

Stewardship and Conservation: Stewardship Practices to Conserve Gros Morne Bioregion

Jordan Fewer

Grenfell Campus, Memorial University of Newfoundland

In the face of climate change and industrial development intensification in Insular Newfoundland, the need to protect sensitive ecosystems is paramount to the survival of species. Ecosystem-based management has been an effective approach for management within park boundaries, but we cannot risk creating isolated islands of protection. Expanding protection of natural areas beyond existing park boundaries can be difficult to accomplish. Using a comparative case study research method, this study identifies three stewardship approaches, conservation easements, Institutional blending, and land-trusts, to conservation that may prove to be an effective means of achieving new conservation goals near Gros Morne National park.

Introduction: Ecosystem-based management: The Need for Stewardship

Ecosystem Based Management (EBM) has emerged partly from Von Bertalanffy's work in evolutionary biology. Bertalanffy developed systems theory in response to his belief that a reductionist theory was not sufficient to deal with complex biological systems (Toews et al., 2008). Bertalanffy started at a biological systems level, one that is important to the context of this research paper. Caws (2015) states that systems are a whole compound of several parts or members. Similarly, Slocombe (1993), relates Caw's definition of a system to ecosystems, claiming that a complete ecosystem is one that has boundaries that encompass a variety of ecosystem processes and besets a large enough area to sustain biodiversity and other complexities associated with a particular ecosystem to ensure self-maintenance is achievable, when this is accomplished, ecological integrity (EI) is said to be maintained. Ecological integrity, according to Dearden, Rollins, & Needham (2016), those processes required to ensure an ecosystem is self-maintained perpetually when absent of unexpected external threats such as forest fire, pests, etc... it is a condition that is characteristic to its natural region (Dearden et al. 2016).

EBM is a transdisciplinary approach that avoids compartmentalizing single components of a system, and instead attempts to manage the cumulative effects of an action on a whole ecosystem (Toews, Kay, Lister. 2008). Ecosystem-based management is being employed by many parks and protected areas to provide goals and frameworks for the protected area (Slocombe,1998). EBM is the process of managing and understanding the interaction of the biophysical and socio-economic environments within a transdisciplinary context (Slocombe, 1993). EBM involves moving beyond institutional, scientific, and administrative methods to management and the small, arbitrary management regions that these approaches are best suited towards and instead focuses on managing the activities that occur within ecosystems, thus the focus area is much larger spatially and extends beyond arbitrary park boundaries (Slocombe, 1998). The Parks Canada website states that ecosystem management, that involves administrative, scientific, and institutional methods, has occurred in Canadian national parks in general since the 1930's, and that EI has been introduced to policy since 1979 (Parks Canada, 2015). Parks Canada's objective is to allow people to enjoy

national parks as special places without damaging their integrity (Parks Canada, 2015). In other words, EI is a guiding principle for park management; ecosystem-based management is the process used to get there (Parks Canada, 2013). One of the criteria required for both EI and EBM is the existence of intact bioregions that exist beyond arbitrary boundaries. Parks Canada (2015) uses an EI monitoring framework that divides park integrity into two components. Those components are simply plant-and-animal diversity, and ecosystem processes (Parks Canada, 2013). As a part of the ecological integrity framework, Parks Canada (2015) lists principle stressors that affect park plant-and-animal diversity and ecosystem processes. These stressors are listed as: Human land-use patterns, habitat fragmentation, pollutants, climate, and other park specific issues. Because of such stresses, increased mechanisms for management are required. Parks Canada explicitly states that Ecosystem management is the method they apply to achieve EI, thus stressors that may reduce the ability of an ecosystem to continue self-maintenance are only considered, or managed, if they exist within a park boundary. According to EBM principles, entire ecosystems need to be managed as one unit. A variety of ecosystem components operate and interact across large landscapes. Protected areas need to maintain connectivity and reduce fragmentation to ensure ecological integrity is maintained (Dearden et al. 2016, Slocombe, 1993). Park boundaries function as a form of fragmentation, if the portion of the ecosystem beyond the boundary is not managed as well. Since the federal organization, Parks Canada (2015), does not include as part of their mandate managing entire ecosystems beyond a parks boundary, implementing alternative approaches to ensure ecosystems remain intact, and that stress on the system is managed must be considered.

Roach, Hollis, McLaren, & Bavington (2006) introduce us to three strategies for the protection of species and habitat. These strategies are described as: Land-acquisition programs, government legislation and regulatory agencies, and stewardship programs. This paper will focus on stewardship and its role in conservation. I have chosen to analyze the stewardship approach to achieving protection, because most endangered species habitat exists on privately owned land (Dearden et al, 2016), with no protection except that provided by the land owner. Stewardship approaches can be utilized to achieve protection when a government(s) cannot purchase land for this purpose. Most stewardship is achieved through voluntary protection of privately owned land. Whether through donation or the signing of a conservation easement, land owners get to decide how their land is to be protected (Dearden, Rollins, & Needham, 2016). Parks Canada's (2015) commitment to managing ecosystems as they exist within a parks boundary, and not beyond is a testament for the need to rely on stewardship approaches to ensure EI in conserved. Because stewardship is one mechanism that can be applied to ensure this, fostering a sense of stewardship, through education or other various incentives among possible participants is paramount. Dearden et al. (2016) assert that stewardship includes landowners that voluntarily restrict any, or some, damaging land-use, or voluntarily act in such a way that promotes EI. Furthermore, Roach et al. (2006) affirms that one constant between the many stewardship conceptions, is that the activities that lead to the creation of a conserved area are voluntary. Confirmation of the importance of education in fostering a stewardship ethic, can be found, also, from Dearden et al. (2016), who suggest that all conservation organizations have education and outreach programs, and that the types of education, and the formats, are many. Dearden et al. (2016), also inform us that stewardship approaches generate greater community support for conservation initiatives, and that this increased effort to change people's attitudes and values through education may change their behavior and thus foster a stewardship ethic amongst possible conservation participants.

Stewardship

Effective EBM requires that conserved areas encompass large bioregions and not arbitrary political boundaries, or islands. Islands, in park management, are fragmented landscapes, and fragmented landscapes are considered a stressor on ecosystems and ecosystem functions, and in many cases is human induced (Deardon & Mitchell, 2011). The need for the extension of parks and protected areas across Canada is evident, but there is opposition. Because legislatively protected areas may change the way that land surrounding a park can be used by the public, it is an unfavorable method of conservation to many. Dearden et al. (2016) tell us that stewardship approaches, a voluntary conservation action by members of the public, are more flexible and adaptive, and generate greater community support for conservation initiatives. Stewardship has many definitions that include, but are not limited to; “people taking care of the earth” (Dearden et al. 2016. p. 294), and “someone who looks after something that does not belong to them” (Dearden et al. 2016. p. 294). In response to the failure of other strategies, stewardship approaches can ensure that whole ecosystems and EI are conserved.

