

**Access and Alteration Rules Related to Significant Wetlands
in Long Point, Ontario**

by

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ABSTRACT

ACCESS AND ALTERATION RULES RELATED TO SIGNIFICANT WETLANDS IN LONG POINT, ONTARIO

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This study sought to explore the access and alteration “rules experience” within an Ontario wetlands case study framework. The study interviewed two key stakeholder groups, key-involved stewardship agencies and key-identified wetland property owners, and aggregated them as a single response group. There were significant overlaps between these groups and the final identified potential respondent group was thirteen. All potential respondents were invited to participate in a detailed exploration of the rules experience via a thorough semi-structured interview process within the existing context of a Long Point, Ontario study area. For their own specified reasons, eight of thirteen identified and invited potential respondents chose to provide a response for analysis.

It was imagined that very specific questions about each discovered rule in the study area might provide insight into to effect and understanding of specific rule characteristics within the study area; however, nothing exceptional was revealed with respect to rule characteristics using a small detailed study group. Study area respondents appeared to have focused and specific knowledge of a collection of study area rules (often within their direct interest), but few respondents had a relatively comprehensive knowledge of the entire alteration and access rules framework.

The most interesting results within in the interview process, including the most interest in response provision by respondents, centred more generally on wetland management- with emphasis on private and public management initiatives. In this theme, while generally supportive of the apparent goals of the existing rules, respondents were divided as to how management should actually function within the study area. Despite interest by both key informant groups in wetland conservation and maintenance, the

application of public rules on private and/or organized wetland spaces occasionally appear to conflict. During the study, there appeared to be much more interest in wetland alteration rules, and, expectedly, a strongly expressed desire to have these rules more carefully scrutinized and adapted to the study area. The study area is fortunate to have a history of public and private interest in wetland conservation; this study highlights the need for these similarly interested groups to work together to reconcile the differences in expected applications of public rules.

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Acronyms and Abbreviations

CA	Cooperative Agreement/ co-operative agreement
CAA	Conservation Authorities Act
CLTIP	Conservation Land Tax Incentive Program
CPR	Common Pool Resource
CWS	Canadian Wildlife Service
DFO	Fisheries and Oceans Canada (AKA: Department of Fisheries and Oceans)
DUC	Ducks Unlimited Canada
LP	Long Point (Area)
LPRCA	Long Point Region Conservation Authority
LPC	Long Point Company (AKA: “the millionaires”; the Company)
LPW	Long Point Waterfowl (Research)
LPWA	Long Point Waterfowl Association
LPWMU	Long Point Waterfowl Management Unit (AKA: “the Unit”; the Crown marsh)
MNR	Ministry of Natural Resources (Ontario)
OFAH	Ontario Federation of Anglers and Hunters
OR	Ontario Regulation
OWES	Ontario Wetland Evaluation System
PPS	(Ontario) Provincial Policy Statement
TOAC	Tragedy of the Anti-Commons
TOC	Tragedy of the Commons

1. Introduction

As anthropogenic pressures continue in coastal and waterfront areas, the importance of good governance is further demonstrated by interest in rules affecting these areas. Of particular public interest and ecological sensitivity, coastal wetlands have been the subject of a diverse number of rules created to promote their longevity; such rules generally exist to prevent the harmful alteration of these sensitive spaces.

Prior to the recognition of coastal wetland sensitivities and importance, rules existed in these areas to better define spaces; such defining rules generally exist to describe the way these spaces may be accessed and are generally founded in ideas of 'property', allowing owners to determine the state of these sensitive areas.

Rules affecting access to and alteration of coastal wetland areas generally function as rules to exclude (with a few specific exceptions where rules that provide rights to access spaces that might not otherwise be understood as common-property resource areas). Access and alteration rules commonly function in a contextual matrix of 'property rights'. In most cases, access rules extend exclusion rights to parties, usually property owners, providing those parties with rights to prohibit entry or use of defined physical spaces. In most cases, alteration rules extend exclusion rights to parties, usually a government agency, providing those parties with rights to prohibit human-induced changes to physical spaces.

Prohibitive alteration rules exist to protect or conserve a function of space. Prohibitive alteration rules in wetland areas likewise exist to protect the ecological and hydrological functions associated with wetlands.

Prohibitive access rules provide an 'owner' with rights or control over whom may enter a physical space. Access rules in coastal wetland areas exist to define private and common property resource areas.

In Canada, interest in ecological protection and (private) property appears to be increasing. At times, rules affecting ecological protection and property appear to conflict, and an acceptable level of institutional intervention must be continuously investigated and re-evaluated through the construction and modification of access and alteration rules.

Rules affecting access and alteration are brought to the forefront in coastal wetland areas. Coastal areas are often the boundary spaces between common-property (water) and private-property (land), and coastal wetland areas blur this boundary as areas that are covered, seasonally covered by shallow water, or where the water-table is close to the surface of the land. Wetland areas are internationally identified as spaces requiring protection from harmful alteration, and coastal wetlands invoke further desires for protection as they often serve the needs of a greater number of sensitive communities.

Ontario has an identifiable collection of explicit property-affecting rules that can be used to form the basis of an access and alteration study; as such, an Ontario Great Lakes coastal wetland study area represents an impressive culmination of contemporary access and alteration rules in Canada. This study explores all known rules affecting access and alteration within key-identified wetlands in the area of Long Point, Ontario, Canada. While selecting the Long Point study area a number of considerations were made. The study area was selected because of previous literature describing its physical qualities, because of a documented history containing rule expressions, and because of a personal familiarity with the study area.

The exceptional and limiting qualities of the study area create a space to explore the interactions of wetland conservation groups; highlighting the experience between key-involved stewardship agencies and key-identified property owners.

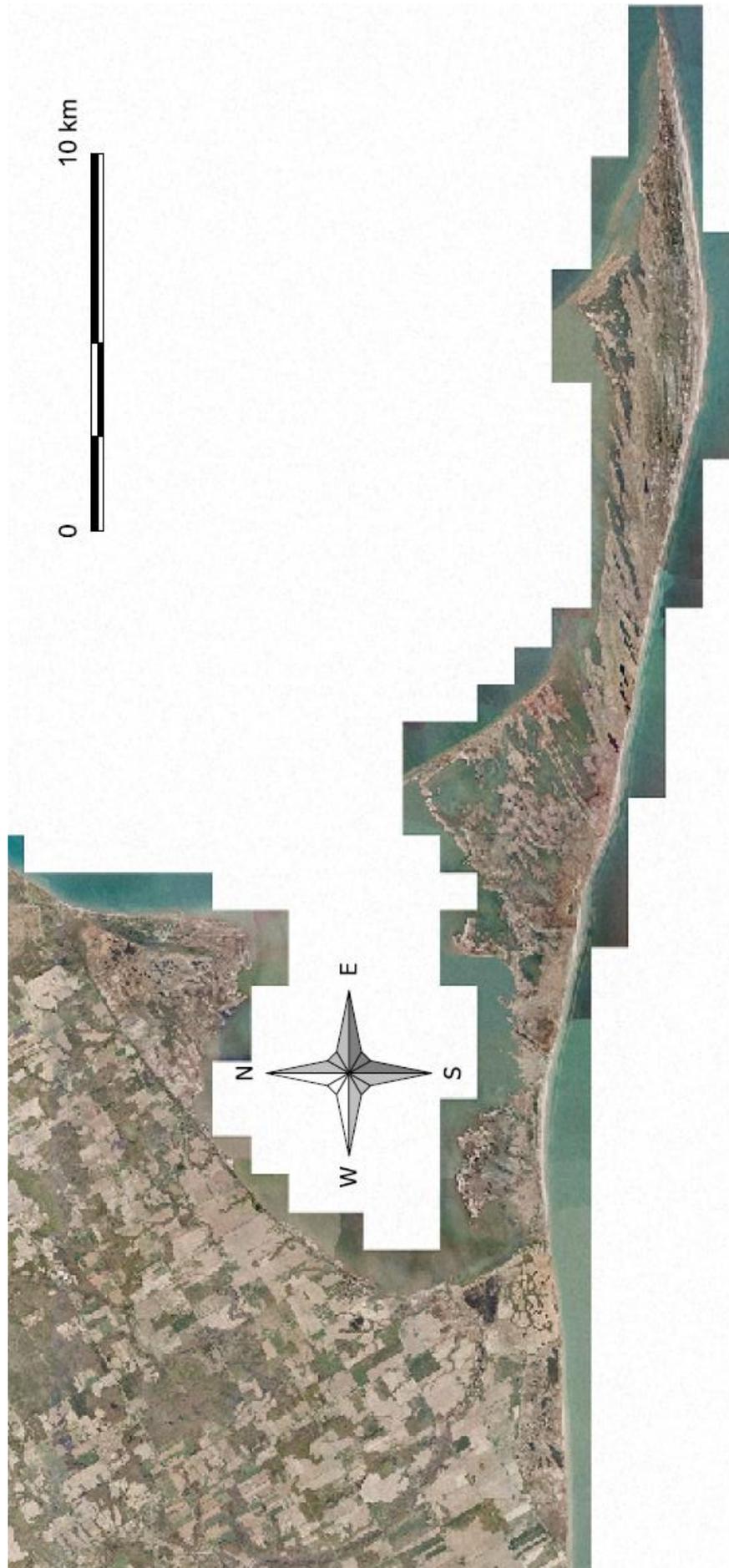
1.1 Case Study Background

1.1.1 Location

Long Point is located on the northern shore of Lake Erie in southern Ontario's rural county of Norfolk. The study area surrounding and including Long Point is also located within Norfolk County. Settlement areas in the study area are limited to one prominent resort/cottage/recreation area and Port Rowan, a hamlet residential area.

**Figure 1: Study Area
Aerial Image**

(Image from LPRCA,
2006)



1.1.2 Physical Features and Processes

Long Point itself is a dynamic sand-spit that has developed as a result of glacial deposition (see Petrie, 1998; Bunting et al., 1997). Long Point is a peninsula connected to the western portion of Norfolk County via a single causeway road through the Big Creek marsh. The area between Long Point and the northern shore of Lake Erie forms Long Point Bay. Many of the significant wetlands within this study exist in part because of the protection offered by Long Point. The study area is contained within the Big Creek watershed and the main channel of Big Creek enters Long Point bay under the causeway at the base of Long Point.

Scott Petrie (1998) describes the early formation of Long Point as:

“A glacial event that occurred approximately 10,000 years ago [leaving] massive quantities of glacial till along the north shore of Lake Erie. Prevailing winds and currents have been eroding and transporting till from west to east along the north shore of Lake Erie ever since. The presence of an underwater moraine near the base of present day Long Point slowed this littoral drift, and glacial till was deposited. This deposition started forming Long Point about 4,000 years ago and continues to be essential for the maintenance and growth of the Point today.”

The formulation of Long Point has created an area favourable to wetland development and many of the area’s significant wetlands exist because of the storm and wave protection provided by Long Point. The Long Point area is a dynamic ever-changing landscape. The same processes that form Long Point also function to devalue some of its existing significant ecological characteristics. Sediment from Big Creek and the continued migration of glacial till transform the current expressed ecological values of existing wetland spaces. Many study area users and authors express a noteworthy and theoretically expected filling of existing wetland areas because of continued sediment transport within the study area. This study focuses on those significant wetlands in Long Point and the rules that govern human alterations and accesses (see Petrie, 1998; Bunting et al. 1997).

Long Point coastal wetland water-levels are regulated by Lake Erie. The relatively shallow characteristic and limited storage capacity of Lake Erie means that water-levels affecting these wetlands change very rapidly (see Rasid et al., 1992; Petrie, 1998). Fluctuations in lake-levels are important to study area wetland vitality. Changes in lake-levels are essential to the ecologically beneficial management of these coastal wetlands; functioning to alter vegetation concentrations and sediment deposition.

