \$30 billion a year. The Blanding's Turtle is a rare species, and is prized by collectors. The Toronto Zoo and Crime Stoppers' initiative educates people to help end this trade (Toronto Zoo, 2015). Another initiative by the Toronto Zoo is releasing Blanding's Turtles into the Rouge Park annually. The zoo works with Parks Canada, and the Toronto and Regional Conservation Authority (TRCA). In 2015, 21 baby turtles were released into a wetland in the Rouge National Urban Park. Dr. Lentini, the Curator of Amphibians and Reptiles at the Toronto Zoo, stated that Blanding's turtles are a "poster child for endangered species," and that helping the turtles helps other wetland animals and plants (Toronto Zoo, 2015). The turtles have faced many threats over the years in that area, such as habitat loss and road mortality. This project involves collecting eggs from nests in unfavourable situations, incubating the eggs at the zoo, and raising them for 2 years in the turtle nursery, until they can be released into the wetlands. The two year "boost" helps more young turtles reach the adulthood stage, and become larger, so that most of their predators cannot swallow them. Around 50 Blanding's Turtles are released each spring, and the turtles are tracked using radio transmitters. Another initiative in the Rouge Park area is The

Urban Turtle Initiative (UTI), which develops research projects that look into habitat use and the population recovery for at-risk turtle species. Radio telemetry technology has been used in this project since 1999 to track various species, including snapping turtles, map turtles, and Blanding's turtles (Toronto Zoo, 2015).

The Toronto Zoo also participates in the Ontario Turtle Tally, which attracts volunteers who report any turtle sightings online; the data collected from this tally helps to determine where habitat conservation projects are needed. The Zoo states, "our work with Blanding's turtles is a great representation of how the Turtle Tally program has directly influenced turtle conservation through the input of citizen scientists," (Toronto Zoo, 2015). One example is a site in southern Ontario where the Zoo was notified of a large number of Blanding's turtles that were hit on the road; the Zoo was able to work with local landowners and road authorities to have wildlife fencing put up in the area and improve the wildlife crossing under the road, so the turtles can cross under the road. The Zoo staff monitored the area for a few years and found that the turtles were using the crossing structure, and also determined that there were now over 100 individuals residing in the area (Toronto Zoo, 2015).

The Toronto Zoo also has a Turtle Island Conservation programme (TIC) where it works together with First Nations (FN) partners to preserve biodiversity. The programme "celebrates culturally diverse and community-based approaches to conservation, recognizing that socially relevant programming is an imperative component to educating and motivating people to take action for the protection of wildlife and wildlife habitat," (Toronto Zoo, 2015). Since 2005, the TIC has "partnered with FN communities to develop culturally appropriate programming to protect and preserve community knowledge and significant natural and cultural landscapes," (Toronto Zoo, 2015).

5.4.3 Stewardship Programs in Ontario

The Government of Ontario provides information about available stewardship programs on its website, to inform people on how to receive money for participating in species at risk

protection and recovery. It also has a list of suggested activities for getting involved in species protection. The suggestions include reporting a sighting of a species at risk, volunteering with a nature club or provincial park, reporting illegal activities, and becoming involved in stewardship activities (Government of Ontario. 2014a). Private landowners can participate in stewardship activities by first becoming aware of potential species at risk on their land. If a species at risk is found, land owners may be eligible for stewardship programs. For example, land owners can protect wetlands and natural vegetation on their land to help in Blanding's Turtle recovery (Government of Ontario. 2014a). As such, each species has its own stewardship recommendations. Other recommendations to help Blanding's Turtles include watching for turtles on roads between the months of May and October, not to buy native species of turtles or wild turtles, and to report illegal trades, and to submit observations of turtles to the Ontario Reptile and Amphibian Atlas (Government of Ontario. 2014a).

One option for grants in Ontario is the Species At Risk Stewardship Fund (SARSF), which was created under the OESA to motivate people to participate in stewardship activities. Any individual or group can apply for the fund, including (Government of Ontario, 2014b).

- “Indigenous communities/organizations
- Academic institutions
- Conservation authorities
- Individual businesses
- Industry organizations
- Land owners and farmers
- Municipal and local governments
- Non-government organizations” (Government of Ontario, 2014b).

To be eligible, a project activity must benefit a species of risk residing in Ontario and should fit into the following categories:⁶⁷ (Government of Ontario, 2016b).

- i. Habitat management/restoration
- ii. Survey, inventory or monitoring
- iii. Direct threat mitigation
- iv. Research
- v. Local and traditional ecological knowledge (Government of Ontario, 2016b).

There are other grants and incentives available, such as (Government of Ontario, 2014b):

- Species at Risk Farm Incentive Program
 - This program provides incentives for the protection for species at risk and their habitats on privately owned farms in Ontario.
- Habitat Stewardship Program for Species at Risk
 - This is a federal government program that gives funding for projects that protect species at risk, as well as their habitats.
- Aboriginal Fund for Species at Risk
 - This is a federal fund that aids Aboriginal communities and groups to “build capacity” to be able to participate in species at risk recovery.
- Conservation Land Tax Incentive Program (CLTIP)
 - Under this program, property owners can qualify for a 100% exemption of property tax if their land contains areas of important natural heritage.
- Managed Forest Tax Incentive Program (MFTIP)
 - Under this program, property owners can qualify for tax relief if they create and implement a Management Forest Plan for their property.
- Land Stewardship and Habitat Restoration Program (LSHRP)

⁶⁷ Examples of eligible activities can be found on the Government of Ontario’s website, under the page *Species at Risk Stewardship Fund application guidelines*.

- This program can award organizations up to \$20,000 in matching funds for projects that will maintain or repair habitats that are of benefit to fish, animals, and plants (Government of Ontario, 2014b).

The Government of Ontario's website also includes information about Stewardship Program projects that are currently running or set to begin in the coming year. The fund supports communities and organizations, as well as Aboriginal communities and groups, as well as private landowners, industries, and researchers to participate in programs that aid species at risk and their habitats (Government of Ontario, 2016c).

5.4.4 Municipal Programs Responding to Migratory Bird Deaths from Window Collisions

This thesis discussed the current situation of Canadian bird species at risk. Two court cases were discussed in relation to migratory birds deaths caused by flying into building windows, which included species at risk.

In 2007, the City of Toronto created a rating system to grade how "bird-friendly" buildings are; this was a follow-up to the bird-friendly guidelines. This voluntary system was incorporated into the city's "green building" standard. Developers that are trying to be more bird-friendly can fill out the checklist and city staff will come to make sure all the requirements are met (Vincent, 2007). There was also a potential for companies to save a lot of money by reducing lights in their buildings. One example is when Metro Hall voluntarily turned out its lights at night to reduce bird deaths, which saved the owners \$200,000 a year in utility costs, and reduced their carbon dioxide emissions (Vincent, 2007).

The City of Toronto began a "Lights Out Toronto!" campaign in 2006 to try to encourage building owners, tenants, and homeowners to turn off their lights at night to allow birds to navigate properly. However, the bird deaths are a 24-hour problem, not just at night. Collisions during the day also happen when trees and other vegetation are reflected in glass windows.

FLAP has a yearly display of birds at the ROM that were killed after hitting Toronto buildings. Interviewee 6 described the display:

The birds that didn't quite make it, [FLAP] used to freeze them and then bring them out and put them ... on the floor, and line them all up and when people saw how many birds this involved, they were aghast. And also the various species [there], everything from hawks to little sparrows, they had them all there ... Cardinals, blue jays ... were all there lined up [around] hundreds of them, that they had basically frozen and allowed [displays] and the media would come and take a look at that and then ... that helped create a climate of opinion, and allowed the policy makers like myself to basically say '... we [have go to] do something, we can't just let it go.'

Interviewee 6's comments demonstrate that public outreach can lead to positive change for species at risk. FLAP's display is what led to the media's attention towards the issue, and eventually the municipal government's involvement, and the creation of municipal programs. The City of Toronto began by creating the Bird-Friendly Development Guidelines in 2007; the aim through these guidelines "is to prevent the needless deaths of migratory birds by suggesting ways to mitigate the dangers buildings pose to them," (City of Toronto, 2007). The guidelines discuss different solutions for the problems, by having visual markers and reducing the reflection from the glass. The guidelines also include an explanation of the steps building management can take to reduce light pollution (City of Toronto, 2007). The original Bird-Friendly Development Guidelines were created with input from "architects, development corporations, property management corporations, bird advocacy groups and City staff," (City of Toronto, n.da). Other cities in North America have been inspired to initiate their own guidelines (City of Toronto, n.da).

The City of Toronto developed the Toronto Green Standard (TGS), a set of performance measures to ensure sustainable building designs, encompassing elements such as green roofing, bird-friendly windows, etc. The TGS became effective in 2010 for all new development projects.