A sometimes failing strategy of extending or creating a conservation area is a government attempt to do so. The failure of government to accomplish this may be the result of purchasing power or of temporal constraints. Governments can seldom purchase land for conservation from a private land owner for a similar price that conservation organizations are able to negotiate. For example, Dearden et al. (2016) reference Parks Canada, stating that the Nature Conservancy of Canada (NCC) provides many more protected areas through land acquisition, though partially funded by Ontario Parks, than the Ontario government could have created with the same funds.

A second example, of the inability of government to create a park because of purchasing power, in this case a national park, is described by Dearden et al. (2016). Because most provinces own most of the land within their boundary, to create a national park, or extend a national park, the federal government must negotiate a price for land with provincial government, which may be tedious and expensive, as provincial governments may see the land as useful for means other than conservation. Another reason a government created conservation area is more difficult to establish thus, making stewardship approaches more efficient, is because of the time it takes to create an official government protected area. The prolonged administrative and political processes involved may prevent the creation of a protected area, or limit the amount of protected areas that could be created through other means in the same time frame (Dearden et al. 2016). The belief that stewardship approaches to conservation are effective exists throughout the literature. Dearden et al. (2016) tell us that “stewardship promoters often tout voluntary approaches to ecosystem or biodiversity conservation as being a more effective and efficient means of protecting species or the environment than government-imposed regulations (which are also known as ‘command and control’ mechanisms) (Dearden, Rollins, and Needham, 2016. p.296). Roach et al. (2006), suggest that stewardship is more effective at protecting natural areas and species and thus should be considered as a first-choice strategy. In response to the need to protect whole ecosystems that exist beyond park boundaries, conservation organizations and stewardship groups strive to extend natural area directly adjacent to park boundaries to foster EI using multiple stewardship methods.

Stewardship and Newfoundland

Awiti (2012) in a study of stewardship and national parks, suggests that nature as separate from human engagement has led to the current situation of the loss of species, particularly large mammals. Though Awiti (2012) made this statement regarding large mammals in Africa, similar trends have been noticed throughout Canada, for instance, the Manitoba Conservation and Water Stewardship, Wildlife Branch (2014) references the addition of woodland caribou to the endangered species list in 2002. Regarding the threatened nature of the large mammal the Manitoban government has begun a significant management strategy that includes stewardship and outreach. Similarly, Unger, K. (2015) informs us that Newfoundland's woodland caribou have been in rapid decline since the early 2000's. Unger's research focuses on predator responses of caribou, but, includes that responses of caribou to predators is of growing importance in the face of increased anthropogenic development that will increase predator encounters and diminish the population. AS found in a 2016 North American study, declining species populations in insular Newfoundland such as the piping plover are the result of stresses such as climate change and habitat loss (VOCM, 2017). Dearden et al. (2016) inform readers that biodiversity loss is unprecedented, and that 150 to 200 species become extinct across the world every 24 hours. In GMNP the Multi-Species Action Plan has been developed to protect species, but, only within park boundaries (Government of Canada, 2016). As mentioned previously EBM requires large tracts of land that encompass entire bioregions necessary to sustain whole ecosystems and ecosystem functions, including biotic and abiotic components, this demonstrates the need for environmental stewardship approaches to conservation.

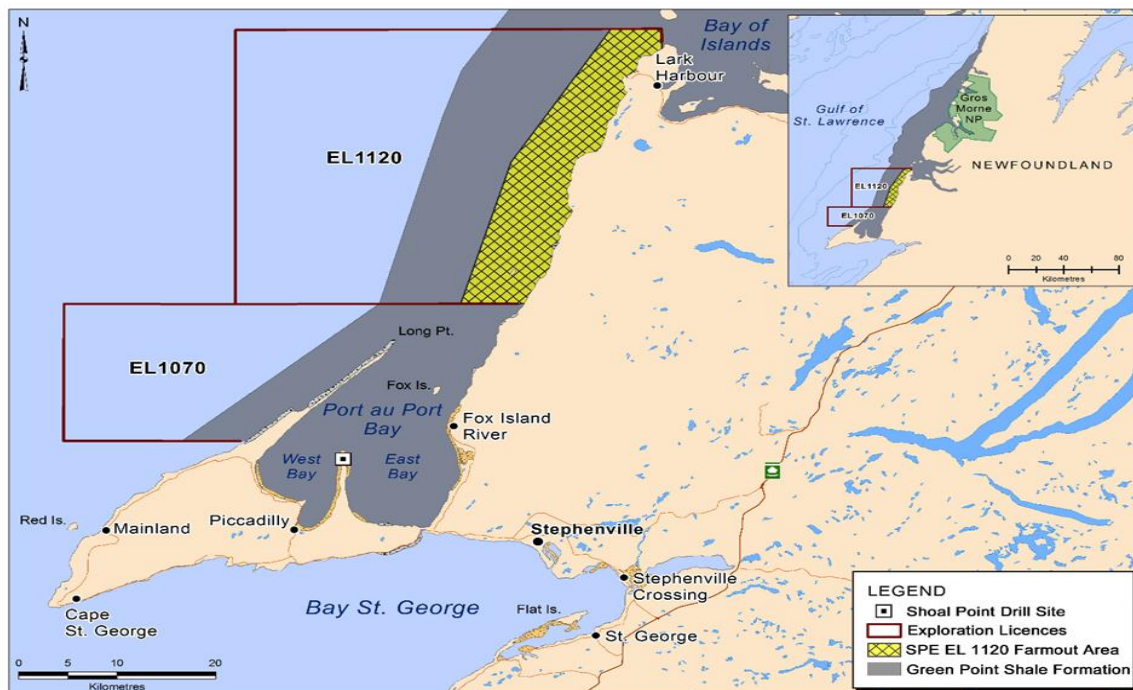


Figure 1. Green Point shale formation with exploration licenses and Shoal Point drill site. Reprinted from Humber Arm Shale, by Shoal Point Energy Ltd., n.d. Retrieved from <http://www.shoalpointenergy.com/projects/humber-arm-shale>