The natural processes at work in the study area create an environment that invokes increased interest in access and alteration rules. Those processes have created stunning and ecologically significant wetland spaces, and those processes function to enhance or degrade currently expressed wetland values of government and non-government interests. Alteration rules in the Long Point study area exist with the intention of preventing negative human-induced wetland changes.

1.2 Social Features

Within a case study framework, the striking social features of Long Point are both exceptional and limiting. Long Point has been fortunate to maintain a group of significant landowners with genuine and focused interest in wetland maintenance (with only one exception). The study area is exempt from many of the development pressures that exist in other coastal and waterfront areas because of the conservation interests of local landowners and managers. These interests are exceptional in that wetland preservation should be easier to achieve and maintain for conservationists, and limiting in that these qualities may make this study area dissimilar to some other coastal wetland areas.

The unique social features of Long Point further reflect an interesting ecological stewardship paradigm- public and private. Within the Long Point exists conservation initiatives of both public agencies and private interests; at times, these interests appear to compliment or conflict with each other while both groups often lay claims to common ecological goals. The existence of these strongly represented interests within the study area may limit the applications of this study area to less ecologically-engaged coastal areas; however, it may offer additional concepts to encourage private ecological stewardship interests and theorize ways to reconcile conflicts between like-minded private and public interests.

This is a case study area that has a well-defined history of human-use and conservation initiative. The study area was selected, in part, because of these qualities; recognizing the limitations and additional insight that might be made available through this selection. There has been a strongly expressed desire by both key-identified landowners and key-involved stewardship agencies in this study to have public and private wetland conservation efforts work more effectively together.

1.3 Research Goals and Questions

The primary goal of this study is to better understand the matrix of rules affecting those wishing to alter or access the coastal wetlands of the study area. While having exceptional natural qualities, this study area shares many similarities in governance to coastal wetlands throughout Ontario and other regions. To assist in this understanding, following a strong literature review, four principle questions were formulated:

1. What are the rules affecting access and alteration within the Long Point area's coastal wetlands?
2. How do those groups with the greatest interest in these rules perceive them?
3. Where are there perceived gaps in the understanding of these rules?
4. How do explicit government rules today compare to the stewardship goals of locally and academically applauded landowners?

1.4 Motivations for Study

This study was motivated by a desire to better understand people's abilities to move about in and change the coastal wetland spaces of Lake Erie by developing a better understanding of those rules affecting such spaces within a case study framework. The case study area itself was selected because of existing works describing its physical features, a documented history containing rule expressions, and a personal familiarity with the study area.

Previous studies (Petrie, 1992; Barret, 1977; Barrett, 1982; Hazen, 2000) suggest that the significant ecological characteristics of the Long Point area were primarily protected and exist in large part because of stewardship-minded landowners. This study not only desires to better understand how current landowners understand their roles, but seeks to compare current coastal wetland access and alteration rules with the expressed stewardship achievements of celebrated landowners in previous works.

In addition to the important question “what are the rules?”, this study looks also to ascertain what today’s landowners and stewardship agencies think of the rules various aspects of the rules, and what they think about they think about their coastal wetland spaces. This study was conducted to examine these areas, to provide insight and make recommendations about rule creation, modification, and implementation within public and private interests.

2. Theoretical Justifications for Study

2.1 Introduction

As scientists come to a consensus that the earth is experiencing its sixth mass extinction (Chapin et al., 2000; Luck, et al., 2003; Wilson, 1992; Morris, 2010), the desire to protect sensitive species and their ecosystems grows. Locating humanity as the primary cause of the latest mass extinction event recognizes the limitations of the earth's resources and the dire consequences of human resource exploitation. For much of humanity there is an understandable desire to preserve rare species and spaces from extinction; there is also an understandable apathy arising from a sense of helplessness and inability to protect sensitive communities from anthropogenic pressures.

Wetlands represent the first type of ecosystem to receive international attention and an expressed desire from the international community for preservation (through Ramsar). Coastal wetlands are further highlighted because of their increased potential for human and non-human species use. Coastal wetlands are often more important for fisheries and migratory species; they also tend to represent a border between private and common property, concentrating anthropogenic pressures and common resource uses.

As anthropogenic pressures increase, it is increasingly important to evaluate and reevaluate how wetland resources are used; how remaining wetlands are understood, accessed and altered.

2.2 Wetlands

The way wetlands are defined varies slightly from organization to organization and the way wetlands are perceived varies more dramatically from person to person. Wetlands are often perceived as both beautiful sites of ecological diversity and underutilized stagnant wastelands. In Ontario, significant wetlands have formally been protected

since the 1980s and a good qualitative definition of wetlands is provided in Ontario's Provincial Policy Statement (PPS). Currently, the PPS describes wetlands as:

“lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface. In either case the presence of abundant water has caused the formation of hydric soils and has favoured the dominance of either hydrophytic plants or water tolerant plants. The four major types of wetlands are swamps, marshes, bogs and fens.” (PPS, p.37)

2.2.1 Defining Significant Wetlands

In this work, significant wetlands have been defined using the Ontario Wetland Evaluation System (OWES) and have been defined by the Ontario Ministry of Natural Resources (MNR) as provincially significant.

To consistently classify Ontario's wetlands, OWES was developed. The system, maintained by the MNR, is a science-based evaluation system used to determine a wetland's significance for land use and planning purposes (mnr.gov.ca, 2010). The OWES is based on four components: a biological component, a social component, a hydrological component, and a special features component. Each component is assigned a maximum value of 250 points; those wetlands achieving an overall score of at least 600 (of a 1000 maximum), or a score of 200 points in either the biological or special features component (of a 250 maximum) are considered to be “provincially significant wetlands”. Other wetlands, not examined here, may be considered ‘locally significant’ or ‘unevaluated’.

Specific to this work, significant wetlands are further defined as those wetlands considered “provincially significant” by the MNR with an area of greater than five hectares contained within a single parcel of land. Provincially significant coastal wetlands of five hectares or larger by area were further explored because of their greater potentiality to maintain the uniquely identified ecological values (see Section

2.2.3) under any construction of alteration or property rights (see Section 3.2.2.4-Methodology).

2.2.2 Reasons for Conserving Wetlands

For wetland-users and ecologists, the value in conserving wetlands is apparent; however, most Ontarians are not direct wetland-users or ecologists and their values may conflict with the conservation ideals of wetland enthusiasts. Reasons for conserving wetlands remain ongoing sites of contestation, although it appears that Ontario has taken a legislative stand to protect its remaining wetland areas.

Wetlands provide a number of valuable hydrologic and ecologic functions, including storm-water storage, wildlife habitat, and other water quality and hydrologic functions. Despite the provision of such valuable services, wetland loss in Ontario is estimated at 70% with an estimated loss of more than 90% in some regions (De Laporte et al., 2010; Mitsch and Gosselink, 2007; DUC, 2010).

Wetlands are critically important to aquatic, avian, and terrestrial species. Very high and increasing wetland losses means that species dependent on wetlands are increasingly constrained to (often isolated) limited spaces; as well, human wetland-users are further concentrated to such diminishing spaces placing additional strains on wetland capacities.

Ontario has traditionally focused on the creation of economically productive lands (De Laporte et al., 2010; Mitsch and Gosselink, 2007; Walters and Shrubsole, 2005), and wetlands have generally not represented these spaces (contributing to high wetland losses). Despite past trends, increasingly, it appears to be more difficult for Ontarians to place the economic benefit of wetland loss above the ecological and hydrological benefits provided by wetland maintenance.

The beginning of Ontario's provincial interest in wetlands may be located in the signing of "The Convention on Wetlands of International Importance", also called the "Ramsar Convention", or "Ramsar". Ramsar is the first international treaty that seeks to protect a specific ecosystem, wetlands, and was signed by Canada in 1981. One of Ramsar's founding interests in wetland protection was to insure the preservation of habitat for migratory water-birds. In addition to these founding interests, Ontario's provincial interest in wetland protection and maintenance includes the previously noted ecological and hydrological values, and is primarily implemented through the Provincial Policy Statement, the Conservation Authorities Act, the Fisheries Act, and other species-specific legislative works.

2.2.3 Reasons for Conserving the Wetlands of the Long Point Area

In addition to the reasons for conserving wetlands in general, the literature regarding the Long Point area identifies several more important and unique ecological features worthy of conservation and protection.

Ecological value in this study refers to the expressions of beliefs that guide activities which may have an ecological impact. The expressions of ecological value are often used to form and inform rules affecting ecologically sensitive areas. For example, the commonly expressed rule that "significant wetlands are not to be destroyed" was likely formed as a result of the belief that significant wetlands support important wildlife species and/or protect and enhance water, etc., and that the destruction of such spaces may result in a negative ecological impact.

Two key ecological values are overwhelmingly represented in the existing literature for the Long Point/ Long Point bay areas. Uniquely identified in addition to anticipated coastal wetlands ecological values are the important roles that the study area wetlands play as both a spawning habitat for the Lake Erie fishery and as a staging area for migratory water-birds.

2.2.3.1 Migratory Water-bird Staging Area

Long Point Bay and specifically Long Point area wetlands (study area) are uniquely identified as an “internationally important area for staging waterfowl” (Knapton, et al., 2000; Petrie, 1998). The importance of this area to waterfowl is further reflected in the study area’s traditional uses. Many of the most significant wetland areas in the study area are owned by individuals and groups with specific interests in waterfowl. The intact coastal wetland areas in the study area are often very positively attributed to the effort and investment of private hunting interests (Barrett, 1981; Petrie, 1998; Barrett, 1977).

2.2.3.2 Fish Spawning Area

Coastal wetlands, including Long Point area coastal wetlands play an important role in maintaining Lake Erie’s fisheries. The study area’s coastal wetlands specifically provide spawning and feeding habitat for northern pike and a larger variety of fish, birds, amphibians and reptiles (including many sensitive species).

Human intervention is again credited with improving the natural conditions that are preferred by these species. Petrie (1998) indicates that alteration works by waterfowl hunting interests often provide important and improved habitats for fish and other marsh-dependant species when carried-out appropriately. Most of the study area coastal wetlands are not controlled, to the benefit expressed by van Vuuren and Roy (1992) and Wilcox and Whillans (1999). Van Vuuren and Roy describe two types of Great Lakes coastal wetlands: diked and undiked. Dikes are often used to control water-levels to create favourable conditions for waterfowl hunting. While diked and undiked marshes both support the biological needs of waterfowl, Wilcox and Whillans suggest that “dikes and control structures typically isolate coastal wetlands from the lakes... convert[ing] them to inland wetlands adjacent to the lake” (p.837). The ecological value of a coastal wetland may be decreased if control structures represent a barrier to wildlife and fish migration. It is important to note that key-involved

stewardship agencies have identified fish, including species at risk, in all 'controlled' study area coastal wetlands.

2.3 Defining Property Rights in Canada

"Property rights", those rights that an individual or group may claim over a specific geographic space, are not explicitly entrenched in Canada. Without explicitly constitutionally entrenched property rules, it can be argued that real property rights do not exist in Canada.

Property rights remain un-entrenched in Canada for a few key reasons published in a 1991 report by the Government of Canada (Johansen, October 1991): A definition of property has not been created for legal use. Often property is used as a term extending beyond lands to things like "benefits" and "ideas"; Canadian law-makers are conscious of this and are weary of it when considering property entrenchment; Many provinces fear that entrenching property rights will impede their ability to protect (common) resources and determine land-use.

2.3.1 United Nations Declaration of Human Rights, Article 17

Property is most explicitly implied as a right in Canada within the United Nations Universal Declaration of Human Rights, Article 17. Canada signed the aforementioned declaration in 1984, which reads:

1. Everyone has the right to own property alone as well as in association with others.
2. No one shall arbitrarily be deprived of his property.

Not declaring what rights might be included within property ownership or what arbitrary deprivation may be, this appears to be as explicitly as property rights are defined by the Canadian federal government.