The Standard is made up of two tiers; Tier 1 is required for all new construction projects in the City of Toronto, and Tier 2 is voluntary, but includes a financial incentive of a reduction in the development charges for the property (City of Toronto, 2015). “Bird Collision Deterrence” and “Light Pollution” performance measures that are both required to complete Tier 1 of the standard (City of Toronto, n.da). The TGS “established performance measures for green development based on local environmental drivers,” (City of Toronto, 2016). The TGS included performance measures meant to reduce bird collisions, meaning that in order to be “green,” a building must also be bird-friendly. The standards have been adapted from the 2007 guidelines to include the ones that can be “implemented through the planning approval process in the Province of Ontario,” (City of Toronto, 2016). Toronto became the first municipality in North America that requires all new development to have bird-friendly standards (City of Toronto, 2016).

The Ontario Ministry of the Environment and Climate Change (MOECC) is now attempting to change one of the regulations in the Ontario EPA, which will free building managers from having to protect birds from window collisions, and change it to voluntary - based action. FLAP issued a statement regarding this issue in 2015; in the statement, the organization express that having worked on this issue since 1993, it found that a voluntary approach did not work on building owners and managers and did not convince them to have their windows retrofitted (Songbird SOS, 2015). Councillors De Baeremaeker and Councillor Mihevc wrote a letter in December of 2015 to the Honourable Glen Murray, Minister of the Environment and Climate Change regarding the proposed ministry exemptions. They did not support the exemptions and instead recommended that the Province of Ontario adopt as a mandatory requirement, the City of Toronto Bird Friendly Development Guidelines, along with some potential improvements that “reflect current best practices,” (De Baeremaeker and Mihevc, 2015). The Councillors pointed out that the Ontario Court of Justice has “ruled that the province has authority to regulate buildings that are lethal or dangerous to migratory birds,” (De Baeremaeker and Mihevc, 2015). Their recommendation was that all building owners must have a risk assessment conducted by “qualified consultants supported by the ornithological and scientific community,” (De Baeremaeker and Mihevc, 2015).

Chapter Five discussed the ways in which NGOs can use litigation as a strategy to fill the implementation gaps in the protection of species at risk. These court cases can involve different members of the community, from businesses, to members of government, as well as researchers, scientists and experts. These stakeholders can also work together collaboratively to work towards species at risk protection. They can do this through volunteer efforts, and programs that actively work towards protecting species at risk and their habitats. This can include a variety of actions from participating in number counts, to helping breed species, to cleaning and restoring destroyed habitats. Lastly, the provincial government can encourage stewardship by offering stewardship programs. These can be awarded to landowners and interested citizens who work towards conserving and restoring critical habitat and helping to protect species at risk. These volunteer actions and stewardship programs can run parallel with litigation or without it, or can also result from litigation cases that bring these issues into the public sphere. Next, Chapter Six will conclude by summarizing the findings of the thesis, and including policy recommendations. These recommendations will discuss how the relevant laws can be strengthened, and how the government can ensure stronger protection for species at risk.

Chapter Six: Policy Recommendations and Conclusions

6.1 Summary

There were three major themes that guided this thesis. The first theme was the highly problematic situation of species at risk in Canada and Ontario. The focus on that theme included a discussion and evaluation of the effectiveness, strengths, and drawbacks of the legal frameworks that are in place to protect these species. The second theme built on the first and focused on litigation as a result of the implementation gaps from government. It also discusses litigation cases involving business that were charged for harming species. The goal was to determine why NGOs have resorted to using litigation as a strategy to protect species at risk. Another aim was to determine if litigation could be an effective method of helping to save species at risk, and what kinds of outcomes can result from litigation, outside of the courtroom. The third major theme was focused on gaining insight into the role of volunteerism, stewardship, and other collaborative efforts between stakeholders, and how they can actively benefit species at risk and their habitats.

The results of the qualitative interview were that each participant had a different opinion of litigation, or experience participating in litigation. Without interview research, we would never know the thoughts, experiences, and opinions of people who are affected by these decisions. These perspectives are simply not captured in the available literature about species at risk litigation. On the other hand, journalists and newspapers may interview people who have participated in litigation, but they do not provide an in depth analysis of the meaning of these experiences and their implications. NGOs do provide ample information about their motivations through blog posts, press releases, and other outreach materials. Yet, it is still the case that different dimensions of the experiences of participants relating to litigation will be revealed through interview research, which aims to ask the right questions, interpret and analyze the responses in ways that uncover and disclose deeper meaning. This thesis attempted to do so using various methods, such as evaluation of the legal frameworks and examination of the cases,

as well as interview research; all these types of methods were used to answer the research questions.

One of the themes this thesis explored was the ability for litigation to foster working relationships between stakeholders. There were mixed opinions gathered from the interviews. For example, Interviewee 1, who stood on the witness stand during two of the court cases discussed in Chapter Five, believed that those experiences did not affect their relationship with government. Instead, it damaged their relationships with the businesses that were being sued by the NGOs, as they were suing the companies for their deadly building windows. Interviewee 3 stated that they would not advocate for litigation, because the money used could be spent on “much more important things.” They also stated that it does not set the right tone for any collaboration to happen. Interviewee 3 stated that the party that is being sued will not be there willingly, and will feel forced to be there, and that they, as a result, will only do the bare minimum that is required from them, and will not be easy “easy to work with.”

Interviewee 2, a lawyer who participated in one of the cases that was discussed in Chapter Five, believes that litigation can be one tactic in a larger strategy to meet a certain goal. They discussed some groups who form simply for the purpose of litigating, such as groups that are strictly against wind power, for example. These groups are different from NGOs, who have broader goals in mind, and for whom litigating is one part of their overall strategy. These groups participate in many other activities and outreach programs, and those initiatives will have preceding litigation, and will continue alongside with it. Interviewee 2 stated in regards to this:

...Your goal [is to] have a number of strategies and amongst those strategies, litigation might be one tactic in one circumstance ... if you conduct that litigation in a way that is ... respectful and fair, and ... if you maintain your other tactics ... handle it well, I don't see litigation as necessarily in any way undermining efforts at collaboration, because it's just [going to] be one tiny piece of the puzzle.

They also stated,

If you think of it [litigation] as one tool that groups wind into their tactics and strategies in support of particular campaign goals, you know, you come to understand that it can be ... a really important stick when all your other tools of carrots don't work, you know you have this stick sitting there. But usually you hit someone with a stick, it doesn't tend to foster a collaborative relationship." However, Interviewee 2 also stated that if litigation is going to be successful it has to "be connected into broader ethics efforts.

Interviewee 2 mentioned that the word "litigate" comes from the Latin word "litigatae," meaning to fight. They described litigation as having "a really adversarial fight with someone, that tends to not be - in my experience - it's not a tool for collaboration. It's usually the opposite." Interviewee 2's comments seemed to signify that while litigation should not undermine NGOs' collaborative and working relationships with government, the environment that is created in the process generally tends to develop tension between these groups.

Another question the thesis attempted to answer in regards to litigation was the circumstances that may NGOs to pursue a court case. Speaking about NGOs' motivations for going to court, and their willingness to do so, Interviewee 2 stated that it depends on the circumstances, as each one is unique and that most groups are not enthusiastic to go to court. They believe that is one reason why groups are so hesitant to participate in litigation, because they are "worried about damaging their relationships with... government."

Interviewee 2 also stated in regards to their experience during the OESA exemptions case that so far that they "have not seen a whole lot of evidence that ... Ministry of Natural Resource Bureaucrats are ... attempting to do right by species in Ontario." In this case, they believe that litigation is not about facilitating a stakeholder relationship, but rather "more about getting the government to start abiding the law." This was an example of a situation where NGOs believed it was too late to work together with government, and the only goal of the litigation was to coerce government into fulfilling its legal duties.

Interviewee 2 also discussed the credibility that NGOs can gain by participating in litigation, stating, “Litigation can ... give you a little bit more credibility ... it can actually show government that you’re ... serious about your commitments, that ... you’re not [going to] blink if it [government] doesn’t do it’s job, and particularly when you win, that can kind of solidify your place at the table...” This example was seen in the case of the greater sage-grouse, when NGOs were able to pressure the federal government into identifying the species’ critical habitat, and later, having an emergency order issued to protect the species. They also stated that when the federal government is not performing its duties to protect species and groups raise concern, there is a higher chance that they will be heard because of the previous cases and precedents that have been set in court. So far, Ontario has not had that “litigation threat in the background,” and Interviewee 2 wishes there was more of that litigation history in the province, and perhaps there will be in coming years. The interviewee believes that in the U.S, there is “more of an embrace of public interest litigation as a valid tool.” Some groups in the U.S, such the Sierra Club, and environmental NGO, have litigated for over 40 years. They also stated that litigation in the U.S does not really disturb working relationships between government and NGO’s and other stakeholders Interviewee 2 stated that in the American culture around litigation, the attitude surrounding public interest litigation is “recognized that if we go to court, you’re [going to] battle it out, but ... this is just part of everyone’s respective jobs.” This could imply that when species at risk litigation has a stronger history in Canada and in Ontario, that it will become embedded in the culture, and more accepted.