Situated on the far eastern coast of Canada, Newfoundland (NL) is home to four National parks. One located on the western side of the island, Gros Morne, and the other a part of insular Newfoundland's north east coast, Terra Nova, the remaining two national parks exist within insular Labrador, the Meeley Mountain national park, and Torngat Mountain national park. Gros Morne boasts 1800 square kilometers of nationally protected land, and is home to an endangered population of pine martin (Dearden et al. 2016), as well as declining caribou herd populations (Unger, 2015). In recent years, there have been threats of industrial development on the fringe of Gros Morne National park, particularly hydraulic fracturing (NLHFRP, 2013), that may compromise the parks' ecological integrity by fragmenting the landscape. Shoal Point Energy, as shown above in figure 1, has proposed development of what is referred to as Green Point Shale, on the Islands western coast, bordering Gros Morne national park, and within communities that rely on the land for tourism and other benefits. There are a number of enclave communities that border GMNP including; Norris Point, Sally's Cove, Rocky Harbor, Trout River, Wiltondale, Saint Paul's, and Cow head. The development near the border of the park will change the landscape and impose threats to ecological integrity and compromise attempts for successful EBM as the park becomes more island-like, while changing communities' relationship to the natural area in and surrounding Gros Morne.

Dearden et al. (2016), Slocombe (1993) and Parks Canada (2015) inform us that ecosystem components operate and interact across large landscapes, and that fragmentation of landscapes compromises their ecological integrity. As of November 2013, Newfoundland and Labrador announced a moratorium on fracking. This moratorium, however is not a permanent conservation effort says Dearden and others (2016), but a temporary measure that will allow for public consultation, and technical review of any regulations associated with hydraulic fracturing

In response to the apparent need for larger protected areas to enable better EBM and foster ecological integrity, I propose that stewardship is the catalyst needed to achieve this goal in insular Newfoundland. Through a case study analysis, I will identify stewardship practices that may best suit conservation efforts for GMNP. Dearden et al. (2016), claim that land trusts are "proliferating" as a stewardship conservation technique, that stewardship organizations are buying and managing large areas of land for conservation purposes, and that government is funding these organizations, in a process Dearden et al. (2016) refer to as institutional blending, as well as funding and supporting private community-based conservation efforts. Each of these approaches to stewardship can be accomplished through land procurement practices that include, donation, purchase, conservation agreements with land owners, and the relinquishment of other legal interests in land (Nature Conservancy of Canada, 2011). Land trusts will be analyzed as a stewardship conservation method when property is owned by a conservation organization, land easement is a stewardship conservation method that relies on the partnership of landowners, who retain ownership of land, and a conservation organization, and institutional blending as a stewardship approach to conservation includes the cooperation of government, landowners, and conservation organizations. Within the context of environmental conservation, I analyze the effectiveness of land-trusts, conservation easements, and the often present institutional blending of management bodies to determine the 'best' stewardship approach to be used in Gros Morne and its enclaves. The purpose of the research paper is to identify whether stewardship approaches are a viable means of creating large conservation areas near Gros Morne National park of insular

Newfoundland, and which of the stewardship approaches analyzed may be best suited to accomplish this.

Methods

To highlight possible stewardship tools and strategies as a means to achieve environmental conservation near the park boundary of Gros Morne National park, NL, I have elected to use a qualitative case study research method. Miles (2015) disagrees with those who claim case study analysis, in social science research, is a flawed and less theoretically rigorous research method than alternative methodological approaches. Miles argues that the knowledge obtained through experience is an essential tool for educating, and that the re-presentation of a particular case study allows the reader to draw on greater connections between the research and their experiences, making it a powerful educational practice. Baxter and Jack (2008) identify some common research environments that warrant this qualitative approach, they reference Yin (2003) claiming that the case study approach to understanding phenomena is best applied when: “The focus of the study is to answer ‘how’ and ‘why’, you cannot manipulate the behavior of those involved, you want to cover contextual conditions because you believe they are relevant to the phenomenon under study, or the boundaries are not clear between phenomenon and context” (Baxter & Jack, 2013.p. 545).

Specific to this research paper, I use a qualitative case study approach to answer how stewardship can be used as an approach to environmental conservation in NL. I cannot manipulate the specific stewardship approaches used to achieve conservation goals, thus I must apply my chosen case study approach to make inferences regarding the best approach to recommend for Gros Morne. The case studies chosen are those in which stewardship has been used, or been attempted, to extend the boundaries of already established protected areas, or to create long corridors connecting already established protected areas. Also, the case studies chosen will focus on those that have used stewardship approaches to protect land in enclave communities surrounding an already established protected area. Before concluding or making recommendations I will use an analytical framework, for which the criteria will be: The conservation effort analyzed is either a land-trust, a private land conservation effort or land-easement, or a conservation effort funded by government. To do this I have read various scholarly articles from reputable journals such as; Science and Children, Environmental Development, Issues in Educational Research, Ethics and the Environment, Bioscience, and more. I have also extensively viewed Parks Canada’s website for information pertaining to management goals of Canadian parks.

I also heavily referenced Dearden, Rollins, & Needham (2016) to determine which approaches to stewardship have been most effective. When the three stewardship approaches to conservation were determined I resorted to viewing the Nature Conservancy of Canada’s (NCC) website to review work completed by the NCC until case studies that fit the criteria for my research were identified. The NCC (2017) website provided multiple case studies to choose from to perform my analysis. In particular, I take an in depth look at Riding Mountain National Park, Manitoba. Riding mountain national park and much of Manitoba’s south are home to endangered grassland habitat and species, and home to Canada’s remaining fescue prairie (NCC, 2016). The NCC, and Ducks Unlimited Canada (DUC) own properties for the purposes of conservation and have engaged in conservation agreements with landowners to extend the region near and surrounding Riding Mountain and to create a corridor from Riding Mountain to Duck Mountain Provincial Forest and

other legislatively protected Parks within Manitoba (Manitoba Government, 2017). I also view the Yellowstone to Yukon (Y2Y) initiative and the role stewardship plays in the conservation of ecologically significant areas along this corridor. The Y2Y website provides an efficient overview of the projects underway within the Y2Y corridor, from which I have selected relevant case studies discussed later. I also viewed local newspapers such as the Calgary Herald, to obtain landowner perspectives on stewardship as a means of achieving larger conservation areas.