2.4 Access in Long Point's Coastal Wetlands

Without clearly and explicitly defined Canadian property rights, the access to Long Point's coastal wetlands relies heavily on more implicit and provincially located rules. Some communities, particularly the waterfowl hunting community, in the Long Point area follow additional communally understood rules restricting access to various opportunities in what is understood as common resource areas of the study area. The province of Ontario provides further access rights, primarily through legislative works: the Trespass to Property Act, the Public Lands Act, and the Beds of Navigable Waters Act.

2.4.1 Trespass to Property Act

Generally, Ontario's Trespass to Property Act (TPA) (1990) establishes property rights regarding access. The TPA focuses on how property held by private interests may be entered. Specifically, Section 3(1), "Prohibition of Entry" establishes where notice is and is not required to prohibit entry.

Section 3(1)(a) prohibits entry on premises "that is a garden, field or other land that is under cultivation, including lawn, orchard, vineyard and premises on which trees have been planted and have not attained an average height of more than two meters and woodlots on land used primarily for agricultural purposes".

Section 3(1)(b) prohibits entry on premises that [are] "enclosed in a manner that indicates the occupier's intention to keep person off the premises or to keep animals on the premises".

The implication of Section 3(1) (a) and (b) is an establishment of lands where person may enter unless notified to the contrary. These sections imply that a person may enter lands that are not used for agricultural purposes, lawn, or lands containing new plantings; however, a person may enter lands not containing these features where there

is no indicated attempt to keep people out or animals in (often represented as fences and “no trespassing” signs).

Much of the Long Point study area contains wetlands that, without notification, appear to be open for entry. Many of the study area lands contain notifications restricting entry; including lands owned both by public and private interests.

2.4.2 Public Lands Act

It is legislatively clear that navigable waters and their beds, including Lake Erie, are to be considered public lands. It is, however, legislatively unclear as to how the distinction between public lands (water and bed) and potential private lands (land) is made. Ontario’s Public Lands Act (RSO 1990) and associated Public Lands Act Work Permits policy (section 14: policy number PL 3.03.04) do not identify these areas with much more clarity, but make important reference to “shore lands” and an “ordinary high water mark”.

It is not clear whether “shore lands” and lands below an “ordinary high water mark” are public or potentially private, but it is clear that the province of Ontario currently requires activities in these areas to receive permission from the province. Permission may be required because these lands are considered public or because these lands have an increased potential to affect public lands.

The Work Permits policy identifies “shore lands” as lands covered or seasonally inundated by the water of a lake, river, stream or pond” and includes “public and private land”; this definition is strikingly similar to the Ontario Provincial Policy Statement’s definition of a wetland which begins: “lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the surface”.

The Work Permits policy identifies an “ordinary high water mark” as “the mark made by the action of water under natural conditions on the shore or bank of a body of water

which action is so common and usual and so long continued that it has created a difference between the character of the vegetation or soil on one side of the mark and the character of the vegetation or soil on the other side of the mark”.

While not providing explicit legislative clarity, particularly regarding property (public/private) boundaries, the Public Lands Act in Ontario remains an important work influencing alteration on or adjacent to public lands; areas which coastal wetlands certainly represent.

2.4.3 Beds of Navigable Waters Act

The Beds of Navigable Waters Act (2002) confirms that not only those lands below a high-water mark are public, the beds of those waters (navigable waters or streams) are also public unless expressly granted from the Crown to an owner. Certainly and at least, the borders and channels of coastal wetland spaces appear to be considered Crown land, including the lands beneath these spaces.

2.4.4 The Waterfowl Hunting Community

The waterfowl hunting community of the Long Point area has uniquely developed its own rules regarding access within common-pool resource areas. This does not appear to be completely unique within the southern Ontario Great Lakes waterfowl hunting community, but does appear to be defined to a unique group of rule-creators within the Long Point area. The Long Point area waterfowl hunting community appears to have made at least two identifiable rules for itself that are practiced within the unrestricted common property wetland areas. These rules are not explicitly expressed through law, but have gained popular recognition within the community.

The first rule prohibits hunting within a specified distance of other hunters in generally unrestricted areas. Local waterfowl hunters do not appear to have reached a

consensus on a specific distance, but there does to be a high-level of agreement that a rule regarding a minimum distance separation does and should exist.

Barrett's *The Lore and Legends of Long Point* (1977) recorded this rule, making note of a "battle ground" event on Long Point Company property in 1885. During this event, hunters raced to mark their "spot" with decoys, forcing other hunters to stay more than "400 yards" from this point. The intent of this rule is to limit access to ducks and provide undisturbed hunts for the first hunter to establish his preferred location for the day.

The second waterfowl hunting community-generated rule allows hunters to claim a desired hunting spot for "opening day" of duck season at Long Point. The activity associated with this rule involves hunters driving a stake into the lake bottom with their names on it above the water, identifying that spot as reserved for those hunters. In personal communications with a number of hunters expressing this rule; this rule appears to expressed as only being valid for the first day of the duck hunting season, and hunters are not eligible to stake a spot for any other day of the year.

2.5 Alteration in Long Point's Coastal Wetlands

While a few key pieces of legislation can typically be used to define the access rules in the study area, a greater number of rules with overlapping complexity define how alteration may occur in the Long Point area wetlands. Rules affecting alteration can be found as expressed in legislation and regulation, designations of significance placed on the study area, and within the mandates of key-involved stewardship agencies.

2.5.1 Legislation and Regulation

Existing legislation and regulation most explicitly defines how wetlands may be altered in the study area. Generally the Conservation Authorities Act and the Provincial Policy Statement (empowered by the Ontario Planning Act) prohibit development in significant

wetlands (OR 178/06, Section 2(1)(d); PPS, Section 2.1.3(c)). Similarly, the Conservation Authorities Act further prohibits development (alteration) within 120m of a significant wetland, unless that alteration can be shown not to have a negative impact on the adjacent wetlands (OR 178/06, Section 2(1)(e)). The Ontario Provincial Policy statement further guides development away from wetlands by insisting that natural features and areas be “protected for the long-term” (Section 2.1.1).

The study area represents a space that exists entirely below the estimated flood water-level during a 100-year storm event. In addition to protecting wetlands for ecologic and hydrologic functions, these legislations (CAA and PPS) generally prohibit development in these spaces from a hazard prospective (flooding).

While the Planning Act and the Conservation Authorities Act generally protect wetlands (provincial), the Fisheries Act and Species At Risk Act (Federal) restrict alterations that may have a negative impact on species. While not explicitly restricting alterations in the study area wetland spaces, these spaces exist both as fish habitat and species at risk habitat and alteration to these spaces is highly-restricted.

Section 35(1) of the Fisheries Act (1985) states that “no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.” This statement prohibits alterations with the effect of loss of fish habitat.

Section 33, 36(c), and 58 of the Species At Risk Act(2002) prohibit development with the effect of loss of species at risk or endangered species habitat. “No person shall destroy or damage a residence of a species at risk or endangered species” (Section 33).

These legislative sections most clearly restrict alteration in the study area; however, similar statements within these works further act to guide development away from the study area wetlands spaces.

2.5.2 Designations

Many organizations have “designated” the study area as being significant in some way. While these designations do not have the enforcement power of some other rules, they represent a collection of individuals that have come together to express how people ought to behave in these spaces and can be used to inform a level of enforcement granted under another authority.

2.5.2.1 Provincially Significant Wetland

Discussed in Section 2.2.1 of this work, the significance of the study area is defined using Ontario Wetland Evaluation System- Southern Manual. Using this manual, all of the study area wetlands have been defined as “Provincially Significant”. These designations are fundamental in defining the protection offered through the Conservation Authorities Act and the Planning Act.

2.5.2.2 Wetland Of International Importance

In 1981, Canada adopted the ideas of Ramsar, more formally known as “The Convention on Wetlands of International Importance”. Ramsar, negotiated throughout the 1960s and adopted in Ramsar, Iran in 1971, began as negotiations between state and non-government actors with concerns about wetland loss and degradation resulting in habitat and species endangerment related to waterbirds (ramsar.org, 2010). The study area has been designated by the Convention as a “Wetland of International Importance”; as a state member, Canada supports the idea that the study area’s wetlands are to be used “wisely”.

2.5.2.3 World Biosphere Reserve

The United Nations Educational Scientific and Cultural Organization (UNESCO) has designated much of the Long Point area, including a majority of the study area, as a “World Biosphere Reserve”. This designation insists that “landscapes, ecosystems, species and genetic variation should be conserved”, implying further protection of the study area wetlands.

2.6 Modifying the Rules

As resource pressures increase, as resources and species become increasingly scarce, it may be important to modify the existing rules, or to create new rules to protect those resources that are of most interest to the public. Such modifications include the imposition of rules to prevent the destruction of wetland spaces, particularly habitats of significant species, but also include the imposition of rules to control access, creating an atmosphere that allows for a diversity of investment in resource availability.

In 1977 (*Lore and Legends of Long Point*), Harry Barrett wrote that government intervention had not yet caught up to the stewardship-minded efforts of the Long Point Company. Since that time, Canada has adopted the ideas set forth in Ramsar and defined and strengthened protection for provincially significant wetlands and significant and sensitive habitats. As this study will demonstrate, the rules in the study area have been modified across time and will continue to be modified as time passes.

3. Methodology

This study was developed to explore rules that affect the ability to access or alter wetland spaces within an identifiable context. A case study area in the Long Point, Ontario area was determined to be suitable using a number of criteria, including an existing body of wetland and human-wetland interaction works.

This study includes a variety of research approaches, including: a review of existing government policy and regulation, spatial and ecological function analysis, analysis and collection of organizational and community rule expressions, and semi-structured interviews. A variety of approaches have been used for rule collection purposes to gain as complete of a list as possible when identifying existing local wetland access and alteration rules (see Section 3.2).

Two groups were identified and selected for invitation to participate in semi-structured interviews. “Key parcel owners” and “key stewardship agencies” were invited to participate in semi-structured interviews within the study. The invited participants represent two easily identifiable and important groups within the study area.

While alteration rules are primarily applied to parcel-owners, access rules are generally applicable to a larger number of wetland-user groups. The application/enforcement of access rules generally appears to be ‘reactive’ and at the appeal of parcel-owners. Other identifiable wetland-user communities are generally highly-migratory and seasonal; populations were not easily identifiable over the duration of this study.

In identifying “key parcel owners”, an informed spatial analysis was employed to select those landowners with wetlands of significant size. All of the owners identified in this analysis were invited to participate in semi-structured interviews as “key-identified parcel owners”.

“Key stewardship agencies” were identified through internet searches, identification by local individuals, and by requests for such information made to other stewardship agencies. All identified key stewardship agencies were invited to participate as “key stewardship agencies”.

To address potentially reluctant participants, participants (or participant organizations) are not identified; stewardship agencies are not identified; parcels are not identified; and only a general study area is identified, recognizing prior research in the area.

Recognizing temporal limitations and desires for participant confidentiality and anonymity, this study has been structured in a way to gain meaningful results while encouraging participation and fostering further interest in “rules research” in the study area.

3.1 Human Wetland Interactions (A Brief History)

To address the value of human interaction with the study area and the criteria for selection of study area participants, it is important to explore the human history of the study area. Common to most coastal areas, the use of the study area’s wetlands and adjacent lands and waters is increasing. How people interact with these important and sensitive spaces is foundational to this study. In part, this case study was selected because of the area’s well-documented history of human-wetland interaction.

3.1.1 First Nations

Long Point is not a European discovery, a number of First Nations peoples have inhabited or used the area. The study area appears to have been inhabited by the Chonnonton and is included in the traditional lands of the Huron, the Mississaugas of the New Credit, and the Six Nations of the Grand River. It appears that during the mid-seventeenth century, the Chonnonton were “wiped-out” during the “Beaver Wars”, and

the area's rich hunting grounds were used on a 'first come first served' basis for several of the following decades (Barrett, 1981).

3.1.2 Early European Interactions

Similar to First Nations Long Point users, early Europeans marvelled at the natural resources in the Long Point area. The first European person built a home and settled in the Long Point area in 1790, and by 1794 a small harbour had been created and the first sloop "calculated for carrying lumber" was advertized for sale in the area (Barrett, 1981, p.82). Aggravated by increased British immigration as a result of the War of 1812, land in the Long Point area was quickly logged and cleared for lumber and agricultural purposes (Barrett, 1982).