6.2 Recommendations

Currently, the federal SARA is responsible for more than 520 Canadian species that have been listed under the act. Some species have been reduced to tens of individuals, such as the Northern Spotted Owl, and others have faced declines of over 90% of their population, such as the Basking Shark. The goals and purposes of SARA include stopping the extinction of species, recovering species determined to be at risk, and managing other species of concern to ensure that they do not become endangered or threatened in the future (Mooers et al, 2017). Over the years, SARA has failed to achieve the measures it was meant to implement. The federal government

has been criticized for its shortcomings in terms of implementation, and integrity gaps in the listing process. After 2010, there was a halt in the listing of species under SARA; COSEWIC continued to make recommendations but they were not added to the federal list. Other issues include the backlog in creating recovery strategies for listed species, and in identifying their critical habitat, and a bias against marine and northern species in listing decisions. There are also not enough benchmarks to evaluate the successes and failures of recovery efforts (Mooers et al, 2017). These issues have been addressed numerous times in the literature, yet the federal government continues to fall short on its legal duties.

Recently, Environment and Climate Change Canada (ECCC) restated their commitment towards species at risk protection, and the listing process has begun moving again, and there is an increasing production of proposed recovery strategies (Mooers et al, 2017). ECCC has also released eight draft documents for public consultation, which clarify different sections and statements of SARA. These policies can lead to stronger implementation of SARA if implemented, and more effective protection for species, and thus better chances of recovery. However, these policies do not address some of the key issues that SARA has been criticized for.

Mooers et al (2017) make some key recommendations for the draft policies that ECCC is set to implement that can strengthen that clarification of some vague statements in SARA and ensure stronger implementation. One recommendation they make is that SARA should include a principle of accountability to make sure that the law is “enacted as intended,” (Mooers et al, 2017). They also recommend putting in place the precautionary principle in regards to anthropogenic structures that may be critical to the recovery of species at risk, if it is not known whether or not there is available natural habitat. Another important recommendation they make is that the government should consider the cumulative impacts from previous permits when considering new permit applications.

Mooers et al. specifically recommend that “quantifiable and verifiable targets” be set for species survival and recovery, and “spatial goals for species distribution,” not just minimum thresholds. The proposed Policy on Survival and Recovery does indicate minimum thresholds for

species survival and recovery, which is important, however there need to be quantifiable targets as an aim for species recovery. It is not enough to simply meet the minimum requirements; the goal should be to aim for recovered and thriving populations. SARA previously did not state the difference between what it means for a species to “survive” and “recover.” The federal government’s proposed Policy on Survival and Recovery clarifies these terms, stating that SARA’s aim is not merely to maintain species as endangered and only ensure survival, but to lead them to become self-sustaining populations, meaning recovered (Mooers et al, 2017).

Another proposed policy, the Listing Policy for Terrestrial Species at Risk, explains the timelines that ECCC uses before listing species under SARA. Mooers et al (2017) recommend that the gaps that are causing delays in listing should be addressed, and that the process should specify when files received from COSEWIC would be transferred to Cabinet. Another suggestion is that there should be stronger and more effective action when species at risk that reside on provincial lands are not receiving adequate protection (Mooers et al, 2017).

Mooers et al (2017) identify three core principles, goals, and strategies that must be incorporated for effective implementation of SARA: i) using an evidence-based approach; ii) remedying listing delays; and iii) an absence of targets. The first policy principle they recommend to adopt is the “evidence-based approach” to decision-making. An evidence-based approach involves collecting evidence, and making presumptions on how it will be used, determining burden of proof, and applying selected standards of proof. The SARA policies need to clarify their definition and application of an evidence-based approach (Mooers et al, 2017). The authors state that clarity on these matters is crucial, since how evidence is collected, who has the burden of proof, what standard of proof is applied, and what presumptions guide the process can all have substantial impacts on policy development and implementation (Mooers et al, 2017).

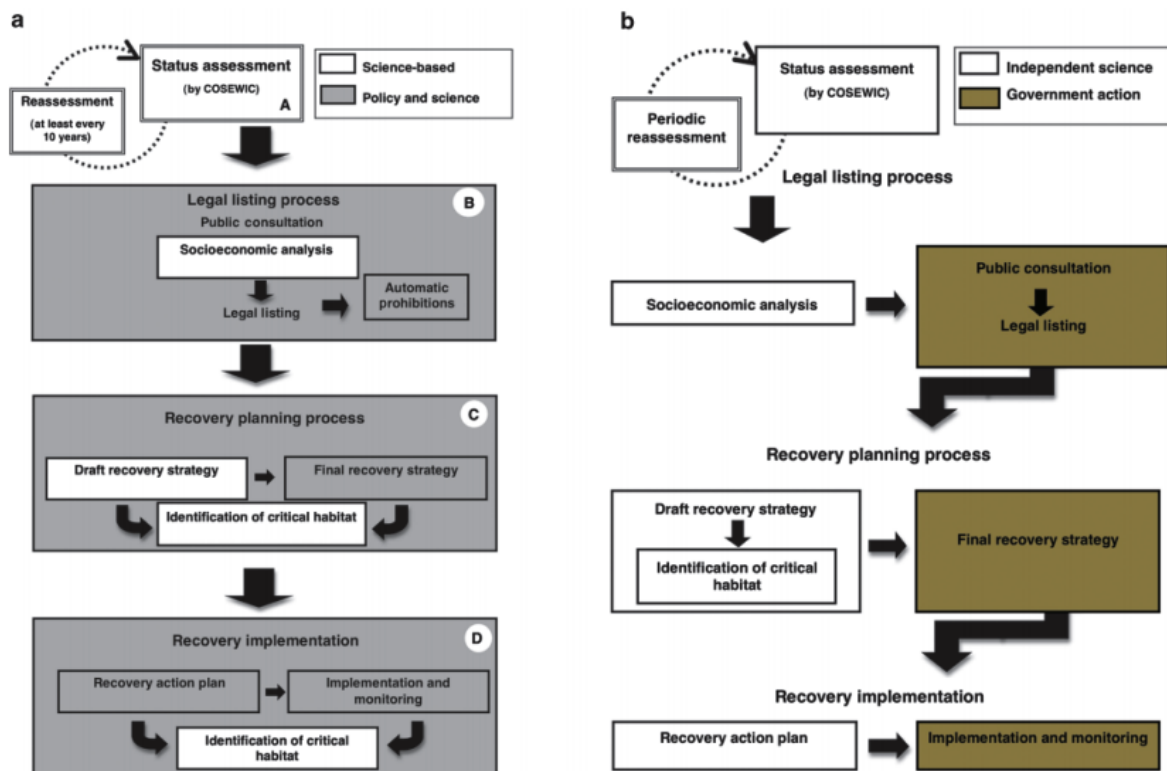
The second issue that needs to be addressed is listing delays (Mooers et al, 2017). There are over 100 species awaiting listing decisions, some for over a decade, “caught between scientifically proffered advice and politically motivated procrastination.” (Mooers et al, 2017). After SARA was initiated, for the first few years, the listing process was usually completed

within 24 months. However, in the years that followed, it began taking longer and longer for species to receive their listing decisions. The longer it takes to list a species, the longer it takes for it to be awarded protection, thus furthering its decline, and reducing its chances of recovery. Some examples include birds such as the bobolink, the barn swallow, and the eastern meadowlark; all three species are declining at around 20% a decade, and are awaiting listing decisions. The reason for the delay is that there is no specific deadline for the Minister of Environment to transfer COSEWIC's recommendation to Cabinet, leaving it as a matter of Ministerial discretion. The ECCC should include in its proposed *Listing Policy for Terrestrial Species at Risk* a specific timeline for when COSEWIC's assessments should be sent to Cabinet (Mooers et al, 2017).

The third suggestion is a need for sound targets (Mooers et al, 2017). The draft *Policy on Survival and Recovery* does make a distinction between survival and recovery of species, however it does not mention quantitative targets. Recovery strategies should have quantitative targets. Most recovery strategies currently set vague targets, without quantitative measures; this makes it hard to determine how effective protection and recovery measures are in actuality. The ECCC should create “measurable targets for defining thresholds for species survival and recovery, the extent of protection on nonfederal lands, and the quantity and quality of critical habitat implicated in conservation agreements.” Developing quantitative targets will require that monitoring programs are more effectively monitored and tracked, consistently with recovery efforts. Also, the data that is collected for actions taken under SARA should be available for all to read, so that people can track progress and “determine which protective actions and policy approaches have the greatest impact on Canada's species at risk,” (Mooers et al, 2017).

Scientific factors need to be better integrated into the social and economic analyses of SARA that are conducted before listing, for example, providing the data to independent, non-governmental peer review sources (Mooers et al, 2010). Another possibility is subjecting recovery strategies and recovery action plans to independent peer review. Mooers et al (2010) suggest that the gathering of scientific information and interpreting of that knowledge should be separated from the planning and action plan processes. This could be done by using the

information gathered during the “science-based aspects of the conservation process” to generate “independent and transparent scientific advice to feed back into a political process,” (Mooers et al, 2010: 848). There is a strong need for such a framework that incorporates independent scientific advice and is able to translate it to fit into the political process (Mooers et al, 2010: 848). Figure 12 illustrates the contrast between the current process and a recommended reformed process.