Literature Review

Freemuth (1991) informed readers his research showed that ‘increasingly’ national parks are coming under threat from sources beyond park boundaries. According to the literature, park boundaries often fail at encompassing entire ecosystems regions, thereby fragmenting ecosystems and diminishing ecological integrity (Dearden et al. 2016). Slocombe (1993, 1998), informs us ecosystems within park boundaries are increasingly coming under threat from external factors as parks become more island-like. EBM is a management approach that seeks to manage the activities within entire ecosystems, and not solely the ecosystem within a definitive arbitrary boundary (Slocombe, 1993). The EBM approach uses all known knowledge of ecological relationships, and applies that knowledge in a holistic manner in which the impacts of management action is assessed for its impact on the whole system. This assessment is conducted using an adaptive transdisciplinary approach (Dearden et al., 2016). Canada’s national Parks are not sufficiently large enough to protect all the species that exist within them and ensure the maintenance of ecological integrity (Dearden et al. 2016). Dearden and colleagues describe ecological integrity as an environmental condition that is characteristic of its natural region. The natural characteristics of an area include any abiotic factors or biological communities as well as the rates of change and all other supporting processes. Per Dearden et al. in the Canadian context habitat loss and fragmentation are great threats, if not the greatest threat to species and endangered species. Therefore, by managing an ecosystem only within a park boundary, and not managing or protecting those parts and processes of the ecosystem outside, we risk potential damage to the ecological integrity of the whole system.

Apps & McLellan (2006) demonstrate the necessity of managing entire bioregions by demonstrating that a loss of mountain caribou is because of habitat loss and fragmentation. In an insular Newfoundland context, such habitat loss and fragmentation is inevitable if development is to be permitted near Gros Morne National Park. Habitat loss, or fragmentation threatens the ecological integrity of natural spaces as well as the species that exist within the ecosystem. If there is fragmentation or habitat loss surrounding an established national Park, such as Gros Morne, these stresses have the potential to influence conditions within the park and disrupt processes to the detriment of the ecological integrity of the park. One method to ensure that EI is maintained is to apply the afore mentioned EBM approach and include the region(s) beyond Park boundaries. There is also literature devoted to the need for this approach for the Gros Morne region. Keough (1997), discusses the need for the application of a more ecosystem-based approach for entire ecoregions, that he refers to as the greater park ecosystem (GPE). Reading Dearden et al., (2016), affirm Keough’s stance regarding GPE’s by claiming that biodiversity is best conserved when an EBM approach is applied that includes consideration for the whole regional setting. Dearden calls this regional setting, that includes different jurisdictions, cultural practices, and biological hot spots, the GPE. In response to this need for a larger protected area, Dearden et al. list stewardship

as an effective tool for conservation. Dearden defines Stewardship as “an ethic whereby citizens participate in careful and responsible management of air, land, water, and biodiversity to ensure we have healthy ecosystems for present and future generations” (Dearden et al. 2016.p. 295).

“Stewardship is an ethic whereby citizens participate in the careful and responsible management of air, land, water, and biodiversity to ensure we have healthy ecosystems for present and future generations (Dearden et al. 2016. p. 295).”

Dearden et al., (2016) state that stewardship is a voluntary measure, that when used for conservation purposes restricts, or reduces activities that threaten ecological integrity. Per Dearden et al. in the Canadian context, habitat loss is a great threat, if not the greatest threat to endangered species, and much of the habitat required for these species exists on private land, more specifically approximately 60 percent of critically endanger species habitat exists as privately owned land.

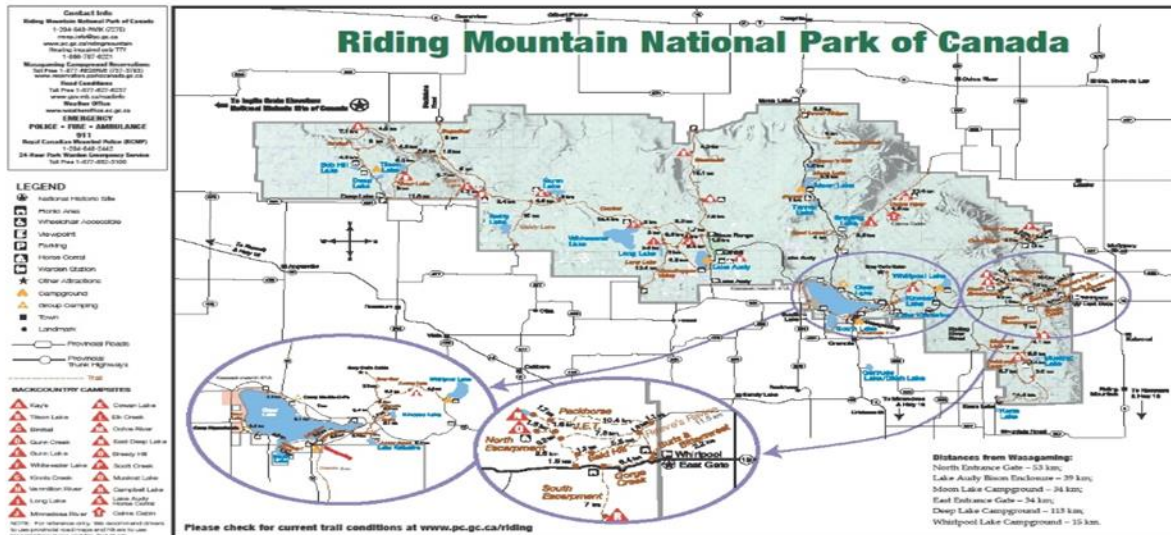
The Riding Mountain Natural Area initiative is a conservation program aimed at conserving land in the southern portion pf Manitoba (NCC, 2017). The organization has worked extensively to protect the natural habitat of the region and ensure endangered local species have habitat for the future. The Yellowstone to Yukon (Y2Y) conservation initiative is a proposed corridor that extends from Yellowstone National Park the 1300km to Alaska and encompasses 1.3 million km² (Y2Y, 2017). The region consists of seven core regions that are protected currently under federal or provincial protected area legislation and conservation organizations have been working to secure habitat to connect these core regions (Y2Y, 2017). The Central Canadian Rocky Mountain Region is one of the seven core regions that conservation organizations have been working to connect to others (NCC, 2015).