By the mid-19th century, market hunting had come to the Long Point area and much of the north-west shore of Lake Erie. Game animals of almost every sort were slaughtered following the establishment of the Grand Trunk Railway in 1856. The coastal wetland spaces of the Long Point area remained resilient to complete decimation, perhaps because of the increased difficulties associated with access in these spaces; however, exploitive pressures began to re-direct themselves toward Long Point as other more accessible wetland areas lost their resource values. (Barret, 1982; Hazen, 2000)

Barrett's 1982 work further describes the context that lead to the sale of much of Long Point to private interests (the Long Point Company):

"In no time, Long Point had developed an unenviable reputation as a 'no-man's land' of drunkenness, murder, and debauchery of every kind... Complaints reaching the government finally became so embarrassing that they were forced to take some action. Attempts to police it were fruitless. The simplest solutions appeared to be to sell it, and the Crown Lands department was instructed to offer it for sale at public auction." (Barret, 1982, p.179)

The exploitation of Long Point's resources and inability of government to control the destructive uses of Long Point's ecologically valued spaces resulted in the sale of much of the study area to private interests.

3.1.3 The Long Point Company

The Long Point Company (LPC) was established and government recognized with the sale of much of Long Point to private interests in the 1860s, and represents the first formally recognized "hunt club" in the Long Point area. As a response to uncontrollable illicit activities, the Canadian government sold nearly fifteen-thousand acres to what would become the Long Point Company in 1866.

The historic and explicit desires of the LPC have been to sustainably utilize the area's resources, primarily through hunting and fishing opportunities. The influence and values of the LPC have been applauded by conservationists in many academic works describing the Long Point area (Petrie, 1992; Barrett, 1977; Barrett, 1982; Hazen, 2000).

Unlike many other property owners, the LPC seems to have argued for and received rights that extend into what might usually be understood as common property (public) areas (Barrett, 1977). The Company appears to have been granted control of access that extends noticeably into Lake Erie.

The history and influence of the LPC make it a very important pillar in the study area's coastal wetland management. The LPC has a well-documented history of controlling access and controlling alteration for the benefit of the local ecosystem. The LPC has been described as both the hero that saved Long Point from environmental destruction and as the villain that stole a public resource space and placed it in reservation for the rich and elite (Barrett, 1977; Hazen, 2000).

More than three decades ago, Barrett (1977) described the position of the LPC as one of environmental hero. Barrett claims the Company ignores most trespasses on LPC property “whose actions pose no threat to the Point”, but remains vigilant against destructive uses (p.178). Speaking more than three decades ago, Barrett recognized increasing pressures in the sensitive Long Point area and recorded the Company’s concerns:

“Much more serious, there is growing public and government pressure to open the land to public use. This upsets many of the members, not primarily because it threatens their private hunting preserve but because they fear open public use would threaten Long Point itself. They respect the aim of the founding members – to save the land from destruction by overuse -- and they fear public access would undo one hundred years of their work.” (p.178)

“Should a government agency or employee attempt the same control, the worst offenders from among the general public would exert such political pressure that soon the most unsavoury and thoughtless citizenry would be invading the marshes and dunes at all seasons. The resultant harassment of the wild life and destruction of the vegetation over the unstable dunes would spell the demise of that fragile and beautiful sandspit as we know it.” (p.179)

The LPC, the oldest legitimate and largest private land-holder in the Long Point area, has long advocated for intervention and restrictions in use to prevent the destruction of the Long Point area wetlands, fearing that public agencies cannot avoid destructive political pressures. To prevent ecological harm, the Company purchased a large amount of property from the Canadian government and strictly manages access and alterations in that space.

3.1.4 The Long Point Waterfowl Management Unit

The Long Point Waterfowl Management Unit (LPWMU), often referred to as “the Unit”, is a provincially-owned, cooperatively managed waterfowl hunting and ecologically-significant space. While the Unit refers to both the space and its management structure, the physical space is also often referred to as the “Crown marsh”.

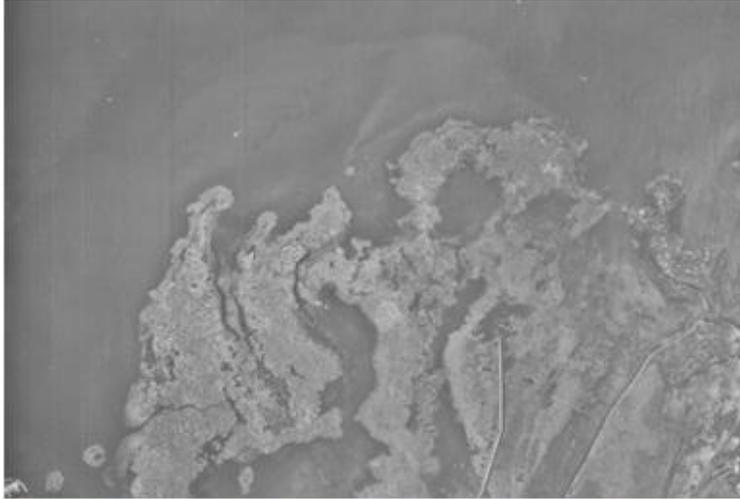
The LPWMU formed in 1961 as a response to the desires of Long Point area hunters to control and create good quality hunting opportunities for the public in decreasingly accessible hunting spaces (Barrett, 1977; Petri, 1998; Hazen, 2000; Badzinski, 2007). The Unit is managed in two zones: A Zone and B Zone. A Zone is the largest portion of the Unit and requires hunters to hunt from a previously established “blind” or “shooting point” selected by the hunter(s) on managed hunting days. B Zone is a smaller portion of the Unit and allows hunters the opportunity to select their hunting location on a first come first served basis on managed hunting days. Both zones within the Unit require hunters to report their waterfowl harvest information at the end of each day’s hunt.

While owned by the province, the LPWMU receives much of its management direction and support from outside sources, primarily the Long Point Waterfowl Association (LPWA) and the Ontario Federation of Anglers and Hunters (OFAH). While the province owns the infrastructure, much of the yearly work required by the Unit to accommodate hunters is carried-out by the LPWA, the OFAH, and other volunteers.

The LPWA appears to have the most direct involvement in the Unit’s management, allowing anyone to join the Association for a yearly fee. The LPWA holds annual meetings to discuss the state of the Unit and their desires for improvement. The Unit exists as the most publicly-oriented waterfowl hunting opportunity at Long Point, is most easily accessible (offering both “walk-out” and “boat-out” hunting opportunities), and is most closely located to other recreational uses in the area; as such, the Unit receives the most public attention in the study area and arguably the most interest in alteration.

In 2006, following interest by the LPWA to alter the Crown Marsh, the LPWA held a “Crown Marsh Rehabilitation Review Day” at Bird Studies Canada, in Port Rowan; assembling more than 35 natural resources professionals to discuss management and use options for the Crown marsh. Following the meeting, a commitment was made to develop a long-term rehabilitation plan for the Crown marsh, engaging a variety of stakeholders, including the public, and involving intentions to alter the marsh.

In 2007, Badzinski drafted an unpublished work “Towards the Rehabilitation of the Crown Marsh”. In this work, based on the initial input from stakeholders and experts, Badzinski makes three recommendations for the Crown marsh: 1) Increase habitat interspersation by creating a mosaic of open water areas in large unbroken tracts of cattail and/or *Phragmites australis*; 2) Create a controlled marsh to facilitate water level manipulation and vegetation management; 3) Eliminate and/or control *Phragmites australis* stands that are established in the marsh. All of the recommendations offered by Badzinski recommend an alteration of significant wetland space, which is generally contrary to alteration rules found in the study area. Currently, the LPWA appears to have funded one significant alteration project following Badzinski’s recommendations, and a large “roosting pond” has been created in the western portion of the Unit. Other proposals put forward by the LPWA toward these goals have not yet received favourable consideration by involved government agencies (see Figure 2).



An area recently altered, circa 2010. The same area as it appeared in 1972 (top left); 2006 (bottom left); 2010 (bottom right). Altered area highlighted in 2006 and 2010 images.



Figure 2: A Portion of the Crown Marsh, 1972; 2006; 2010

(Images from LPRCA, 2011)

3.1.5 Tourism and Recreation

The Long Point area's wetlands and Long Point Bay host a variety of year-round users, including: recreational boaters and pleasure-craft enthusiasts, commercial fishermen, anglers, hunters, amateur and professional ornithologists, swimmers, beach-goers, and other outdoor enthusiasts. Norfolk County, the municipality containing the study area, has undergone many recent changes in economic focus. Prior to the twentieth century, the area's primary economic focus was the timber industry, the result left the area desert-like because of severe soil erosion within the County's sandy lands. Niewojt

(2007) has referred to the county as a “waste land” during this period, which existed prior to the regional identity of “Tobacco Production Heartland”.

The tobacco industry has since declined, and the municipal home of the study area again finds itself in transition; many local residents blaming government policy for the decline in the local tobacco industry (Niewojt, 2007). Currently, a good portion of Norfolk County’s economic transition strategy appears to have a strong focus on tourism, much of it seeking to potentially increase pressures on the sensitive study area wetlands and adjacent spaces. Uncontrolled recreational activities have been blamed for ecologic destruction in the space prior to the establishment of the Long Point Company, and Norfolk County must be careful to balance its tourism desires with ecological and social capacities in the study area going forward.

3.2 Rule List Generation

This study will function as an evaluation of the perceived effect of the existing access and alteration rules within the context of Long Point’s coastal wetlands. A majority of these rules are ‘exclusion rules’; they function to exclude a party or parties from accessing or altering wetland areas, however, a few rules exist to enable parties to access wetland areas that may not commonly be understood as common-pool resources.

This study examines the perception of rules by key-involved local participants. It was important to generate a list of existing rules for consideration in semi-structured interviews. A list of rules was generated through a variety of methods. Government and many other organizational rules can often be found through e-law (internet versions of regulations) searches and other internet searches. Occasionally, stewardship agencies were asked about any existing rules or mandates that enabled their function; when appropriate, rules were extrapolated from the expressed goals of an organization.

The most difficult rules to collect were those rules which are established only by the local communities themselves (and not any more formal legislative body). Even more difficult, was the collection of those rules that are established by a local community and intended only for that community (in example, local waterfowl hunters have established rules within their community that govern access provided to other waterfowl hunters). These community-established rules were often directly solicited from various community members, inquired about through correspondence with locally-involved stewardship agencies, and acquired through participant and non-participant observations while in the study area.

As many rules as possible were collected prior to the administration of the semi-structured interviews. Following the semi-structured interviews, participants were invited to suggest any known rules that had not yet been included in the survey and provision was made for a second interview had any participant expressed previously unrecorded rules; no additional rules were discovered during the semi-structured interview process.

3.3 Semi-structured Interviews

Semi-structured interviews were conducted with two main rule-experiencing groups: “stewardship agencies” and “parcel owners”. The semi-structured interviews have been designed to establish the context in which the rules exist, to examine the function of these rules as expressed by the participants, and to explore any alternatives or preferences associated with rule characteristics.

3.3.1 Key-Involved Stewardship Agencies

“Stewardship agencies” have been selected as those groups with interests in wetland conservation and maintenance. Often, the identified stewardship agencies are “rule-creators”, “rule-expressers”, “rule-evaluators”, “rule-interpreters” and/or “rule-enforcers”.

“Key-involved stewardship agencies” are further distinguished from “stewardship agencies” and used in this study as those groups with interests in wetland conservation and maintenance who are actively involved in the study area wetlands. Because this study examines the experienced application of existing rules, those (legislatively) present but inactive stewardship agencies have been excluded from participation; it was not estimated that these “uninvolved stewardship agencies” would have sufficient experience with the “rule experience” in the area. Key-identified stewardship agencies include government, government-enacted, and non-government groups. Thirteen “key-involved stewardship agencies” were identified and invited to participate in the semi-structured interview process.