Schematics of the Canadian Species at Risk Act. (a) Current structure, highlighting independent science activities (in white) and activities that are a mix of policy and science (in gray). (b) Potential modification highlighting enhanced separation of science activities (in white) from government action (ochre). In this scheme, independent, peer-reviewed science offers transparent input to government decisionmaking. COSEWIC, Committee on the Status of Endangered Wildlife in Canada.

Figure 12: Comparing SARA’s current structure for species at risk, to a modified version that separates scientific activities from government actions. Reprinted from *Science, Policy, and Species at Risk in Canada* by Mooers et al: 844. Copyright 2010.

Recommendations for Ontario

The outcome of litigation which was pursued by NGOs in Ontario, challenging the regulatory exemptions under the *Endangered Species Act* resulted in the Ministry of Natural Resources continuing to be allowed to exempt industries including forestry, oil, gas and mining (Casey, 2016). These 19 exemptions from the OESA can be expected to have serious repercussions for Ontario's species at risk. For example, caribou can now be killed or hurt, and their habitat can be destroyed by businesses operating in forestry, if they have an approved management plan. When creating these exemptions, the ministry did not consider the impact of the regulations on the particular species affected. The litigation was also significant because it was the first time the legislative framework of the OESA was considered by a court during a process of judicial review. The NGOs argued that the exemptions were against the purpose of the OESA, which was to protect species at risk and not consider the socioeconomic impacts of their recovery. The Court of Appeals disagreed with their arguments, stating that the purpose of the ESA was to protect biodiversity while incorporating considerations of socioeconomic concerns... A ministry spokesperson stated that these changes "simplified the rules for landowners, municipalities and businesses while continuing to protect endangered and threatened species," (Casey, 2016). This is highly questionable; it can be anticipated that species at risk in Ontario will be even less protected from being harmed or killed, and less likely to have habitat protected from destruction than prior to the regulatory reform. The government should modify these regulations and/or study the effects of these reforms. The government must also consider if research shows that these species are being put at risk by these regulations and consider making changes to the regulations if that is the case.

The government of Ontario should also focus more on working with landowners. As discussed in the LEWS case in Chapter Four, many landowners in Ontario are not aware of the endangered and threatened species on their property, not the laws that protect them, or how they can help. They demonstrated that they were willing to help species at risk, thus it is the government's duty to inform residents of what they can do. This includes outreach

programs, stewardship programs, and land use conservation agreements. Greenbaum and Wellington (2010: 505 and 506) state, “for land that is privately owned and that has important and significant natural value (such as ‘areas of natural and scientific interest’), there are other legal tools that can facilitate protection. These tools include easements and restrictive covenants, and especially conservation easements... [A] conservation easement ... involves landowners entering into a voluntary agreement to preserve art of their land ... [Legal reforms] have meant that conservation easements can be granted to public bodies and non-governmental organizations...” Other conservation measures include federal and provincial tax incentives for landowners who protect ecologically significant areas.

A conservation easement is a “legal agreement, registered on title, between a landowner and a qualified organization (conservation organization, land trust, government agency, or municipality) that protects the property long into the future (typically 999 years). It creates a partnership,” (Ontario Nature-Federation of Ontario Naturalists, 2003). Through this agreement, the landowner will continue owning and managing the land while following restrictions set by the qualified organization. A conservation easement can also be seen as a “creative way to leave a legacy of conservation for the future while you continue to use the land,” and easements are “flexible land conservation tools,” (Ontario Nature-Federation of Ontario Naturalists, 2003). By donating a conservation easement, landowners may be eligible to receive a charitable tax receipt. Easements can also be structured to allow certain types of development or apply to certain areas of the property⁶⁸. A conservation easement donation that meets the requirements for the federal Ecological Gifts Program⁶⁹, which permanently protects areas considered to have important

⁶⁸ Some examples of restrictions that can be part of an easement include: limiting logging except for firewood, restricting hunting and trapping, except for personal use, prohibiting the removal of native species, prohibiting development, and prohibiting the removal of sand, gravel or rock from the property.

⁶⁹ The Ecological Gifts Program (EPG) “provides favourable income tax treatment to donors of ecologically sensitive lands (known as ecological gifts or ecogifts), including conservation easements,” (Ontario Land Trust Alliance, n.d). The EGP has been used as a tool to conserve habitats and areas of biological significance since 1995. Donating an area ensures that it is permanently conserved, and previous gifts have included wetlands, forests, prairies, and other areas. The recipients of the gifts are land trusts, and other conservation organizations and charities and government agencies that the donors can choose.

conservation resources, can be considered a tax-deductible charitable donation.⁷⁰⁷¹ The government needs to conduct stronger outreach to landowners so that they are aware of these options.

The Ontario Heritage Trust is another organization focusing on heritage conservation (Ontario Heritage Trust, n.d). The organization's heritage conservation easements can be used as a conservation tool, because they:

- “Provide provincial recognition of the heritage value of a property
- Identify a heritage building's historical significance and the architectural details and features that comprise the property's unique heritage character
- Raise awareness of good conservation practices
- Ensure that good stewardship practices continue to each subsequent owner” (Ontario Heritage Trust, n.d)

Land use agreements, as well as the stewardship options that were discussed in Chapter Five, are tools that the Government of Ontario can use to engage stakeholders in species at risk protection. It is essential that government involve landowners in this process, especially for vulnerable species that fall on private lands. As provincial governments in Canada enjoy jurisdiction over their natural resources, and the Canadian government has not yet implemented the “safety net” function under SARA for species that are not receiving adequate protection, it is important for Ontario to strengthen its protection for these species.

6.3 Further Directions for Future Research

This thesis topic can generate many potentially fruitful directions for further research. Entire theses can be written focusing on select interview questions that were used (see Appendix 2 for examples of interview questions that were asked). Research can be done focusing on the

⁷⁰ Ontario Nature-Federation of Ontario Naturalists and other members of the Ontario Land Trust Alliance, provide sources for consultation about land easements, as well as information about the process (Ontario Nature-Federation of Ontario Naturalists, 2003).

financial issues NGOs face when pursuing litigation, gaining insight into who pays for the litigation, and how NGOs acquire resources to pay for the costs of litigation. A study can be conducted using qualitative interview data to determine how financial costs impact NGOs decisions to pursue litigation; the research can also look into funding options for NGOs.

Other studies can focus on NGOs that do not pursue litigation, and use interview data to gain insight into the reasons why. Also, larger studies can be done by interviewing volunteers from NGOs, in relation to their thoughts on litigation, as well as their experiences, if they have participated in litigation. Quantitative research can be used to compare species at risk litigation across Canada, with their verdicts and outcomes. Research can be done to compare species at risk litigation cases in Canada or Ontario, with litigation in the United States. Another area that merits attention is landowner attitudes in Ontario. Landowners can be surveyed or interviewed to gain insight on their views, attitudes, and awareness towards species at risk, species at risk legislation, and federal and provincial governments.

A potential topic for future research could be comparison between COSEWIC and COSSARO's processes for listing species at risk. Research and analysis could be undertaken to explore the potential for collaborative efforts between COSSARO and COSEWIC, or collaborative efforts between federal and provincial governments in the pursuit of protection for species at risk.

Another avenue for future research could be to investigate consequences for non-compliance with species at risk laws, specifically focusing on factors such as rate of enforcement, and amounts of fines. Such research could examine circumstances and consequences for companies, and for individuals, who are charged with noncompliance with laws aimed at protecting species at risk.

6.4 Conclusions

This thesis attempted to gain some insight into litigation on behalf of species at risk in Canada. It did this by explaining the situation of species at risk in Canada, and the laws that are meant to protect them. It also examined situations where NGOs have taken businesses and governments to court, to compel them to fulfill their legal obligations relating to protection for species at risk. Lastly, the thesis used valuable interview data to present new information and perspectives from participants in litigation cases. Through this research, it was learned that the federal and provincial governments still have a long way to go to ensure that species at risk receive effective protection. Currently, SARA has implementation failures that have left many species waiting for listing decisions, and listed species waiting for their habitats to be identified in a recovery strategy, and protected. In Ontario, regulations that exempt certain industries from adhering to the OESA have essentially left all species at risk in the province at risk of being harmed or killed, and their habitats destroyed.

The interview data that was presented in this thesis demonstrates that there is much more work to be done if Canada's federal and Ontario's provincial government truly want to protect species at risk. It also suggests that litigation may become more common if the governments continue to fail at implementing species at risk legislation. Recent court cases have demonstrated that NGOs can win in court, and pressure governments into fulfilling their legal obligations. Obstacles that stand in their way are financial, and resource costs, and fear of damaging working relationships with government and businesses. However, while they are not actively seeking to be involved in litigation, NGOs such as Ecojustice have reaffirmed that they are "prepared to take [government] to court to ensure they fulfill their responsibility to protect plants and animals in Canada," (Podolsky & Robinson, 2017). A huge motivation for NGOs is seeing the results of their court "wins" translated into real life wins for the species they are fighting for, and awarding those species the legal protection they are entitled to.