Three stewardship approaches have been used to extend conservation beyond the arbitrary Park boundaries of these two regions. Conservation easements, Land-trusts, and Institutional blending have contributed much land to each of these initiatives for conservation. According the NCC a conservation easement is a voluntary, legal agreement between a landowner and conservation organization or government agency that permanently limits certain uses of land to protect the lands conservation values (NCC, 2017). Merenlender et al. (2004) state that a conservation easement is a voluntary approach to conservation that relies on the landowner to retain ownership and management responsibilities to ensure that conservation goals are met, thereby, reducing costs for conservation and avoiding complex political issues. The literature defines a land trusts as an organization that works to acquire property or to promote the conservation of natural habitat on privately owned land (Dearden et al. 2016). Brewer (2004) defines a land trust as protecting land through ownership. As you will have noticed throughout this research paper I have alluded to land trusts as land conserved by a change of proprietorship from a private landowner to a conservation organization. According to Dearden et al. (2016) large areas of land are now conserved because of this change in proprietorship throughout Canada, making it an effective stewardship approach to conservation. Dearden at al. also refer to institution blending as the “interplay of market interactions and state brokered policy and planning” (p. 295). The Miistakis Institute (2013) lays out some of the legal power conservation easements’ hold on the use of land. conservation easement documents lay out a list of binding restrictions on specified land uses. According to the Miistakis Institute, easements are accompanied by binding documentation otherwise known as the "rights" that have been granted to the conservation easement holder. These rights, once decided

upon cannot supersede any regulatory authority that is established. According to Dearden et al. (2016) one means of providing incentives to land owners for the creation of a land easement, that either ensures the maintenance of the property as it exists, or the changing of the land use or practices to more ecologically desirable types, is for the government to provide tax breaks. For example, the Ontario governments has established the Ontario Land Tax Incentive Program which encourages conservation by providing tax relief to those land owners who participate in easements. The Nature Conservancy of Canada invested significant time and capital in conservation initiatives across the nation. The have participated in the RMNP conservation area as well as to conserve land within the Y2Y corridor and have been the primary conservation organization I have investigated to analyze the effectiveness of the three stewardship practices highlighted.

Case Studies

Riding Mountain Natural Area



Land-Trusts

Brewer (2004) describes that land trusts, or conservancies, as protecting land through ownership. To demonstrate the effectiveness of a land trust as a conservation method I analyze the Nature Conservancy of Canada (NCC) and their Natural Areas Conservation Programs (NACP). The NCC is a useful conservation organization to analyze to determine the effectiveness of land trusts as a conservation method because they have successfully extended “or enhanced corridors to existing protected areas such as national parks, national wildlife areas and migratory bird sanctuaries” (NCC, 2017). To date, more than 418, 000 hectares has been conserved through the use of the NACP program in Canada. The NCC (2017) has effectively conserved 38,000 hectares of land in

the prairie habitat joint venture region, contributing to the 862, 000 hectares of land conserved through easement and land- trusts, predominantly purchased by Ducks Unlimited. The NCC (2017) claims that this combined conservation effort makes up nearly 2 percent of Canadian prairie and parkland, and that this area is almost equivalent to the federally protected prairie and parkland (Riley et al. 2007). In the Manitoban prairies the NCC owns 4118 hectares of land in the endangered tall grass prairies of Manitoba. The NCC has entered an agreement with the Manitoban Government that dictates the land-uses of any land acquired by the NCC Near Riding Mountain National Park and the endangered tall grass prairies (Government of Manitoba, 2017). The agreement is a legal mechanism that ensures lands owned by the NCC meet the provincial requirements of a protected area (Government of Manitoba, 2017) effectively turning lands owned by the NCC in the region to a protected area.

Conservation Easements

According the NCC a conservation easement is a ‘voluntary, legal agreement between a landowner and conservation organization or government agency that permanently limits uses of the land in order to protect its conservation values’ (NCC, 2016). Riding Mountain National Park (RMNP) is 3000 km² and is comprised of a number of distinct ecosystems, including; boreal forest, aspen parkland, and fescue prairie (Parks Canada, 2016). According to the NCC website, the conservancy is continually work to conserve land surrounding Riding Mountain, as well as the region between RMNP and a nearby conservation, Duck Mountain Provincial Forest. The NCC recognized the impact of fragmentation of bio regions, particularly in regard to bird species of the Prairies. According the NCC, parts of the prairie biome, including RMNP, remain the most important breeding areas for water fowl, and other grassland species that are experiencing significant declines in population (Riley, Green, & Brodribb, 2007).

Because of threats to the natural environment and biodiversity the NCC has procured many regions in the prairies surrounding RMNP. On January 26, 2011 a news release, archived on the government of Canada’s Environment and Climate Change webpage, boasts the completion of four new land easements on properties near RMNP by the NCC (Government of Canada, 2014). These four new acquisitions add to another 50 properties owned by the NCC in the RMNP region. One property, reported to have been granted easement for conservation purposes by a southern Manitoban family, the Bonners, have said that they “wanted to ensure that our beautiful and pristine property, with its two spruce bogs, and diversity of wildlife, would remain as it is in perpetuity. It is very important to us as local landowners that our property have conservation as the main goal with no alterations or subdivision permitted, in perpetuity” (Government of Canada, 2014).

As mentioned in the introduction to this paper, stewardship practices are voluntary. Some organization, however, purchase conservation easement agreements with land owners as a means of providing the landowner with financial compensation for the easement of their property. This is true, However Dearden and colleagues (2016) hold fast that ‘in most cases though, the easement is a voluntary donation’ (Dearden et al. 2016. P. 307). Within the surrounding area of RMNP land ownership exists as primarily privately owned land (72%) which is largely agricultural, 23% is the core area of the biosphere, 4% is provincial crown land, 2% First Nation Reserve lands, and 1% is federal pasture (Brook & Swystun, 2011). The NCC, as of 2011 But, “There are no publicly