3.3.2 Key-Identified Parcel Owners

The participation group “key-identified parcel owners” establishes those individuals and parties with claims to well-defined ‘property rights’ who are enabled to express the greatest amount of control related to access and who are generally most affected by rules involving alteration within further defined ‘significant’ parcels. These parties have been granted ‘title’/ownership by the Canadian government over specifically identified spaces.

3.3.2.1 Parcels within 100m of Lake Erie

“Key-identified parcel owners” have been identified using a spatial analysis of the study area to determine relevant parcels. Using existing parcel data, an immediate 100m buffer from Lake Erie was created to select only those parcels that can be assumed as coastal wetlands. It is important to recognize that parcels further inland than 100m may share many important similarities to coastal wetlands and may exist as wetlands because of lake water-levels; however, it is assumed that these more ‘inland’ wetlands

do not experience the same sort of anthropogenic pressures and rules use as those wetlands directly abutting Lake Erie (a common-pool resource area).

3.3.2.2 Parcels within the Long Point Area

The Long Point area has been selected for case study analysis because of the existing bodies of work that have been established for this area, including discussion on wetland access and alteration characteristics. Unlike other Ontario coastal wetland areas, the Long Point area has a relatively well-documented history of local wetland features and human-wetland interactions. In determining a case study area, Long Point presented itself as a somewhat unique and exceptional choice for exploration.

3.3.2.3 Parcels Containing Provincially Significant Wetland

Like the Long Point study area itself, wetlands have been an established focus of rules relating to access and alteration (particularly alteration) since the adoption of the “Convention of Wetlands of International Importance” (also known as Ramsar) by Canada in 1981. Ramsar formally identifies global interest in wetlands and wetland functions and such interests have since extended to further policy and regulation regarding wetlands in the Long Point area. In this study wetlands are identified as those areas designated by the Ontario Ministry of Natural resources as “provincially significant wetlands”. Wetlands designated as “provincially significant” are done so using the Ontario Wetland Evaluation System (Southern Manual) and the Ontario Ministry of Natural Resources keeps these records as ‘open files’.

3.3.2.4 Parcels Containing 5 Hectares or More of Provincially Significant Wetland

To further refine ‘significant’ as applicable to this study’s access and alteration orientation, advice informing the importance of Long Point’s wetlands was sought through further literature review and existing designations implications. Access and

alteration rules often have a prominent location in “property” and “property rights”. Within this orientation some property owners may seek a collection of rights that does not limit their ability to alter or exclude others from accessing their property. Under the potential conditions that would specifically provide parties with the ability to alter wetlands without restriction, it is important to consider those parcels that should remain significant should neighbouring parcel owners alter their wetlands to degrade or destroy the currently expressed ecological value associated with provincial significance.

This study considers those wetland properties that are equal to or greater than 5 hectares (ha) as being significant as individual management or property units. Investigating marsh size and isolation in Iowa, Brown and Dinsmore (1986) found that 21 of 25 indicator marsh bird species were present in marshes between 5 and 11 ha, while only 13-15 of 25 species were present in marshes of less than 5ha and a Long Point specific work by Petrie (1998) appears to agree with this application to the Long Point area.

In this study, key-involved wetland parcels include those parcels within 100m of Lake Erie in the Long Point area that contain equal to or greater than 5ha of provincially significant wetland area. In any construction of rules, these parcels have the greatest ability to remain as significant wetland units.

3.3.2.5 Identifying Parcel Owners

Parcel owners for key-identified parcels were identified through available methods. Service Ontario currently provides a ‘title search’ service to obtain ownership information. Using this information, key-identified parcel owners were contacted and invited to participate as “key-identified parcel owners” using internet searches, information obtained from other participants, and where a structure existed on site an invitation was attempted (and where applicable extended on-site), expressing that interviews could be conducted at their convenience.

More than 12 “Key-identified parcels” and 7 “key-identified parcel owners” were identified. In many cases, ownership was not specific to an individual and even in cases of individual ownership a “parcel manager” was accepted as a participant if such a proxy was assumed to have knowledge of the parcel and local wetland access and alteration rules.

Key-Identified Parcel Owners Process

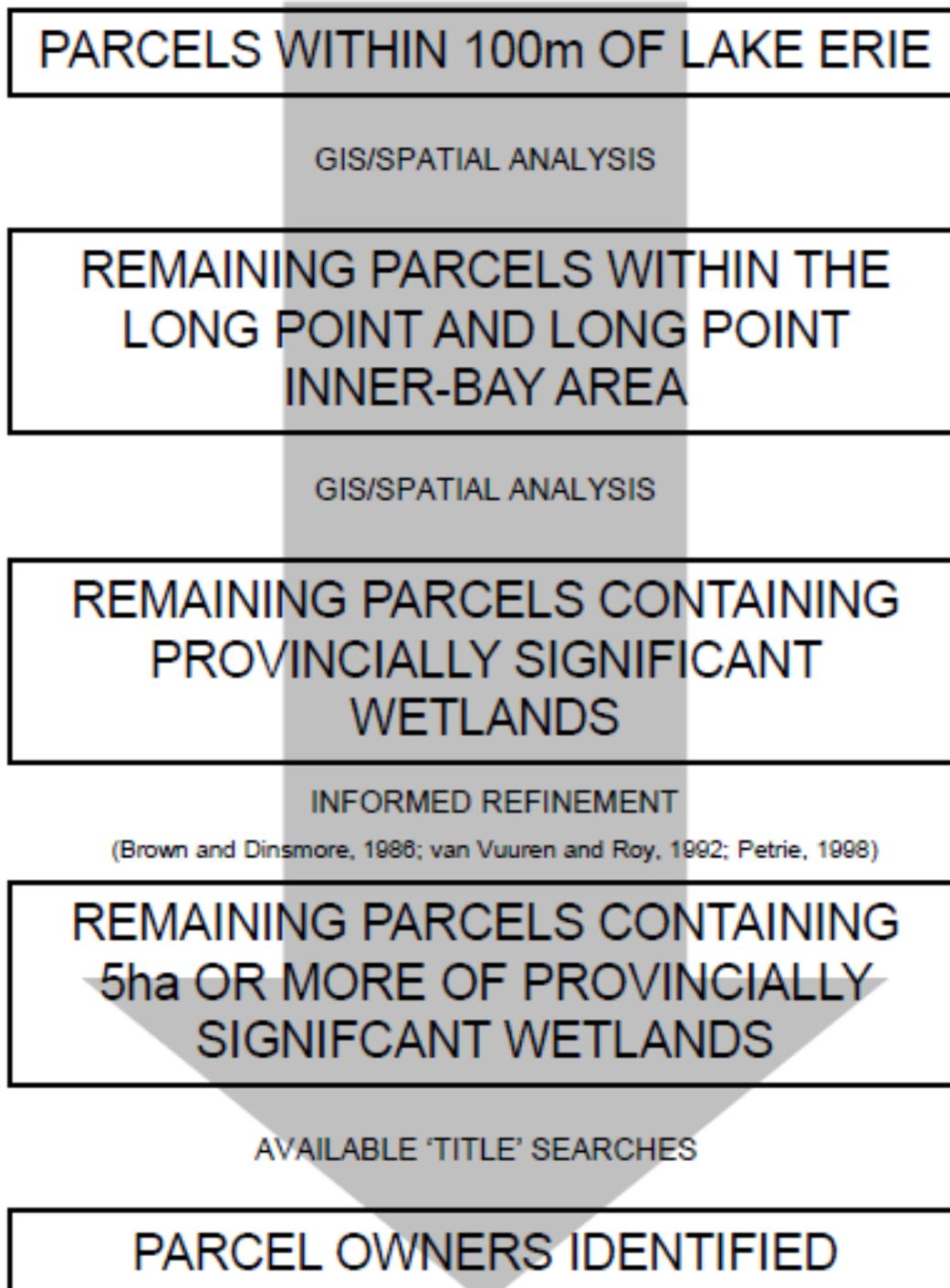


Figure 3: Key-Identified Parcel Owners Selection Process

3.4 Uniquely Identified Respondents

Following the identification of key property owners and stewardship agencies, it became apparent that there were noticeable and significant overlaps between the identified groups. Identified stewardship agencies also represent property owners within the study area. In cases of overlap between the two identified groups, a single response was collected unless the potential respondent self-identified an anticipated significant difference in rule experience warranting two separate responses (one as a stewardship agency, one as a property owner).

Within the study area, there is also overlap within parcel ownership. One group may own several parcels of land and a single multiple property-owning group may manage each property very differently. A single response was collected from these multiple property-owning groups.

Considering overlap, after identifying significant properties (15+), significant property owners (9), and key-involved stewardship agencies (9), thirteen unique potential respondents were identified. All thirteen unique respondents were invited to participate in this study, and nine respondents choose to provide full or partial responses to the requested semi-structured interviews conducted in this study.

3.5 Analyses and Presentation

The details included in this methodology were used to inform and structure this study. This study attempts to present an accurate account of the rules affecting coastal wetland access and alteration within the context of Long Point, Ontario, Canada during the time of study. This study explores the application of those rules within a contextual framework as expressed by two key-identified groups: key-involved stewardship agencies and key-identified parcel owners.

A case study background has been established by first identifying some of the key features and processes affecting lands in the Long Point area. Following a physical identification, the ecological value of the study area has been expressed as identified in a literature review. Also included in the literature review is an examination of the existing works describing important past human-wetland interactions in the Long Point area.

Prior to the creation of a “rules list”, a review of existing designations and regulations affecting the study area was conducted. Expressed rules were extrapolated from the existing designations and regulations and added to a list of applicable rules. Study participants were also asked to identify known rules that had not been included through a review of designations and regulations. In some cases, rules were identified through observations made while in the study area.

Rule characteristics were quantified to identify the effect, type, scale, and location of existing rules. Semi-structured interviews asked questions about existing rules, rule characteristics, and rule and general governance preferences affecting access and alteration in the study area.

It is the goal of this study to provide a case study example of wetland alteration and access rules existing within an Ontario context. It is desired that this work may contribute to research and policy in human-environment interactions, good governance, property rights, common-pool resource use, and resource use and alteration.

3.6 Semi-Structured Interview Analysis

Semi-structured interviews were conducted with each respondent. A portion of the interview process was specifically structured using a likert scale, examining existing rules experiences in the study area; the format of this structured portion is located in Appendix 1. Responses from consistent but less structured portions of the interview process were coded to quantify results and protect confidentiality.

3.7 Intent and Association Concerns

Although confidentiality was guaranteed very early in the interview and community engagement process, some participants expressed concerns over the intent of this study prior to participation. Many lands are held in the interests of duck hunters, and I had to insure participants that I was not opposed to hunting and that I was not trying to end or limit hunting in these areas.

Participants also expressed concerns over my association with any organizations. I had entered this study with the assumption that having no official affiliation with any interested organization would encourage participation under the increased appearance of impartiality; I was surprised when one respondent was intimidated by my lack of association. Without any formal association to an organization, one respondent expressed that he couldn't interpret my desires for study and was afraid that his responses would be used to his detriment.

4. Rules and Rights

Plainly, in this work, rules express how individuals and parties must behave. For a rule to be considered a rule, it must be understood by some group or community. Rules establish what might be expected within a community. Expectations established through the rule creation process, create rights. Rights are authority that can be claimed by a party as a result of the establishment and enforcement of rules.

This study discovered and asked key-identified property owners and key-involved stewardship agencies about sixteen study area rules with a foundation in the ability to access or alter wetland spaces. Singer (2000) very early writes, “property rights regulate relations among people by distributing powers to control valued resources” (Giesler and Danecker, Eds., 2000, p.3), and this is directly at the core of alteration and access rules in the Long Point area. Some sort of rule structure exists on every property in the study area, including those spaces that are understood as common resource areas, to control and protect valued resources.