Appendices

Appendix 1

Table 12: The ‘Big Five’ mass extinction events. Adapted from *Has the Earth’s sixth mass extinction already arrived?* By Barnosky et al: 51. Retrieved from NATURE, Copyright, 2011.

Event	Proposed Causes
The Ordovician event ended ~ 443 Myr ago; within 3.3 to 1.9 Myr 57% of genera were lost, an estimated 86% of species.	Onset of alternating glacial and interglacial episodes; repeated marine transgressions and regressions. Uplift and weathering of the Appalachians affecting atmospheric and ocean chemistry. Sequestration of CO ₂ .
The Devonian event ended ~359 Myr ago; within 29 to 2 Myr 35% of genera were lost, an estimated 75% of species.	Global cooling (followed by global warming), possibly tied to the diversification of land plants, with associated weathering, paedogenesis, and the drawdown of global CO ₂ . Evidence for widespread deep-water anoxia and the spread of anoxic waters by transgressions. Timing and importance of bolide impacts still debated.
The Permian event ended ~251 Myr ago; within 2.8 Myr to 160 Kyr 56% of genera were lost, an estimated 96% of species.	Siberian volcanism. Global warming. Spread of deep marine anoxic waters. Elevated H ₂ S and CO ₂ concentrations in both marine and terrestrial realms. Ocean acidification. Evidence for a bolide impact still debated.
The Triassic event ended ~200 Myr ago; within 8.3 Myr to 600 Kyr 47% of genera were lost, an estimated 80% of species.	Activity in the Central Atlantic Magmatic Province (CAMP) thought to have elevated atmospheric CO ₂ levels, which increased global temperatures and led to a calcification crisis in the world oceans.
The Cretaceous event ended ~65 Myr ago; within 2.5 Myr to less than a year 40% of genera were lost, an estimated 76% of species.	A bolide impact in the Yucata´n is thought to have led to a global cataclysm and caused rapid cooling. Preceding the impact, biota may have been declining owing to a variety of causes: Deccan volcanism contemporaneous with global warming; tectonic uplift altering biogeography and accelerating erosion, potentially contributing to ocean eutrophication and anoxic episodes. CO ₂ spike just before extinction, drop during extinction.

Note: Myr - million years. Kyr - thousand years.

Appendix 2

Developing interview questions

An in-depth interview should be a “personal and intimate encounter in which open, direct, verbal questions are used to elicit detailed narratives and stories,” (DiCicco-Bloom & Crabtree, 2006). It was not possible to ask the candidates the same basic questions, since the interview Interviewees worked in different fields, and some on different litigation cases. Thus, some of the questions had to be tailored for each Interviewee. The interview questions were based on the guiding research questions that this thesis was trying to answer. The participants were asked about their experiences, opinions, and thoughts surrounding species at risk litigation, and other discussions often stemmed from those questions.

The following is a sample list of questions that interviewees were asked during the interviews.

Sample interview questions

Introductory questions

- Can you tell me your name and your position at your workplace or organization?
- What kind of work do you do in regards to your job?
- Can you tell me a bit about your research? Did your research tie into the [legal] case?
- Can you tell me a bit about your own research involving endangered species?

Questions about the federal/provincial/municipal governments

- Are you familiar with our current and our federal government’s process for protecting species at risk either through SARA or the Ontario ESA?
- Do you think they’re doing a good job in protecting species overall?
- In your personal opinion, do you think that these structures that are in place are useful at protecting species at risk?
- What are some issues that municipal government can face that can come in the way of protecting endangered species, such as resource allocation or money, and does this affect the approach that they take?

On litigation cases

- Do you think litigation on behalf of species at risk would be perhaps a good tool for NGOs to use to protect species at risk?
- Do you think that litigation cases can facilitate collaboration, or do you think they create a hostile situation, where groups are kind of pitted against one another?
- What can you tell me about these cases and the particular endangered species that are involved?
- [In regards to the FLAP case], why was this case so successful?
- What was your role in relation to this case, and were you involved specifically in the litigation? How did it get started, the litigation?
- Was there any attempt to solve this outside of court, or did they just go straight to litigation?
- Can you discuss the thinking that went into pursuing litigation as a strategy rather than volunteerism? What was the rationale for choosing litigation?
- What kinds of lessons did you learn from this experience? Or if you could re-do it, is there something you would have done differently?
- Are resources an issue for you [NGOs]? Does money and resource allocation affect the approach that you take? Especially when it comes to litigation?
- What kind of positive results can you achieve from litigation, even if your case doesn't end favourably for your organization, and what are the different ways that objectives and goals can be achieved from litigation, besides having a positive result in court?
- What role does the public and media play in all of this, and what do you think the public's perception is about the use of litigation to protect species at risk?
- Is litigation going to gain stronger traction in the future, to other species, and if not, why not and what obstacles could be standing in the way, and if yes, are there downsides?
- Do you think litigation creates a more hostile and divisive environment, or do you think it has the potential to lead to more collaboration between government and other stakeholders?
- I was wondering if you could tell me a bit about what it is exactly that made this case, and the results, so successful. Did it make a difference due to the fact that there were a couple species at risk involved, or was that not a significant factor?
- How do you feel about using the legal system as kind of a measure to fight on behalf of these species at risk, and do you think NGOs participate kind of willingly or is it kind of more like a last resort when they have no other option?
- Can you speak about your relationship, working with different groups on this case, with researchers and scientists, and NGO's, and in your opinion, how can these different stakeholders can work more effectively when collaborating on species at risk protection?
- What are your views on potential effectiveness of litigation for other species at risk cases in Ontario?

Questions about collaborative governance

- You've collaborated with different levels of government, and NGOs and scientists in your work, so in your opinion, how can these different stakeholder groups work more effectively to collaborate on species at risk protection, and if you don't believe litigation is the solution, what else can they do?
- Can you describe the experience of working with different groups of stakeholders on something like this and how can government can work more effectively I guess with NGO's, lawyers, scientists, and how can they better involve the different stakeholders? Do you have any inputs on that?
- Do you think in court cases that these types of [collaborative] relationships can be fostered?
- Do you think collaborative governance can be facilitated through litigation, or just does it pit groups against each other?

Appendix 3

Selected Species at Risk

The threats and protection measures in place for the case study species are discussed below.

3.1 Canada Warbler (*Cardellina canadensis*)

Threats:

The SARA registry profile for the species states that the reasons for the decline in the population have not been identified as of yet. The main factor is thought to be habitat loss and degradation. The northern Andes forests, which are the wintering grounds of the bird, are one of the most threatened in the world. Around 90% of the forests were cleared for agricultural purposes or for fuel wood or illegal drug cultivation. In eastern Canada, swamp forests have been converted for agricultural activities. In western Canada, a lot of the boreal forest has been cleared for the development of roads (Government of Canada, 2017b).

Protection:

The Canada Warbler is protected under the SARA and under the 1994 Migratory Birds Convention Act, which prohibits the harming of birds, and their nests and eggs. The Warbler is also protected under the 1982 British Columbia Wildlife Act, which prevents its nesting areas from being destroyed. The warbler can be found in 21 Canadian national parks, where the Canada National Parks Act will apply. In the U.S, the bird is protected under the United States Migratory Bird Treaty Act of 1918, which prohibits harming birds, and the disturbance and destruction of their nests and eggs. The federal recovery strategy for the Canada Warbler was released in March 2016 (Government of Canada, 2017b). Multi Species Action Plans were released for various national parks in 2016 and 2017, which this species falls under (Government of Canada, 2017b).

In Ontario, The Canada Warbler (*Cardellina canadensis*) was listed as a species of “Special Concern” in 2009. Since the species is of special concern, neither it nor its habitat are

protected in Ontario. The government of Ontario lists a few things that people can do to help the bird, such as reporting a sighting, volunteering, reporting illegal activity, or being a “good steward,” by looking into stewardship programs or protecting forests or natural vegetation on one’s property (Government of Ontario, 2017a).

Distribution and Population:

The Canada Warbler (*Cardellina canadensis*) was assessed by COSEWIC in April of 2008, and given a status of “threatened.” The bird is small, 12-15 cm long. The males are more brightly coloured than the females. The bird breeds throughout southeastern Canada, the northeastern U.S, and the Great Lakes area, as well as in a part of the southern Appalachian mountains in eastern Tennessee, western South Carolina, and the very northern part of Georgia. 80% of its global breeding range is situated within Canada, everywhere except in Nunavut and Newfoundland and Labrador. 85% of the global breeding population is in Canada, and the Canadian population is estimated to be 2.7 million individuals. The Breeding Bird Survey data shows that the population declined 4.5% yearly between 1968 and 2007, equalling a total loss of 85% of the population. From 1997 to 2007, the population declined at a rate of 5.4% yearly, equalling a total decline of 43% in that decade. Most of the decline is happening to the population in Ontario, Quebec, and the Maritime provinces (Government of Canada, 2017b).