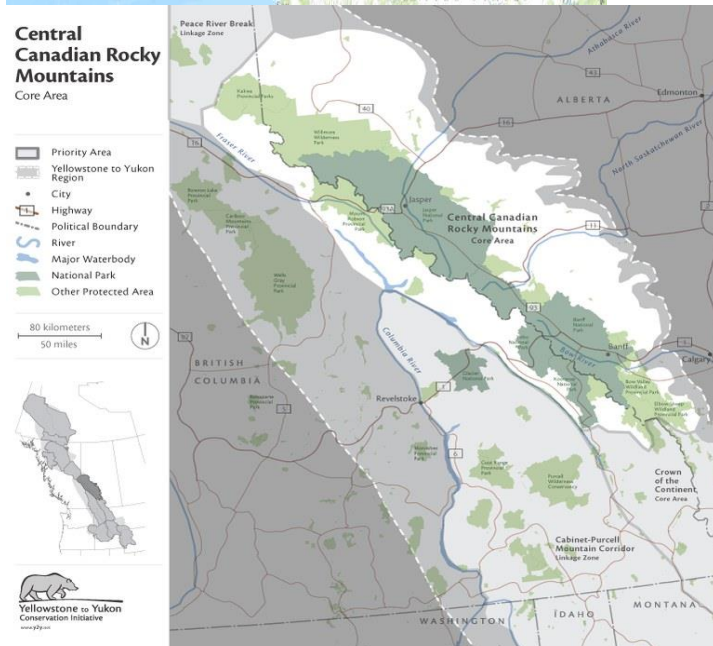
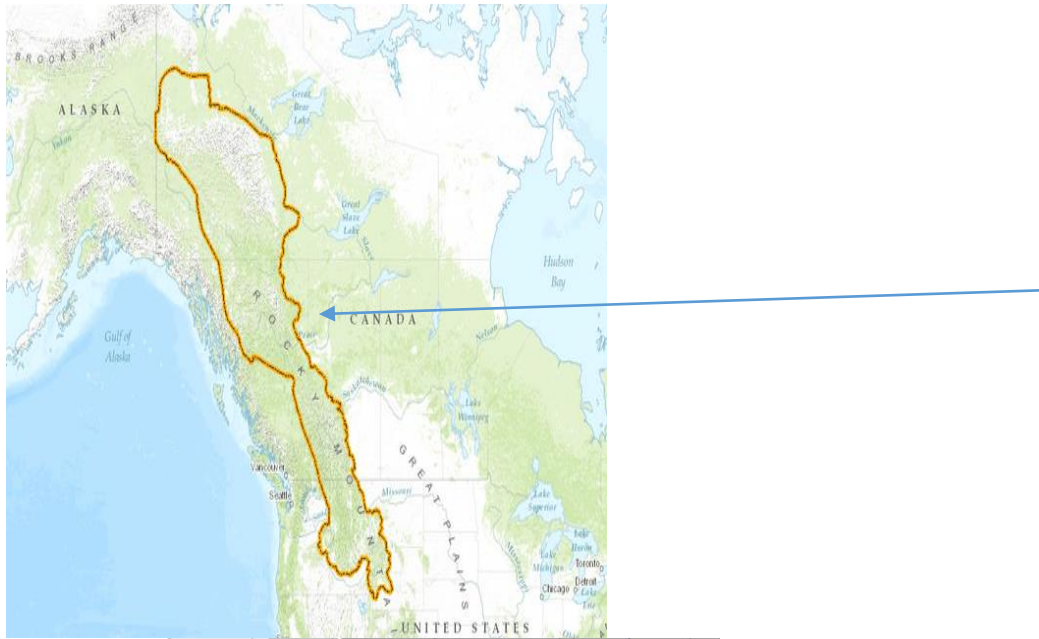
available statistics on the current ownership of private land by NGO's such as Nature Conservancy of Canada, Ducks Unlimited, Manitoba Wildlife Federation, and Manitoba Habitat Heritage or the amount of conservation easement agreements that have been signed with these groups" (Brook & Swystun, 2011. p. 13). The NCC according to Brook and Swystun (2011) has protected 3642 hectares in the RMNP GPE. They have placed a priority on acquiring land and signing conservation easements, but according to Brook and Swystun detailed information on the easement achieved are unavailable to the public because of privacy and confidentiality reasons.

Institutional blending

Mentioned previously was a 2014 Government of Canada archived document referring to a conservation easement regarding an agreement between NCC and the Bonner family, and other properties in southern Manitoba, near RMNP. This conservation of land was achieved through the signing of conservation easement agreements between landowners and the NCC, however there are aspects of these easement agreements that demonstrate how institutional blending can result in the successful development conservation areas. The government of Canada's Environment and Climate Change department reports that the acquisition of 4 conservation easements in Manitoba by the NCC were partially funded by Environment Canada's Natural Areas Conservation Program. The Natural Areas Conservation Program helped fund these acquisitions with a budget of \$167, 749 (Government of Canada, 2011).

It is evident that the three stewardship approaches identified function as an effective method to achieving conservation areas beyond arbitrary Park boundaries in the region. The NCC has effectively gained proprietorship of multiple properties that are now legislatively protected in accordance with the Manitoba Government Protected Areas legislation. Conservation easements, too, have been effectively negotiated and have resulted in the protection of ecologically significant land and both approaches appear to have been enhanced by the cooperation of organizations, governments, and landowners, Institutional blending, therefore has also contributed to conservation in the region.

Yellowstone to Yukon



The Y2Y conservation initiative spans the 3200 Kilometers from Yellowstone National Park to the Yukon. Aiming to create a 1.3 million km² corridor, the projects in the region are many. I decided to focus on three areas in particular that exemplified the use of stewardship in extending conservation beyond a park boundary. The regions I have chosen are the Central Canadian Rocky Mountains, the Waldron Grazing Area of the northern Great Plains, and the Waterton Water Front, located in south western Alberta.

Land Trusts

Bennett (2004) lists biodiversity loss and threat of loss as the need for this large conservation initiative. According to the Y2Y website the entire conservation area consists of 7 'core' ecological

regions (Y2Y, 2016). The NCC has been involved in the direct protection of much land in the Central Canadian Rocky Mountains (CCRM). The NCC explicitly owns or partly owns, with other conservation organizations, 110, 500 hectares of land in the CCRM's (NCC, 2017). The NCC is responsible as well for another region of the Y2Y corridor known as the Waterton National Park area now. According to the NCC website they have been actively involved in conservation initiatives in the region since 1997 and have invested 50 million dollars in the project, referred to by the NCC as the Waterton Park Front Project (NCC, 2015).

Land Conservation Easements

Y2Y works with individuals and organizations to achieve conservation goals (Y2Y, 2017). The Nature Conservancy of Canada been involved in the protection of land in the Y2Y region for a long time (NCC, 2016). The NCC claims that they have been the most successful organizations working in the region because of their direct conservation of 110,500 hectares of land in Alberta and British Columbia, as well as facilitating the conservation of another 211, 650 hectares in the region (NCC, 2017). One means of facilitation utilized by the NCC has been the establishment of conservation agreements with property owners in various areas of the Rockies. One example of an effective conservation easement is between the NCC and the Waldron grazing co-operative that was established in April of 2013 (NCC, 2017). With agreements already established between the two groups, the Waldron grazing co-operative with ownership, the Waldon grazing co-operative purchased a large property adjacent to Waldron in 2015, which extended the property owned by the co-operative an additional 1700hectares (NCC, 2017). In 2016 the NCC and the co-operative created another easement on this now larger property would remain intact and conserved for all time (NCC, 2017). As a part of the Waterton Park Front Project, the NCC has worked with 40 families, as of 2015. The exact number of easements created are not listed but this method has been used to ensure conservation of some property in the region through negotiations with ranch owners (NCC, 2015).