4.1 Rule Types

An exploration of “rule types” was largely adapted from Brouwer, Heinz, and Zabel’s (Eds) *Governance in Water-related Conflicts in Agriculture: New Directions in Agri-environmental and Water Policies in the EU* (2003). This work clearly identifies three rule types that have been described and adapted for exploration in the study area: command and control, cooperative agreement, and incentive-based.

4.1.1 Command and Control

Command and control rules are most often understood as regulation and most often given the most legitimacy. These rules represent the “thou shall not” commandments and often contain the strictest enforcement strategies. As a command and control rule

under the Conservation Authorities Act (1990), no person shall alter or destroy a wetland. The enforcement strategies available for violating this rule, include a fine of not more than \$10,000, imprisonment for not more than three months, and/or the expense of removing the development and rehabilitating the space as court ordered (Sections 28(16)-28(18)).

4.1.2 Cooperative Agreement

Cooperative agreements are voluntary self-regulation between the regulated (traditionally a property owner) and the regulator (traditionally government). For Brouwer, et al. (2003), the cooperative agreement must meet four criteria: it must be established voluntarily between the regulator and the regulated; it must be based on self-regulation amongst key-actors; it must involve the regulated in the negotiation process; and it must target a specific area.

International agreements, including Canada's commitment to Ramsar, appear to have strong elements of a cooperative agreement. Some members of the study area's waterfowl hunting community may also consider their communal rules to be cooperative agreements, and they do appear to have been negotiated by the community over a long period of time.

4.1.3 Incentive-Based

Incentive-based rules provide benefit to a party for behaving in a desired way. Failure to behave in the desired manner may create ineligibility for benefit. This type of rule is currently implemented in the study area to promote the maintenance of conservation spaces, providing tax-relief for property owners who agree to maintain these spaces through Ontario's Conservation Land Tax Incentive Program (CLTIP). The CTLIP currently provides 100% property tax relief for those enrolled in the program, who preserve an ecologically valued space.

4.2 Rule Scale

An exploration of “rule scales” was largely adapted from works highlighted by Elinor Ostrom. Ostrom and others, primarily writing from a framework of “property”, insist on and define a variety of “scales” in which rules are implemented within spaces. This work, adapts, identifies and examines three rule scales: government, organizational, and communal.

4.2.1 Government

“Government rules” are those rules explicitly expressed by a form of government acting on a space. They are very clearly stated and are made available for all to see.

“Government rules” are those rules that researchers have commonly called “de jure” rules. “De jure” rules are government-authorized and may overlap with, compliment, or conflict with other rules (Ostrom, 1992).

4.2.2 Organizational

Ostrom (1992), a recognized authority on rule identification, commonly breaks rules into two categories “de jure” and “de facto”. “De jure” rules representing those government authorized rules and “de facto” rules representing those rules with some communal legitimacy that do not exist in government. For this study, it is important to define an additional rule type within this scale of rules. “Organizational rules” have been discovered in this study and refer to rules that establish behavioural expectations within property spaces. These rules exist both in government-owned and privately owned wetland parcels, they are often recorded for clarity, but do not exist as a legally enforceable rule. In most cases, violations of “organizational rules” results in refused access to previously accessible spaces (an enforceable “government rule” under the Trespass to Property Act). To protect confidentiality, these rules are not thoroughly

discussed in this work, but are importantly noted as part of the resource management structure of the study area.

4.2.3 Communal

Elinor Ostrom and others might call “communal rules” “de facto rules”, and in this work they differ only from “organizational rules” in that these rules are not explicitly recorded anywhere for others, particularly new-comers, to be made aware of. They are not government-directed or mandated and are legitimized and understood only by the community that created them. Several field researchers have discovered these rules where access to resources is competitive (Schlager and Ostrom, 1992; Cordell and McKean 1987; Berkes 1986, 1989; Davis 1984; Acheson 1975), and these rules exist in the study area as well.

Schlager and Ostrom (1992) reviewing communal rules and the experience of rules in a commercial fishery observe: “since the professional literature is so pessimistic about fishers adopting effective self-regulations, this literature is used by policy analysts to recommend sweeping reforms”, emphasizing that “these reforms, however, may “sweep away” successful human efforts to solve extremely difficult problems” (p.256). The study area experiences at least two communal rules in its common resource areas, and following key-informant interviews asked questions related to the legitimacy and viability of these rules, exploring the assertion that government policy may “sweep away” human efforts to solve access issues in the study area.

4.3 Rule Location

In this work, “rule location” refers to the highest level of entrenched expression of a current rule. In order of community size, from largest to smallest, rules were found to exist at International, Federal, Provincial, Municipal, and Community locations. Most study area rules were found to be located in the province, confirming Ontario’s strong interest in these resource spaces.

4.4 Rule Enforcement

A rule must generally be understood by some group for it to exist as a rule. A rule also gains increased validity by having some enforcement strategy. In this study, an enforcement strategy is an action intended to correct or punish undesired behaviour and is carried out against a party who does not comply with a rule. Not all rules appear to have clearly planned enforcement strategies; “government rules” tend to have the best defined enforcement strategies; “organizational rules” generally do not appear to have defined enforcement strategies; and “communal rules”, existing as only two rules in this study, appear to have the most “personal” enforcement strategy- including, threatening physical harm or publicly calling into question the rule violator’s personal integrity.

5 Expressed Values and Threats

5.1 Study Area Values and Functions

Respondents were asked to identify the values and functions of the study area.

Responses were coded into categories following the interview process. Responses were coded into nine categories: hazard mitigation/protection, ecological, hydrological (excluding hazard mitigation/protection), industrial (heavy resource extraction), recreation/tourism, education, climate change mitigation, Species At Risk specific, and waterfowl hunting specific. In the coding process, a single respondent could offer more than one response in a single category. For instance, one respondent indicated that the study area was valuable as "a staging area for migratory waterfowl" and as a "habitat for turtles"- these two values within one response were coded as two "ecological" responses.

Respondents identified the following values and functions:

Response Category	Number of Responses in Category
Ecological (including Species At Risk)	16
Recreation/Tourism (including waterfowl hunting)	16
Hazard Mitigation/Protection	7
Waterfowl Hunting Specific	5
Industrial (Heavy Resource Extraction)	5
Hydrological (excluding hazard mitigation)	4
Education	3
Climate Change Mitigation	2
Species at Risk Specific	2
Other	0

The overwhelming expressed values and functions relate closely to ecological and recreation/tourism values and are most closely followed by hazard mitigation/protection.

5.2 Interests in Access

Interests in access were expressed in two ways within the study area: to guarantee access to common-pool resources and to protect private interests associated with property ownership. Two very fundamental interests in access have been highlighted in the literature and by respondents. The first is an interest in protecting common-pool resources for public enjoyment. Until the second-half of the nineteenth century, virtually all of the study area was Crown land with few obstructions to public enjoyment. Following the second-half of the nineteenth century, the government of the day recognized that they did not have the means to protect those resources and sold most of them to private interests before expected environmental devastation. Today, interests in access seek to preserve those environmental qualities and control access to resources. Private ownership invests in access rights to protect their interest in the property, very often waterfowl interests in the study area.

5.3 Interests in Alteration

Most key-identified stewardship agencies and most key-involved property owners expressed a clear interest in alteration to the study area's wetland spaces.

Respondents in each category often expressed a noticeable "filling in" of existing wetland spaces. Often stewardship agencies appeared most interested in alterations to "maintain open-water habitat" or to "decrease invasive species populations".

Most often, private property owners are interested in alteration for more specific interests, commonly related to waterfowl hunting (all but one privately-owned parcel is operated as a recreational hunting space); as well, a few publicly owned parcels are also managed/organized hunting spaces. In every case, these specifically interested

groups and parcel owners indicated that the study area had values that extended beyond their waterfowl interests, and most respondents in this category appeared genuinely interested in adapting their specific interests in alteration to include other ecological benefits for the area.

These interests appear to be consistent with ecologic stewardship ideas expressed by Badzinski (2006; 2007-unpublished), Petrie (1998), Knapton et al (2000), van Vuuren and Roy (1992), and Brown and Dinsmore (1986) regarding wetland management. The ideas are further recommended as applicable to the study area by Petrie (1998) and Badzinski (2007-unpublished), recognizing that management initiatives or conditions benefiting a group of species or a generalist species (like marsh birds or mallards) are likely to benefit a wider range of species that are present in the same ecologies.

5.4 Threats

Key informants were asked about threats to the study area wetlands; the identification of threats might highlight weaknesses in existing rules or the lack of a desired rule. Respondents were also asked to identify any solutions or changes required to address identified threats. For each threat identified, respondents were asked to indicate if the threat is something that is "happening now", "will happen soon", or "will happen at some point". With the exception of a "climate change" response, all respondents indicated that identified threats were "happening now" and they expected these threats to exist into the future.

The three most frequently identified threats were: invasive species, sedimentation, and development pressure. Interestingly, while human behaviour can modify these threats,

only development pressure exists within the most frequently identified threats as something that is entirely within the realm of human control. Sedimentation is a natural process in the study area that can be aggravated or reduced by human activity, but cannot be eliminated and is important to the maintenance of the Long Point sand-spit. Invasive species, once established, are difficult to control in the study area and remain as a threat and propagate without human intervention, although human activity can affect the distribution and presence of invasive species in the study area.

Respondent identified threats, include:

Response Category	Number of Responses in Category
Development Pressure	5
Sedimentation	4
Invasive species	4
Over-use by recreationalists	2
Poor communication of ecological value	1
Lack of maintenance to existing development	1
Anthropogenic nutrient-loading	1
Human disturbance	1
Pollution	1
Inability of government to act (enforce existing regulations)	1
Inability of government to react to site specific events or conditions	1
Other	0

5.4.1 Expressed Threat Reduction Strategies

When respondents were asked to identify possible solutions or changes to diminish threats, they offered more than a dozen concepts and three were represented with more frequency, including: education, removal of invasive species, and the facilitation of potentially ecologically appropriate alterations.

Most frequently, respondents saw threat reduction through education. They wanted the general public to be made more aware of the value of the study area's ecological value

and flood hazard. One respondent specifically indicated that local decision-makers should be made more aware of the values and hazards of the study area.

Several respondents include as a solution, actively combating invasive species. Some respondents specifically indicated that ecologically beneficial alterations could be made by creating open-water habitat in existing areas dominated by invasive species (usually *Phragmites australis*). In addition to the removal of invasive species, one respondent specifically included the desire to have activities that could transport or introduce invasive species to the study area more heavily monitored and regulated.

Some respondents further appear to passionately seek what one respondent called "red tape reduction". Following the threats of invasive species propagation and sedimentation, respondents generally want to be able to make alterations within the study area to combat these threats and increase potential for enjoyment in their own interests. The suggestion of one respondent was to create a body that "oversees" and approves what might be ecologically beneficial, citing conflicts between government agencies with similar ecological mandates (resulting in inability or great expense associated with generating multiple permissions with many different governing agencies).

Respondent requested changes or solutions, include:

Response Category	Number of Responses in Category
Increased education (of values and functions)	7
Removal of invasive species	3
Make it easier for those interested in good ecological stewardship to obtain required government permissions	3
Better regulation and monitoring of activities that could transport or introduce invasive species to the study area	2
Good ecological stewardship promotion	2
Promotion of strong organizational rules by property owners (better private resource management)	1
Stronger regulations	1
Stronger commitment to reducing green-house gases	1
Maintain healthy ecosystems	1
Rehabilitate/create more wetland ecosystems	1
Strengthen Official Plans and Zoning by-laws to reflect ecological significance	1
Increase enforcement of existing regulations	1
Increase access to property for researchers	1
Other	0

5.4.2 Threat Reduction and the Rules

Of thirteen unique threat reduction strategies expressed, at least five seek to directly strengthen aspects of existing government regulation. Four of the uniquely expressed responses focus on education, research, or good ecological stewardship promotion as a key threat reduction strategy, and a majority of individual responses are located here. Three of the uniquely expressed strategies, while recognizing the validity of existing regulation, seek to modify the rules to facilitate alterations with good stewardship in mind- some respondents seeking to remove invasive species are included in this group- claiming prohibitive alteration rules prevent them from combating invasive plants.