Habitat:

The Canada Warbler can be found in different forest types, but mostly resides in wet, mixed deciduous-coniferous forests with dense shrubs. According to the SARA Species Profile, the bird is also found in “riparian shrub forests on slopes and in ravines and in old-growth forests with canopy openings and a high density of shrubs, as well as in stands regenerating after natural disturbances, such as forest fires, or anthropogenic disturbances, such as logging.” In winter, the bird lives in mature cloud rainforests that are at an elevation of 1000 to 2500m, and old-growth forests, forest edges, coffee plantations, edges of agricultural fields, and “semi-open area.” The bird spends its Winters in South America, in rain forests, second-

growth forests, coffee plantations, and the edges of farm fields; its habitats there are also declining. Since the 1970's, around 95% of the cloud rainforests where it winters have been turned into agricultural areas. In the eastern portion of its breeding range, wet forests have been drained for urban development or farming uses (Government of Canada, 2017b).

Biology:

The bird likes to make its nests on the ground or as close to it as possible. The female will lay 4-5 eggs a year, and they will be incubated for 12 days. After hatching, chicks will stay in the nest for another 10 days, and are dependant on the parents for 2-3 weeks after leaving the nest. Their migration begins on July 10, and ends around September 20. Between May 12 and June 14, the bird will come back to its Canadian breeding grounds. During breeding times, the bird is territorial but during dispersal and migration and on its wintering sites, the bird can flock in small groups with other bird species. The Warbler eats mostly flying insects, such as mosquitoes, butterflies, moths, and spiders when available (Government of Canada, 2017b).

The bird breeds in mostly wet forests with dense shrub layers, which help to hide their nests that are found near the ground, usually on logs or roots or along banks of streams or small mounds on the ground. Its main breeding range is in the Boreal Shield, and north in the Hudson Plains area, and moves south into the Mixed wood Plains. In Ontario, the birds breeds mostly along the Southern Shield (Government of Ontario, 2017a).

Action Plans including the Canada Warbler (*Cardellina canadensis*):

- Multi-species Action Plan for Bruce Peninsula National Park and Fathom Five National Marine Park of Canada (2016)
- Multi-species Action Plan for Kejimikujik National Park and National Historic Site of Canada (2017)
- Multi-species Action Plan for Kouchibouguac National Park of Canada and associated National Historic Sites of Canada (2016)

- Multi-species Action Plan for Point Pelee National Park of Canada and Niagara National Historic Sites of Canada (2016)
- Multi-species Action Plan for Prince Edward Island National Park of Canada (2016)
- Multi-species Action Plan for Pukaskwa National Park of Canada (2017)
- Multi-species Action Plan for Thousand Islands National Park of Canada (2016)

Appendix 3.2 Olive-sided Flycatcher (*Contopus cooperi*)

Threats:

The factors causing a decline in Olive-sided Flycatcher populations are not known, but it is estimated to be due to loss and alteration of its habitats. The birds are more abundant in young stands after a wildfire or a commercial timber harvest. Despite increases in potential habitat areas, the population is declining, and it is not known why. Recent studies show that harvested areas may be less suitable for breeding than stands that have grown after a fire. The loss and alteration of habitat in their wintering grounds may also be a threat to the bird. Around 85% of the Andes forests where the birds spend their winters have been altered. Currently, there is no in-depth data regarding changes to the winter habitat. Another potential factor may be the declining insect populations on both the breeding and winter grounds, as other “aerial insectivore bird species,” have experienced similar declines in populations (Government of Canada, 2017c).

Protection:

Federally, the Olive-sided flycatcher is protected under the SARA; it was assessed by COSEWIC and listed in 2008 under the Act. It is also protected by the 1994 Migratory Birds Convention Act, which prohibits any harming of birds and disturbance or destruction of their nests and eggs. The Canada National Parks Act protects birds that breed in national parks. In the United States, the bird is protected under the Migratory Bird Treaty Act of 1918, which disallows any harm to them and any disturbance or destruction of their nests and eggs (Species at Risk Public Registry, n.d b). A recovery strategy for the birds was published in 2016. It is also

part of a series of multi-species action plans released by the federal government for various national parks (Government of Canada, 2017c).

In Ontario, the bird was listed as a Special Concern species in September 2009, meaning neither it nor its habitat are protected. While the government of Ontario does not award the species any protection, the government website lists some activities that interested members of the public can partake in, such as to report a sighting, volunteer with a local nature club or a provincial park with its work on species at risk, or to report illegal activity. Landowners are encouraged to look into stewardship programs for which they may be eligible (Government of Ontario, 2017b).

Description:

The Olive-sided Flycatcher is a songbird, 18-20 cm long. The adults are a brown-grey colour on the tops and sides with white throats, breasts, and bellies. The males have longer wings than the females. The Olive-sided Flycatcher has a distinct three-note whistle (Government of Canada, 2017c).

Distribution and Population:

The Olive-sided Flycatcher breeds in various forests in Canada and the western and northeastern United States. In Canada, it is most abundant in southern Yukon and the “coastal forests” of British Columbia. The bird winters in Panama and the Andes Mountains in Venezuela, Peru and Bolivia. The total world population was estimated to be 1.2 million individuals in the 1990’s, which dropped to about 700,000 individuals by 2005, of which 450,000 breed in Canada. Since 1960, the species has declined throughout its range; from 1968 to 2006, the Canadian population had an average decline of 4% a year, and an overall decline of 79%. The decline from 1996 to 2006 was 3.3%, a 29% decline over a decade (Government of Canada, 2017c).

Habitat:

The Olive-sided Flycatcher likes open spaces such as forest clearings and forest edges near water, or even human-made areas such as logged grounds or burned forests or openings inside old-growth forest stands. The birds like to perch in tall trees with good, high perching spots which help them to forage, and gives them a good point from which to wait and sit and grab flying insects from the air. In the boreal forests, the birds prefer locations in or near wetland areas. The amount of available old-growth forest decreased during the 20th century, but logging operations created openings where the birds can breed, so there might not have been a significant change in favourable habitat for the birds. However, birds that nest in natural opening areas tend to have higher breeding rates than birds nesting in harvested habitats (Species at Risk Public Registry, n.d b). In Ontario, they like to nest in conifers such as the White and Black Spruce, Jack Pine, and Balsam Fir. In Canada, the bird breeds in every province and territory except in Nunavut. It is abundant along the west coast, starting from Southern British Columbia down to California. It can be found throughout the central and northern areas of Ontario (Government of Ontario, 2017b).

Biology:

Olive-sided Flycatchers arrive in Canada for breeding between April and June, usually in mid-late May. The birds are a monogamous species, and there is usually significant space between the nests. The females are responsible for choosing a nesting site, building the nest, and laying an egg every day; they lay anywhere from 2 to 5, usually 3. The female is also responsible for incubation of the eggs, which takes 15 to 19 days, while the male provides food for the female. Both parents feed the young when they hatch. The birds remain in the nestling period for 17 to 23 days, when they are too young to leave the nest. Once the bird's feathers grow in, their parents still feed them for up to another week. In late July, the fall migration period begins; most birds will migrate to the wintering area starting Mid-August to early September. The Olive-sided Flycatcher will fly over 8000 km. Currently, their lifespan is not known. When looking for food, it likes to perch until it spots a flying insect, which it will grab and return to its perch. It mainly feasts on hymenopterans such as bees, wasps, ants (Government of Canada, 2017c).

Action Plans including the Olive-sided Flycatcher (*Contopus cooperi*):

- Multi-species Action Plan for Banff National Park of Canada (2017)
- Multi-species Action Plan for Bruce Peninsula National Park and Fathom Five National Marine Park of Canada (2016)
- Multi-species Action Plan for Fort Rodd Hill National Historic Site of Canada (2017)
- Multi-species Action Plan for Gros Morne National Park (2016)
- Multi-species Action Plan for Gulf Islands National Park Reserve of Canada (2017)
- Multi-species Action Plan for Jasper National Park of Canada (2017)
- Multi-species Action Plan for Kejimikujik National Park and National Historic Site of Canada (2017)
- Multi-species Action Plan for Kootenay National Park of Canada (2017)
- Multi-species Action Plan for Kouchibouguac National Park of Canada and associated National Historic Sites of Canada (2016)
- Multi-species Action Plan for Pacific Rim National Park Reserve of Canada (2016)
- Multi-species Action Plan for Point Pelee National Park of Canada and Niagara National Historic Sites of Canada (2016)
- Multi-species Action Plan for Prince Edward Island National Park of Canada (2016)
- Multi-species Action Plan for Pukaskwa National Park of Canada (2017)
- Multi-species Action Plan for Terra Nova National Park of Canada and the National Historic Sites of Canada in Eastern Newfoundland (2017)
- Multi-species Action Plan for Waterton Lakes National Park of Canada and Bar U Ranch National Historic Site of Canada (2017)
- Multi-species Action Plan for Yoho National Park of Canada (2017)
- Multi-Species Action Plan, Mount Revelstoke National Park of Canada and Glacier National Park of Canada (2017)

Appendix 3.3 Case Study: Blanding’s Turtle (*Emydoidea blandingii*):

The Blanding's Turtle is another species that will be the subject of a case study for this thesis. The Blanding's Turtle is a semi-aquatic freshwater turtle. It has one of the smallest global ranges of any North American turtle. It is also listed as at risk in 17 of the 18 jurisdictions within which its range falls (Millar and Blouin-Demers, 2012: 19). The terrestrial habitat that surrounds wetland is a critical part of the Blanding's Turtle habitat (Millar and Blouin-Demers, 2012: 27). Agricultural lands that are within 1km of residential wetlands are having negative impacts on the turtle's habitat (Millar and Blouin-Demers, 2012: 27). Millar and Blouin-Demers (2012) recommended that Blanding's Turtle management plans should involve protecting the terrestrial habitat that surrounds residential wetlands, and stop building roads in and near occupied habitat, and to "identify movement corridors for isolated populations," (Millar and Blouin-Demers, 2012: 18).