Institutional Blending

The Y2Y conservation initiative also encourages and facilitates collaboration between individuals and groups working on conservation efforts throughout the Yellowstone to Yukon region (Y2Y, 2017). This being one of the Y2Y initiatives goals, the organization facilitates what I've referred to throughout this research paper as institutional blending. The Waldron Conservation project, in total is the result of many partners coming together to create a conservation area. Waldron Grazing CO-OP, the Government of Alberta, Alberta Land Stewardship Grant Program, the Government of Canada, Natural Areas Conservation Program, The Calgary Foundation, the Werklund Foundation, TransCanada Corporation, Dale Huntingford and Virginia Dobson, Gerald A. Cooper Key Foundation, Soderglen Ranch, Ron and Jan Brenneman and Hal Kvisle, as well as the Riddell Family (NCC, 2017). These are a few of the partners that have been necessary to create effective conservation areas in Waldron of the CCRM, that have partnered or worked with the NCC. Another form of institutional blending is the ecological gifts program, A Federally funded tax incentive for landowners to sign conservation agreements (easements) on their property (Miistakis Institute, 2013).

The Werklund Foundation for example, according to their website, committed to ensuring the sustainability of Alberta's environment, and so have donated between 200, 000 and 500,000 dollars to the conservation initiative. In Alberta, like any other province, a conservation easement given in exchange for something, right to develop, or for other land-uses is not considered a gift and is not eligible for a tax receipt. The donation must be done so as an ecological gift, and be on ecologically significant land, as determined by legislation and science. The Miistakis Institute (2013) states that property tax deductions or waivers are granted by municipalities. As part of the previously mention Waterton Front Park Project the NCC has reported to have worked in association with, the southern Alberta land-trust society (SALTS), and the Waterton biosphere reserve association WBRA's (NCC, 2015).

Conclusion and Recommendations

With proposals for development near Gros Morne National Park becoming more frequent, such as the Shoal Point Energy proposal, the need for conservation before destruction occurs is apparent. The 'ecological Gifts' Program, since 1995, has provided private landowners with incentives to promote conservation of ecologically sensitive land. The program offers tax benefits to those landowners who participate in conservation easements with an approved recipient (Environment Canada, 2013). Municipalities have the authority, provincially dependent, to waive or minimize property taxes on private land that has an easement with an accredited conservation organization such as the NCC. Though exact details of easement agreements and tax benefits to landowners is hard to find due to privacy reasons, in some circumstances, the cooperation of governments, particularly municipal governments, in terms of property tax deductions for conservation may be paramount to converting privately owned land to conserved land to foster EBM and EI. Though there are many resources out there for informing landowners of possible benefits and best approaches for placing an easement on their property, a conservation organization such as the NCC has the resources to negotiate these agreements for landowners. The literature referenced throughout this paper illustrates the importance of extending conservation areas to include entire ecosystems. Following extensive research on the subject I have compiled a list of conclusions regarding stewardship, and how it might best be used to ensure the conservation of land adjacent to Gros Morne National Park to maintain EI.

Stewardship approaches to conserving that part of the ecosystem that exists beyond the boundary of Gros Morne National Park, of insular Newfoundland may be feasible if education and outreach programs that are frequently conducted by conservation organizations are applied to relevant communities surrounding Gros Morne. If possible participants are educated regarding the importance of large, intact ecosystems to foster lasting EI they may be more inclined to participate in conservation initiatives near the Park. There may also be a role for Government ministries, in particular the provincial government, in establishing education programs for this purpose. Secondly, if conservation easements or land-trusts are to be created beyond the Park boundary it is imperative that legislation be put in place by the provincial government that explicitly states how the land is to be used once acquired for conservation, or an easement is signed. As seen in the Riding Mountain Natural Area case study, when government legislation is put in place to govern newly established agreements or land-trusts, the land can be conserved on a meaningful level regarding EI.

In Newfoundland the province has legislation pertaining to; wilderness reserves, ecological reserves, provincial parks, wildlife parks, and public reserves (Government of Newfoundland and Labrador, 2017). A comprehensive evaluation of the legislation already established within the province has the potential to yield new legislation that can be applied to stewardship conservation to ensure the proper implementation of agreements and land purchases for conservation. Thirdly, regions to be considered for conservation, through the uses of stewardship discussed, must be scientifically determined to be ecologically significant, and to be in good ecological health. When significant land is identified, for the approaches I have selected to be applied the land must exist on private property. Further research is needed to identify stewardship approaches to achieving conservation on crown, or provincially owned lands. Lastly, institutional blending, as identified in two case studies, has proven to be effective in creating or extending conservation areas beyond Park boundaries. Institutional blending has the potential to enhance conservation when there is cooperation amongst Government at multiple levels, conservation organizations, and private land-owners. If the province creates legislation as suggested above, and municipal government can provide tax incentives for the creation of a conservation area, and conservation organizations are willing to negotiate in the Gros Morne region, Institutional blending has the potential to extend conservation beyond the Park boundary of Gros Morne. Dearden et al. (2016) also posit that many First Nations and Indigenous groups believe that Indigenous lands and governance over their lands is all the stewardship needed to ensure EI is maintained. Indigenous stewardship is, however, beyond the scope of this research paper and more research needs to be conducted on the topic to evaluate the effectiveness of indigenous stewardship in achieving conservation.

References

- Ashbrook, P. (2016). Fostering environmental stewardship. *Science and Children*. 53(6), 26-27. Retrieved from <https://search.proquest.com/docview/1762828247?accountid=12378>
- Apps, M. & McLellan, B. 2006. Factors Influencing the Dispersion and Fragmentation of Endangered Mountain Caribou Populations. *Biological Conservation*. 130(1): 84-97.
- Awiti, A. 2012. Stewardship of National Parks and Reserves in the era of Global Change. *Environmental Development*. 1(1). 102-106.
- Baxter, P. Jack, S. 2008: Qualitative case study methodology: study design and implementation for novice researchers. *The Qualitative Report*. 13(4). N/A. Retrieved from The NSU website: <http://nsuworks.nova.edu/tqr/vol13/iss4/2/>.
- Bennett, G. 2004. Integrating Biodiversity Conservation and Sustainable Use. Retrieved from: https://books.google.ca/books?id=uTt4BgAAQBAJ&pg=PA35&lpg=PA35&dq=y2y%20conservation%20easements&source=bl&ots=T65Dii7Y4&sig=MylnqrWJhG5vxxJH1_vnH5A-q0E&hl=en&sa=X&ved=0ahUKEwjG_oOe6_TSAhXBMz4KHamZBzM4ChDoAQg1MAE#v=onepage&q=y2y%20conservation%20easements&f=false