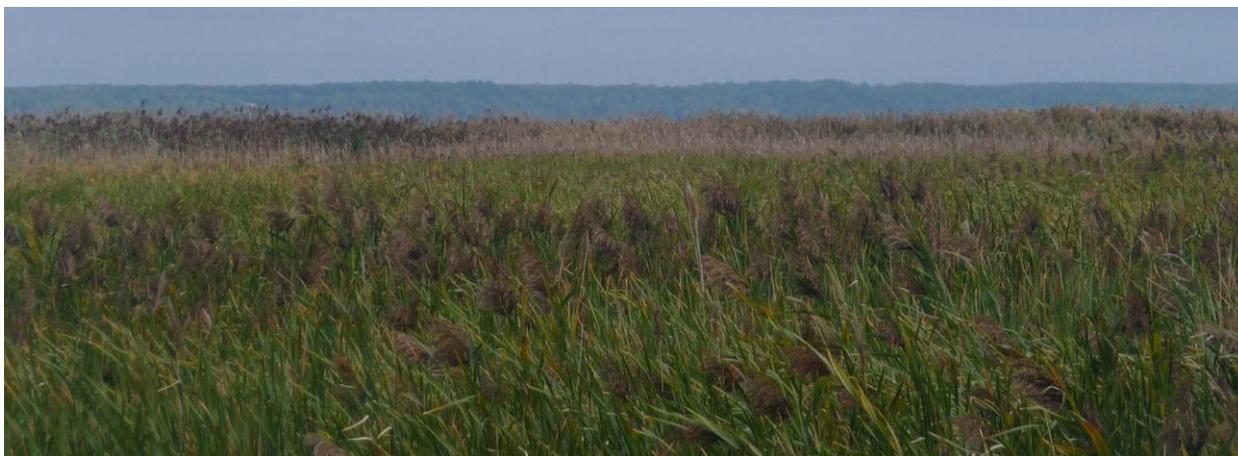


Figure 4: A Portion of the Study Area Dominated By Phragmites Australis

5.6 Contributing Community Values in Wetland Maintenance

Respondents were asked in a very structured way, using a likert scale, how important specific involved groups were to the "conservation and maintenance of the study area wetlands". A maximum score of 10 was given a value of "very important", and a minimum score of 0 was given a value of "not important at all". Respondents were asked about the value of "government agencies", "non-government stewardship agencies", "property owners", and "non-property owning wetland-users". Most respondents scored the importance of all of these groups very high.

5.6.1 Government Agency Importance

Responses	Highest Scored Response	Lowest Scored Response	Mode Response
10, 10, 10, 10, 10, 8, 8	10	8	10

5.6.2 Non-government Stewardship Agency Importance

Responses	Highest Scored Response	Lowest Scored Response	Mode Response
10, 10, 10, 10, 10, 9, 8	10	8	10

5.6.3 Property Owner Importance

Responses	Highest Scored Response	Lowest Scored Response	Mode Response
10, 10, 10, 10, 10, 10, 8,	10	8	10

5.6.4 Non-property-owning Wetland-User Importance

Responses	Highest Scored Response	Lowest Scored Response	Mode Response
10, 10, 10, 10, 10, 9, 4	10	4	10

6 A Study of Access and Alteration Rules

6.1 Rule Collection

For this study, rules were collected from as many sources as possible. Generally, rules appearing in the study area were collected from lands and wetlands legislation, existing study area designations, the mandates of involved stewardship agencies, and expressed cultural traditions. Explicit rules found in legislation and the guiding principles of designations and mandates are comparatively easy to locate. Cultural traditions, and rules belonging to specific communities, are more difficult to obtain and there is often a level of mistrust between these communities and outsiders. In this study, all rules that may appear to be “cultural traditions” were located as specific to the waterfowl hunting community in common resource areas.

Following the collection of rules, respondents were asked six questions about each rule, and were always given the option of not responding. A copy of the survey format portion of the interview can be found in Appendix 1.

6.2 Key-Informant Responses to Structured Rule Questions

Key-involved stewardship agencies and key-identified property owners were asked several questions about each identified rule. Specifically, key-informants were asked about the purpose, effect, and perceived comprehension of each rule. Some rules appear to be similar, but potential differences in responses were anticipated, so they were included as separate rules; rules that appeared very similar (where different responses were not anticipated) were included as one single “simplified rule expression”.

In instances where a property was controlled by more than a single individual or where stewardship agencies were invited, these groups were allowed to form a single

response involving any number of respondents as desired: Often a single individual was chosen by the group to offer responses, but occasionally groups chose to work together to provide the most comprehensive response possible. The responses may reflect these choices: a single individual may not contain the entire knowledge of the group, but the individual offers his or her response on behalf of the group.

6.3 Rule Analysis

Rules are recorded here in the order that they were asked on the structured portion of the interview.

6.3.1 “No development in wetlands.”

Simplified Expression	Primary Expression	Details	
No development in wetlands.	No "development" within wetlands. (OR 178/06; Section 2(1)(d))	Establishment Date	May 4, 2006
		Establishing Body	Conservation Authorities Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
	Enforcement Strategies	Fines; Incarceration; Rehabilitation of altered space.	
	Development and site alteration shall not be permitted in significant coastal wetlands. (PPS; Section 2.1.3 (c))- "Unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. Wetlands are to be conserved and used wisely."	Establishment Date	2005
		Establishment Body	Planning Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
Rule Location		Provincial	
Enforcement Strategies	Fines; Incarceration; Removal of development.		

The “no development in wetlands” rule commonly appears in both the provincially-located Policy Statement (PPS) and Conservation Authorities Act. In support of the PPS, Norfolk County zoning by-laws also reflect this rule. Development in wetlands is very occasionally permitted in Ontario, but the province has generally adopted a policy of “no wetland loss” and may use wetland-banking/replacement in rare instances where the benefit of development in wetlands is judged to be greater than the value of the wetland itself.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	8, 8, 7, 7, 7, 7, Not sure (2).	8	7	7
How well is this rule understood by the applicable community?	8, 8, 7, 6, 5, 5, 5, Not sure (2).	8	5	5
How effective is the implementation/enforcement of this rule?	10, 8, 7, 6, 5, 3, Not sure (2).	10	3	Not sure.
What is the long-term viability of this rule?	10, 10, 9, 8, 8, 5, Not sure (2).	10	8	10, 8, Not sure.

6.3.2 “No unpermitted (by government) development within 120m of significant wetlands.”

Simplified Expression	Primary Expression	Details	
No unpermitted development within 120m of wetlands.	No unpermitted development within 120m of Provincially Significant Wetland (OR 178/06; Section 2(1)(e))	Establishment Date	May 4, 2006
		Establishing Body	Conservation Authorities Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Fines; Incarceration; Rehabilitation of altered space.

The “no unpermitted development within 120m of significant wetlands” rule appears in the provincially-located Conservation Authorities Act and is specifically applied to the study area under Ontario Regulation 178/06. Spaces adjacent to wetlands are specifically protected to insure the maintenance of the function of the wetland. Development in these areas may be permitted if a prospective developer can demonstrate that his proposed development will not have a negative impact on the wetland.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	7, 7, 5, 3, 2, Not sure (2).	7	2	7, Not sure.
How well is this rule understood by the applicable community?	10, 5, 4, 3, 2, Not sure (2).	10	2	Not sure
How effective is the implementation/enforcement of this rule?	8, 5, 4, 4, 3, Not sure (2).	8	3	4, Not sure.
What is the long-term viability of this rule?	10, 8, 8, 5, 4, Not sure (2).	10	4	8, Not sure.

6.3.3 “Significant wetlands must be protected.”

Simplified Expression	Primary Expression	Details	
Significant wetlands must be protected.	Wetlands are to be conserved and used wisely.	Establishment Date	1981 (Canada)
		Establishing Body	The Convention on Wetlands of International Importance/ Ramsar Convention
		Effect	Alteration
		Rule Type	Cooperative Agreement
		Rule Scale	Government
		Rule Location	International
		Enforcement Strategies	Not clear/Nothing
	Provincially Significant Wetlands need to be protected.	Establishment Date	Re-newed/re-evaluated annually.
		Establishment Body	Conservation Land Tax Incentive program
		Effect	Alteration
		Rule Type	Incentive-based
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Removal from program; Ineligibility for program.
	Natural features and areas shall be protected for the long-term. (PPS; Section 2.1.1)	Establishment Date	2005
		Establishing Body	Planning Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	
Landscapes, ecosystems, species and genetic variation should be conserved.	Establishment Date	April 1986	
	Establishment Body	UNESCO Biosphere Criteria	
	Effect	Alteration	
	Rule Type	Cooperative Agreement	
	Rule Scale	Government	
	Rule Location	International	
	Enforcement Strategies	Not clear/Nothing	

The “significant wetlands must be protected” rule appears in several mandates that are applied specifically to the study area. Within the study area, this rule applies as part of the mandate of Ramsar (The Convention on Wetlands of International Importance), which Canada signed in 1981. This rule is implied in Ramsar's "wise use concept", requiring the conservation of identified significant wetlands. This rule also applies as part of the study area's designation as a United Nations Educational, Scientific and Cultural Organization's (UNESCO) "World Biosphere". The UNESCO designation carries with it the recommendation that "landscapes, ecosystems, species and genetic variation should be conserved". Finally, Section 2.1.1 of the Provincial Policy Statement, through Ontario's Planning Act, insists that "natural features and areas" be "protected for the long-term". All of these works carry with them the expressed rule that significant wetlands must be protected.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	9, 8, 8, 6, Not sure (2), Not a rule.	9	6	8, Not sure.
How well is this rule understood by the applicable community?	8, 8, 6, 3, Not sure (2), Not a rule.	8	3	8, Not sure.
How effective is the implementation/enforcement of this rule?	8, 8, 6, 2, Not sure (2), Not a rule.	8	2	8, Not sure.
What is the long-term viability of this rule?	10, 9, 8, 8, Not sure (2), Not a rule.	10	8	8, Not sure.

6.3.4 “First Nations have the right to hunt Canadian-owned lands within the Long Point area”

Simplified Expression	Primary Expression	Details	
Some First Nations members have the right to hunt on common-pool resource lands in the study area.	As part of their traditional lands, the Six Nations of the Grand River and the Mississaugas of the New Credit can access lands for traditional purposes.	Establishment Date	Not Clear
		Establishing Body	Canada
		Effect	Access
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Federal
		Enforcement Strategies	Not clear.
	Six Nations members have the right to hunt on common-pool resource lands in the study area.	Establishment Date	July 19, 1701
		Establishment Body	Nanfan Treaty
		Effect	Access
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Federal
		Enforcement Strategies	Not clear

The “First Nations have the right to hunt Canadian-owned lands within the Long Point area” rule appears in the Nanfan Treaty for the Six Nations and is included in the traditional lands of the Six Nations of the Grand River and the Mississaugas of the New Credit. The Nanfan Treaty is an eighteenth century agreement establishing a large area of "beaver hunting grounds" to the Five Nations of the Iroquois Confederacy from the British Crown. The Nanfan Treaty includes the entirety of the study area, and within these lands the Confederacy is guaranteed "free hunting for [the Confederacy] and the heires and descendants from us the Five nations for ever and that free of all disturbances expecting to be protected therein by the Crown of England". The current legitimacy of this treaty is not clear, but it does appear to have been contested by a number of groups during its creation. Canada currently exists as part of the monarchy of the British Crown and logically should have assumed the responsibilities of the treaty between the British and the Iroquois Confederacy.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	9, 8, 8, 8, 6, Not sure (2).	9	6	8
How well is this rule understood by the applicable community?	8, 8, 8, 6, 3, Not sure (2).	8	3	8
How effective is the implementation/enforcement of this rule?	10, 8, 8, 6, 2, Not sure (2).	10	2	8, Not sure.
What is the long-term viability of this rule?	10, 6, 4, 1, Not sure (3).	10	1	Not sure.