Threats:

One of the major threats to Blanding's Turtles and a cause of nest failure is nest predation from raccoons, skunks, foxes, and coyotes. The mature adults can protect themselves because their size and carapace strength hinders attempts from possible predators. The cool summer temperatures may also be causing more nest failures, leading to the production of "less viable hatchlings," who need a certain amount of heat to develop fully. Recently, it was discovered that nest failure could also be caused by attacks from sarcophagid fly larvae (Government of Canada, 2017a). Since the turtles dig their nests in the ground, they can also be destroyed by vehicles, predators, construction, or flooding. The development of wetlands and their surrounding areas also reduced the amount of available and satisfactory habitat, and new development involves the construction of roads and an increase of transportation traffic along those areas. Since the females usually lay eggs in the gravel shoulders of roadways, more traffic increases the risk of mortality to the nesting females and emerging hatchlings (Government of Canada, 2017a).

The Blanding's Turtle is also highly coveted as a pet due to its brightly coloured chin and throat, and "overall beauty." Poachers do not care about the turtle's age, so usually female adult turtles end up being caught, as they are easily locatable; a reduction of females that are able to

reproduce is seen as a serious threat to the species' survival, and the capture of these turtles for the pet trade is an increasing threat. Currently, it is difficult to determine the exact impact that it is having on the population size (Government of Canada, 2017a).

Protection:

Currently, the Great Lakes/St. Lawrence population of the Blanding's turtle is protected under SARA. The turtle is protected under the Canada National Parks Act in Point Pelee and Georgian Bay Islands national parks. Its habitat is protected under SARA in Gatineau Park and in the Big Creek, Long Point and Sainte-Claire national wildlife areas, which are federal lands (Government of Canada, 2017a).

The federal government has also posted a "Status of Recovery Planning" for the Blanding's Turtle. The Recovery Strategy for the Great Lakes / St. Lawrence population has also been posted. The species is part of an Ontario Multi-Species Turtles at Risk Recovery Team, and a Quebec Turtle Recovery Team (Government of Canada, 2017a). According to the federal government, the goal of the recovery strategy is to "ensure the long-term persistence of the Blanding's Turtle population throughout its historical range in Ontario," and that, "more specifically, the strategy will maintain the current distribution, ensure viability of populations, and increase connectivity among populations," (Government of Canada, 2017a). The government acknowledges that there are gaps in the knowledge of the species and that more research is required for successful conservation and recovery. The Ontario Multi-species Turtle at Risk Recovery Team is currently assessing the threats to various turtle species in the province. The team has found that the strongest hazards to the species are habitat loss, degradation, and fragmentation, along with predation, and traffic mortality (Government of Canada, 2017a).

In Ontario, the Blanding's Turtle is listed as "threatened" under the Ontario ESA, so both it and its habitat are protected. The species was already assessed to be threatened when the new ESA took effect in 2008 (Government of Ontario, 2014a). The turtle's habitat is protected under the Ontario Provincial Policy Statement of the Planning Act, and it is also mentioned in

Ontario's process for forest management planning. Its habitat is also protected in Rondeau, Killarney, Algonquin and Long Point provincial parks (Government of Canada, 2017a).

The government of Ontario lists some ways that concerned members of the public can get involved in the species' recovery efforts. Community members can report a sighting to the MNR, which tracks species at risk, or to the Natural Heritage Information Centre or to the Ontario Reptile and Amphibian Atlas. They are also encouraged to volunteer with local nature clubs or provincial parks in surveys or other species at risk focused stewardship work. Private landowners are encouraged to look into stewardship programs if they find a Blanding's Turtle on their property, and can also protect wetlands and surrounding natural vegetation on their property. People are also encouraged to watch for turtles on the road, especially between May and October, and to never purchase turtles caught in the wild, and to notify the MNR if one comes across native turtle species for sale, or if they observe other illegal activities (Government of Ontario, 2014a).

The Blanding's Turtle (*Emydoidea blandingii*) resides in Canada in Ontario, Quebec, and Nova Scotia (Government of Canada, 2017a). The Nova Scotia population was designated threatened by COSEWIC in April 1993. The species was re-assessed in May 2005 and given an endangered designation under SARA. The Great Lakes/St. Lawrence population was designated threatened in May 2005, and was last assessed by COSEWIC in November 2016 and determined to now be endangered.

Description:

The Blanding's Turtle is a medium-sized freshwater turtle, with a bright yellow lower jaw and throat. Their necks are long, and the sides of the neck and the top of their head are dark brown or black for the males, and lighter and mottled for the females. The adults have a domed, smooth upper shell that can grow up to 27cm long. The upper shell, known as the carapace, is black or dark brown, and occasionally grey or light brown, and has tan or yellow lines or spots scattered on top of the shell. As the turtle grows older, its markings get smaller and may disappear. The lower shell, known as the plastron, is a bright yellow, and is hinged so the turtle

can close its shell after retreating its head and feet inside (Government of Canada, 2017a). The females' plastrons are flat, but the males have concave plastrons, which help with copulation. The turtle's upper jaw is jagged and its mouth turns upwards, making it look as though the turtle is smiling. The younger turtles are usually brighter in colour, but they develop their spots and line on the shell in their second year. The juveniles' plastron hinge is not functional until they become adults, and their tail is longer and continues beyond the end of the carapace (Government of Canada, 2017a).

Distribution and Population:

In Canada, the species is mostly found in the southern Great Lakes area and nearby regions. The turtle's range begins from the very southwestern part of Quebec and southern Ontario and moves towards central Nebraska in the south and western parts of its range, and towards Ohio in the eastern part. In the U.S, the turtle resides in the northern states down until Missouri, and in Nebraska in the west towards Ohio and Michigan in the east. It can also be found in smaller, secluded populations in New York, Massachusetts, New Hampshire, and Maine. Around, 20% of the turtle's range is found in Canada, mostly in Ontario (Government of Canada, 2017a).

The Canadian population is divided into two groups: one is the Great Lakes/St. Lawrence population, and the other is the Nova Scotia population. In the Great Lakes/St. Lawrence region, the turtle can be found throughout southern and south-central Ontario going northeast up to the Chippewa River in Algoma West, and east across the province into the very south-western part of Québec. The Ontario distribution of the turtle is broken up and divided; the turtle is found in and around the Great Lakes Basin area, and in the southern central and eastern Ontario regions. The Government of Ontario also created a "general habitat description" document in 2013, which is described as "technical, science-based documents that provide greater clarity on the area of habitat protected for a species," (Government of Ontario, 2014a). The Quebec population is rich in the Gatineau Park area and neighbouring areas, near the Ontario border close to the Ottawa River's north shore. The SARA Species profile states that it is difficult to estimate the size of the Great Lakes/St. Lawrence population as there is limited data, and that rough estimates

say there are 10,000 individuals. The numbers of Quebec population are not known, but it is estimated to be very small. The population in southwestern Nova Scotia is small and broken up into different areas. In general, Blanding's Turtle populations are usually segregated from each other, and they have a very low density, with less than one adult per square kilometre. Studies show that the Great Lakes/St. Lawrence population is declining, the causes being habitat destruction and fragmentation. The subpopulations are becoming even more isolated because of the "sizeable road system that crosses their habitat." Other factors contributing to high adult mortality are the turtle's "late maturity, low reproductive output and an extremely long life," (Government of Canada, 2017a).

Habitat:

For the most part, the Blanding's Turtle is an aquatic species. In the summer, it resides in freshwater environments of various types, such as lakes, permanent or temporary pools, slow-flowing streams, marshes and swamps. The turtles like nutrient-rich shallow water with organic soil and thick vegetation. The adults can be found in open or partially vegetated states, and the juveniles are more antisocial and prefer areas with dense aquatic vegetation, including sphagnum, water lilies, and algae, and they like to stay along the water's edge. The turtle also requires terrestrial environments, and is able to voyage over long distances, and through different water bodies to find preferable sites where it can nest and rest in the sun. Besides during traveling, it usually keeps to those sites. The turtle likes to nest in dry conifer or mixed hardwood forests, up to 410 metres from a water body. The females also prefer partially vegetated areas, like fields or roadways. The turtles dig their nests in different types of loose substrates, like in sand, organic soil, gravel, and cobblestone. They spend their winters in permanent pools that are around 1 meter deep, or in slow-flowing streams (Government of Canada, 2017a).