- Brook, E. Swystun, L. 2011. Riding Mountain Biosphere Reserve Periodic Review Report 2011. Retrieved from: http://rmbrc.ca/wp-content/uploads/2015/08/2012-07-20-Periodic-review-report-RMBR_BROOKSWYSTUN2011_final.pdf
- Calgary Herald. 2016. 'The last one per cent': The future of a famous southern Alberta ranch owned by eccentric multi-millionaire brothers is finally secure. Retrieved from: <http://calgaryherald.com/storyline/the-last-one-per-cent-the-future-of-a-famous-southern-alberta-ranch-owned-by-eccentric-multi-millionaire-brothers-is-finally-secure>
- Caws, P. 2015: General Systems Theory: Its Past and Potential. *Systems research and behavioral science*. 32. 514-521.
- Dearden, P. & Mitchell, B. 2012. *Environmental Change and Challenge*.
- Dearden, P. Rollins, R. & Needham, M. 2016. Parks and Protected Areas in Canada. *Oxford University Press. Don Mills Ontario*.
- Environment Canada, 2013: The Ecological Gifts Program: Donation and Income Tax Scenarios. Retrieved from: https://ec.gc.ca/pde-egp/C7C9F0D9-6C1C-4BE2-98DD-DC349344AEC1/Donation_IncomeTax_03_WEB_e.pdf
- Freemuth, J. 1991. Islands Under Siege: National Parks and the Politics of External Threats. Retrieved from *the Cab Direct website*: <https://www.cabdirect.org/cabdirect/abstract/19911888160>
- Government of Canada. 2014. Government of Canada and Nature Conservancy of Canada Conserve Valuable Habitat Near Riding Mountain National Park, Manitoba. Retrieved from *the Environment and Climate Change department of Canada's website*: <http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=BA3C76B5-CDFC-4727-BA99-90C5DC35FA29>
- Government of Canada. 2016. Multi-species Action Plan for Gros Morne National Park of Canada. Retrieved from: <http://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=561B7951-1>
- Government of Newfoundland and Labrador. 2017. Protected Areas in Newfoundland and Labrador. Retrieved from: <http://www.ecc.gov.nl.ca/parks/apa/panl/index.html>
- Keough, K. 1997. *An Approach to Defining Greater Park Ecosystems*. Retrieved from: <http://www.collectionscanada.gc.ca/obj/s4/f2/dsk2/ftp04/mq24383.pdf>
- Miles, R. 2015: *Complexity, Representation and Practice: Case Study as Method and Methodology*. *Issues in Educational Research*. 25(3). 309-318.
- Mistakis Institute. 2013. Conservation Easements in Alberta: An online Guide for Landowners. Retrieved from: http://www.rockies.ca/ce_guide/basics_tax.php#eco

- Mierenlender, A. Huntsinger, L. Guthey, G. & Fairfax, S. 2004. Land Trusts and Conservation Easements: Who Is Conserving What for Whom? *Conservation Biology*. 18(1): 65-76
- Nature Conservancy of Canada (2015). Natural Areas Conservation Program. Retrieved from the NCC website: <http://www.natureconservancy.ca/en/what-we-do/conservationprogram/?gclid=CM6E4aWg5tICFdyCswodIkANsQ?referrer=https://www.google.ca/>
- Nature Conservancy of Canada. 2013. Nature Conservancy of Canada Properties and Exempt Mineral Lands Effective Private Land Conservation. Retrieved from Canada's Natural resources website: <http://www.nr.gov.nl.ca/nr/mineralstrategy/submissions/NCC.pdf>
- Nature Conservancy of Canada. 2015. Nature Conservancy of Canada Receives Ted Smith Award for Conservation Collaboration. Retrieved from: <http://www.natureconservancy.ca/en/where-we-work/alberta/news/ted-smith-award.html?referrer=https://www.google.ca/>
- Nature Conservancy of Canada. 2016. Riding Mountain Natural Area. Retrieved from: http://www.natureconservancy.ca/en/where-we-work/manitoba/our-work/riding_mountain_natural_area.html
- Newswire. 2017. The Nature Conservancy of Canada and Partners Protect Land Near Riding Mountain National Park. Retrieved from: <http://www.newswire.ca/news-releases/the-nature-conservancy-of-canada-and-partners-protect-land-near-riding-mountain-national-park-508208331.html>
- Parks Canada. 2013. Ecological Integrity: What is Ecological Integrity. Retrieved from the Parks Canada website: www.pc.gc.ca/eng/progs/np-pn/ie-ei.aspx
- Parks Canada. 2013. Ecosystem Management. Retrieved from the Parks Canada website: www.pc.gc.ca/eng/progs/np-pn/eco/index.aspx
- Parks Canada. 2015. Ecosystem Management: Stressors. Retrieved from the Parks Canada website: <http://www.pc.gc.ca/eng/progs/np-pn/eco/eco3.aspx>
- Riley, J. Green, S. & Brodribb, K. 2007. A Conservation Blueprint for Canada's Prairies and Parklands. Retrieved from the Nature Conservancy of Canada website: http://support.natureconservancy.ca/pdf/blueprints/Prairies_and_Parklands.pdf
- Roach, C. Hollis, T. McLaren, B. & Bavington, D. 2006. Ducks, Bogs, and Guns: A Case Study of Stewardship Ethics in Newfoundland. *Ethics and the environment*. 11(1). 43-70.
- Slocombe, S. (1993). Implementing Ecosystem-Based Management. *BioScience*. 43(9): 612-622.

Thegreenpages.ca. 2011. Nature Conservancy Protects Habitat Near Riding Mountain National Park. *Retrieved from:* <http://thegreenpages.ca/2011/01/26/nature-conservancy-protects-habitat-near-riding-mountain-national-park/>

Unger, K. 2015. Behavioral Responses of Newfoundland Woodland Caribou to Predator Cues. *Memorial University of Newfoundland. Retrieved from Memorial University Libraries:* www.onesearch.library.mun.ca

Werklund Foundation. (N/A). *retrieved from:* <http://www.werklund.com/foundation/wfwho/landing-page-wf.cfm>

Yellowstone to Yukon. (2017). What: hot spots. *Retrieved from:* <https://y2y.net/work/what-hot-projects>