Biology:

In Canada, the females mature late, up to 25 years old. They produce a clutch with 3 to 19 eggs every 2 to 3 years, which are laid in June, and hatchlings appearing in late September and early October. The cool Canadian climate means the turtles have a "short active season," which affects the success of their nests. The development of the embryo depends on the

incubation temperature, and eggs will not develop properly if they are incubated below 22°C or above 32°C, and since the lower limit is quite high, there is a high embryo mortality rate in Canada. The incubation temperature also affects the sex of the turtles; eggs that are incubated below 28°C produce males, and eggs that are incubated above 29°C produce females. The Blanding's Turtle has a long lifespan compared to other turtles; it can live in the wild for more than 75 years. Its long lifespan, late maturity, small reproductive output, and low yearly recruitment, (meaning the amount of turtles that make it to the adult stage) make this species liable to even small increases in the annual mortality of the adults (Government of Canada, 2017a).

While the Blanding's Turtle prefers shallow water, such as large wetlands and shallow lakes with water plants, they can be found hundreds of meters away from any water body, usually when looking for a mate or voyaging to a nesting site. The turtles like to hibernate in the mud at the bottom of permanent water bodies; they do this from late October until the end of April (Government of Ontario, 2014a).

3.4 Initiatives for Blanding's Turtles:

Nova Scotia has a Nova Scotia Species At Risk website, which highlights some of the province's endangered and threatened species and what is being done in terms of conservation and recovery. The website has a page for the Blanding's Turtle, and includes research publications, information about the species, and details of its conservation projects (Kejimikujik Area Stewardship Programs, n.d).

The Kejimikujik Area Stewardship Program carries out a variety of research projects to track Blanding's Turtles populations. One of the programs is nest monitoring, which involves monitoring nesting sights nightly during the nesting season from early June to early July. Nests where eggs have been laid are covered with a wire mesh cage to protect them from prowling predators. The eggs are checked for emerging hatchlings in September and October and the

hatchlings are measured, marked, weighed and then released; some will have a small radio attached to them. The purpose of this program is to help protect the nests to increase the number of young turtles that survive in the province. This is a volunteer and community-based program. In 2006, 50 volunteers and researchers worked for a total of 1500 hours in Kejimikujik and were able to protect 19 nests in the park, and in local communities, 10 families protected 16 nests on or near their properties. In the fall, 74 hatchlings emerged in Kejimikujik, and 32 in Pleasant River and 10 at McGowan Lake (Kejimikujik Area Stewardship Programs, n.d). Another initiative is radio tracking, which is done on Blanding's Turtles populations in southwest Nova Scotia. Some turtles are fitted with radio-transmitters that will emit a frequency, which will be picked up by a radio-receiver. The purpose of these studies is to use radio-telemetry to learn more about the turtle's movement patterns, and "behaviour and seasonal habitat use," so that researchers can study and protect their summering, nesting, and wintering sites (Kejimikujik Area Stewardship Programs, n.d). The third initiative is population surveys. These surveys are done from late-spring to early fall, where volunteers and researchers look for turtles using "visual and live-trapping surveys." Visual surveys involve canoeing lakes, rivers and wetlands in search of the turtles. Live-trapping involves setting and checking aquatic hoop-net traps with sardine baits. The purpose of these surveys is to get a grasp of how many turtles are in the area, and the distribution and population size of the turtle in the province (Kejimikujik Area Stewardship Programs, n.d).

Biodiversity loss in turtle species in Canada

The IUCN Red List criteria has determined that 21% of migratory marine species are threatened, with sea turtles being the most threatened at 85% (Lascelles et al, 2014: 111). Reptile species are in decline worldwide and turtles are especially vulnerable (Erb et al, 2015: 1062). Monitoring population trends in these species is crucial to list and protect them, evaluate the needs of their habitats, and to track whether conservation and management approaches are working. Tracking terrestrial turtles can be difficult because of their burrowing behaviour and colouring, which can make it difficult to spot them. From 2005 to 2015, the number of reptiles on the IUCN Red List had doubled (Erb et al, 2015: 1063). 21% of reptile species worldwide

were deemed to be at risk, and 47.6% of turtle species were listed as threatened in 2010. The major causes of population declines are habitat alteration (including habitat loss, fragmentation, and degradation), disease, and using turtles for the pet trade or in the food market (Erb et al, 2015: 1063).

Exotic species, including some turtle species, can be an influential driver of biodiversity loss and a critical component of global biological change (García – Díaz et al, 2015: 1078). Before the end of the 20th century, many vertebrate species were purposely introduced in areas outside of their native range, for acclimatization purposes and to create self-sustaining exotic populations. In current times, exotic species are most likely accidentally introduced, which usually happens when captive species and pets escape or are released or accidentally carried over from somewhere else. Species that are intentionally introduced to an area are usually more successful at establishing a population. Another form of unintentional introduction is the vertebrate pet trade worldwide, which has increased and is a significant source of new introductions of exotic species. In Europe, pet escapes are one of the strongest causes of new introductions of mammals, birds, reptiles, and amphibians (García – Díaz et al, 2015: 1078).

Freshwater turtles are some of the most traded pets worldwide, and usually traded in large quantities and at low cost (Masin et al, 2014: 228). There are more species available and owners often release them later into natural wetlands (Masin et al, 2014: 217). Turtles can arrive in new environments by escaping or more often, being released by their owners (Masin et al, 2014: 217). These turtles can become invasive species if introduced in areas with climate that is suitable for them (Masin et al, 2014: 228). Since the 1980's, the exotic pet reptile trade has increased in developed countries (García – Díaz et al, 2015: 1078). Similarly, there has been an increase in new introductions of exotic reptiles (García – Díaz et al, 2015: 1079). Due to the pet trade, fresh-water turtles have experienced some of the highest increases in new introductions, and in establishing exotic populations worldwide. The most frequently traded turtle worldwide is the slider turtle. Between 1998 and 2002, the U.S exported over 23.6 millions slider turtles, and the turtles have been introduced in 73 other countries. Exotic populations of slider turtles can cause issues in their exotic range for native species, as they outcompete them, and can also

transmit diseases and parasites. Pet turtles can also transmit *Salmonella* to humans (García – Díaz et al, 2015: 1079).

In Ontario, turtles are protected under the federal SARA, the Ontario Endangered Species Act (OESA), the Ontario Planning Act, and the Ontario Fish and Wildlife Conservation Act (Ontario Nature, n.d). Protection of a species' habitat is not sufficient when there are multiple threats affecting its existence; this further demonstrates the need to monitor populations of long-lived species (Browne and Hecnar, 2007: 421). Turtles are a species that can be more sensitive to human changes due to their life history, which includes low reproduction rates, late maturity, and specific habitat requirements of wetlands and terrestrial environments (Browne and Hecnar, 2007: 421). Serious declines in turtle populations can go unnoticed because of their long lifespans, making it difficult to track local extinctions while there are older turtles (Browne and Hecnar, 2007: 422). This, declines should be detected before these risks become more serious. Major threats to turtles are “habitat loss, population isolation, subsidized predators, road mortality, collection as pets, interactions with exotic species, human recreation, disease, and effects of contaminants,” (Browne and Hecnar, 2007: 422).

Point Pelee National Park in Ontario was once home to the greatest Canadian turtle species diversity; however, now it seems as though turtle populations in the park are declining and at risk. These populations are protected from habitat loss due to residing in a National Park, but this is not sufficient to protect them from other threats. It was determined that there have been changes in turtle species' community structure in the past thirty years (Browne and Hecnar, 2007: 424). Even though there were seven native turtle species in Point Pelee, only six were found to be existing there (spotted turtles were not found), and only the painted turtle had what researchers considered to be a “large, healthy population,” (Browne and Hecnar, 2007: 424-425). There was found to be a decline in Blanding's Turtle populations in the past 30 years from when the study was conducted in 2001 and 2002 (Browne and Hecnar, 2007: 425). Both Blanding's Turtles and Spotted Turtles faced severe population declines in the park in the past 100 years. Both species were once very abundant in the park, but now only Blanding's Turtles can be found, and the major cause seems to be a reduction in the quantity and quality of available

habitat. Many of the swamp forests, and shallow wetlands that the turtles prefer were destroyed in the early 1900s, when canals were excavated and the land was drained for farming purposes. Turtles were also likely concentrated into the few remaining shallow wetlands, which increased their risk to being eaten by predators such as raccoons, turtles' greatest predators (Browne and Hecnar, 2007: 426). The proportion of turtle nests that raccoons destroyed in 2001-2002 ranged from 63% to 100% in different areas of the park. Other causes for turtle decline in the park could be road mortality and the pet trade.

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