6.3.5 “Significant wetland habitats must be protected.”

Simplified Expression	Primary Expression	Details	
Significant wetland habitats must be protected.	Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements (PPS, Section 2.1.5)	Establishment Date	2005
		Establishing Body	Planning Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Fines; Incarceration; Removal of development.
	"No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat." (Fisheries Act, Section 35. (1))	Establishment Date	1985
		Establishing Body	Fisheries Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Federal
		Enforcement Strategies	Fines; Incarceration; Rehabilitation of altered space.
	No person shall destroy or damage a residence of a species at risk or endangered species. (SARA; Section 33, Section 36(c), Section 58)	Establishment Date	December 2002
		Establishing Body	Species At Risk Act
		Effect	Alteration
		Rule Type	Command and Control
Rule Scale		Government	
Rule Location		Federal	
Enforcement Strategies		Fines; Incarceration; Rehabilitation of altered space.	

The “significant wetland habitats must be protected” rule appears in the Provincial Policy Statement, as implemented through the Ontario Planning Act (2.1.4(d); 2.1.5) and the Federal Fisheries Act (35(1)) and Species at Risk Act (33; 36(c); 58). These rules do not specifically protect wetland habitats or the study area habitats, but all of the study area wetlands are considered to be included within the expression of these rules; representing fish habitat and species at risk habitat. Under the Species at Risk Act and

Fisheries Act, offences to these rules are Federal and generally considered more serious.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	8, 7, 7, 6, Not sure(3), Not a rule.	8	6	Not sure
How well is this rule understood by the applicable community?	8, 6, 6, 3, Not sure (3), Not a rule.	8	3	Not sure
How effective is the implementation/enforcement of this rule?	8, 6, 4, Not sure (3), Not a rule.	8	4	Not sure
What is the long-term viability of this rule?	10, 9, 8, Not sure (3), Not a rule.	10	8	Not sure

6.3.6 “If a wetland meets identified criteria, it is provincially significant.”

Simplified Expression	Primary Expression	Details	
		Establishment Date	March 1993
If a wetland meets identified criteria, it is “provincially significant”.	If a wetland meets identified criteria, it is “provincially significant”.	Establishing Body	Ontario Wetland Evaluation System: Southern Manual
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Nothing

The "if a wetland meets identified criteria, it is provincially significant" exists within the Ontario Wetland Evaluation System (OWES) and is used to "provide a consistent method of assessing wetland functions and their values to society [that] enables the

province to rank the relative value of wetlands for land use planning purposes" (www.mnr.gov.on.ca, 2012). All of the considered study area wetlands are currently designated provincially significant by the Ontario Ministry of Natural Resources (MNR), Aylmer district office. Generally, provincially significant wetlands are provided more protection from alteration as a natural heritage feature than locally significant, unevaluated, or unidentified wetlands.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	10,9, 8, 8, 7, Not sure (2), Not a rule.	10	8	8, Not sure.
How well is this rule understood by the applicable community?	7, 6, 6, 6, 2, Not sure (2), Not a rule.	7	2	6
How effective is the implementation/enforcement of this rule?	8, 8, 8, 7, Not sure (2), Not a rule.	8	7	8
What is the long-term viability of this rule?	10, 8, 8, 7, Not sure (2), Not a rule.	10	7	8, Not sure.

6.3.7 “Waterfowl hunters must be a specified distance apart (400m, 100m, etc.)”

Simplified Expression	Primary Expression	Details	
Waterfowl hunters must be a specified distance apart (400m, 100m, etc.).	Waterfowl hunters must be a specified distance apart (400m, 100m, etc.).	Establishment Date	Not clear
		Establishing Body	Local Waterfowl Hunting Community
		Effect	Access
		Rule Type	Cooperative Agreement
		Rule Scale	Communal
		Rule Location	Local
		Enforcement Strategies	Violence; Threats of violence; Criticism of personal character.

The "waterfowl hunters must be a specified distance apart" rule exists only to the waterfowl hunting community of the study area and there does not appear to be a consensus on distance. When asked about this rule by knowledgeable respondents and study area users, the rule appears to exist as both a safety measure (safe distance from shot) and as a way to control access to the resource of ducks (to give hunters fair, unobstructed opportunity to hunt ducks). Respondents indicated that this rule is enforced with criticism of personal integrity ("it's a gentleman's rule, and you aren't much of a man or a hunter if you don't follow it"). I also witnessed this rule being enforced with threats of violence (and near violence) while in the study area in 2010; a hunter who refused to acknowledge a 400m distance was threatened with assault until he complied with the rule.

This rule has existed as 400m since at least the nineteenth century and is documented in Harry Barrett's "Legends and Lore of Long Point" (1977) as applicable in Long Point Company lands at this time. While in the study area, I was amazed to hear this rule repeated as applicable to common-pool resource lands within the study area not less than twice in two hunting seasons (at least once each hunting season).

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	6, Not sure (4), Not a rule (3)	6	6	Not sure
How well is this rule understood by the applicable community?	8 Not sure (4), Not a rule (3)	8	8	Not sure
How effective is the implementation/enforcement of this rule?	8, Not sure (4), Not a rule (3)	8	8	Not sure
What is the long-term viability of this rule?	6, Not sure (4), Not a rule (3)	6	6	Not sure

6.3.8 “Entry is prohibited without any notice on lands that are enclosed in a manner that indicates the occupier's intention to keep persons off the premises or to keep animals on the premises.”

Simplified Expression	Primary Expression	Details	
		Establishment Date	1990
Entry is prohibited without any notice on lands that are "enclosed in a manner that indicates the occupier's intention to keep persons off the premises or to keep animals on the premises".	Entry is prohibited without any notice on lands that are "enclosed in a manner that indicates the occupier's intention to keep persons off the premises or to keep animals on the premises". (TPA, Section 3(1)(b))	Establishing Body	Trespass to Property Act
		Effect	Access
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Fines; Incarceration.

The rule "entry is prohibited without any notice on lands that are enclosed in a manner that indicates the occupier's intention to keep persons off the premises or to keep animals on the premises" appears in Ontario's Trespass to Property Act (TPA).

Generally, this act indicates how people may control access to property. Many property owners use signs permitted under the TPA to restrict access or activities on property,

particularly where boundaries between common-pool resources and private property are not exceptionally clear.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	10, Not sure (6).	10	10	Not sure.
How well is this rule understood by the applicable community?	10, Not sure (6).	10	10	Not sure.
How effective is the implementation/enforcement of this rule?	1, Not sure (6).	1	1	Not sure.
What is the long-term viability of this rule?	10, Not sure (6).	10	10	Not sure.

6.3.9 “The beds of navigable waters are assumed to belong to the Crown and are not transferable unless expressly granted.”

Simplified Expression	Primary Expression	Details	
<p>The beds of navigable waters are assumed to belong to the Crown and are not transferable unless expressly granted.</p>	<p>The beds of navigable waters are assumed to belong to the Crown and are not transferable unless expressly granted.</p>	Establishment Date	2002
		Establishing Body	Beds of Navigable Waters Act
		Effect	Access
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Not Clear
	<p>No person shall allow sawdust, edgings, slabs, bark, stone, gravel, earth, cinders, ashes, other material, or rubbish into a navigable water or any water that flows into a navigable water where there are not at least 25 fathoms(45.72m, 150ft.) of water (unless permission is provided by the minister).</p>	Establishment Date	1985
		Establishment Body	Navigable Waters Protection Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Federal
		Enforcement Strategies	Fines; Incarceration; Rehabilitation of space.
	<p>No person shall deposit any material without permission on public lands, including water or ice. (Section 27(1))</p>	Establishment Date	1990 (Last Amendment 2010)
		Establishing Body	Public Lands Act
		Effect	Alteration
		Rule Type	Command and Control
Rule Scale		Government	
Rule Location		Provincial	
Enforcement Strategies		Fines; Incarceration; Rehabilitation of altered space.	

The rule "the beds of navigable waters are assumed to belong to the Crown and are not transferable unless expressly granted" is expressed through Ontario's Beds of Navigable Waters Act. The Act does not explicitly define "navigable waters" for use in

this act, but makes it clear that the beds of waters deemed to be navigable are Crown land. It is assumed that this definition extends to the lake-bed in the study area.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	10, 10, 9, 6, Not sure (3).	10	6	Not sure
How well is this rule understood by the applicable community?	9, 8, 8, 4, Not sure (3).	9	4	Not sure
How effective is the implementation/enforcement of this rule?	9, 8, 8, 6, 4, Not sure (3).	9	4	Not sure
What is the long-term viability of this rule?	10, 10, 10, 7, Not sure (3).	10	7	10, Not sure.

6.3.10 “Navigable water includes any canal or any other body of water created or altered as a result of the construction of any work”

Simplified Expression	Primary Expression	Details	
		Establishment Date	1985
"Navigable water" includes any canal or any other body of water created or altered as a result of the construction of any work.	"Navigable water" includes any canal or any other body of water created or altered as a result of the construction of any work.	Establishing Body	Navigable Waters Protection Act
		Effect	Access
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Federal
		Enforcement Strategies	Not clear

The rule "navigable water includes any canal or any other body of water created or altered as a result of the construction of any work" appears in the federal Navigable Waters Protection Act. This act further defines what may be considered navigable waters, specifically including created navigable spaces. This rule is of particular interest

in the study area because of the extensive existence, maintenance, and interest in man-made channels and open-water spaces.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	10, 3, Not a rule(2), Not sure (3).	10	3	Not sure.
How well is this rule understood by the applicable community?	6, 1, Not a rule (2), Not sure (3).	6	1	Not sure.
How effective is the implementation/enforcement of this rule?	6, 1, Not a rule (2), Not sure (3).	6	1	Not sure.
What is the long-term viability of this rule?	10, 8, Not a rule (2), Not sure (3).	10	8	Not sure.

6.3.11 “Development shall generally be directed away from hazards (including flooding and erosion)”

Simplified Expression	Primary Expression	Details	
		Establishment Date	2005
Development shall generally be directed away from hazards (including flooding and erosion).	Development shall generally be directed away from hazards (including flooding and erosion) (PPS, Section 3.1.1)	Establishing Body	Planning Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Not clear

The rule "development shall generally be directed away from hazards" appears using the word "generally" in the PPS. The word general infers an aspect that appears more related to guidance than regulation as is more common in policy, despite required consistency through Ontario's Planning Act. This rule prevents alterations

(development) in areas that are hazardous or may create hazards for implied public safety reasons. The entirety of the study area wetlands are subject to flooding during a 100-year storm event.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	10, 9, 7, 6, 3, Not sure (2).	10	3	Not sure
How well is this rule understood by the applicable community?	10, 8, 7, 5, 5, Not sure (2).	10	5	5, Not sure.
How effective is the implementation/enforcement of this rule?	10, 7, 7, 5, 3, Not sure (2).	10	3	7, Not sure.
What is the long-term viability of this rule?	10, 10, 10, 7, 5, Not sure (2).	10	7	10

6.3.12 “Development and site alteration shall not be permitted in areas that would be rendered inaccessible to people and vehicles during times of hazards- unless the hazard is minor and can be mitigated (ie. flooding)”

Simplified Expression	Primary Expression	Details	
Development and site alteration shall not be permitted in areas that would be rendered inaccessible to people and vehicles during times of hazards- unless the hazard is minor and can be mitigated (ie. flooding).	Development and site alteration shall not be permitted in areas that would be rendered inaccessible to people and vehicles during times of hazards- unless the hazard is minor and can be mitigated (ie. flooding) (PPS, Section 3.1.2).	Establishment Date	2005
		Establishing Body	Planning Act
		Effect	Alteration
		Rule Type	Command and Control
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Fines; Incarceration; Removal of Development.

The rule "development and site alteration shall not be permitted in areas that would be rendered inaccessible to people and vehicles during times of hazards- unless the

hazard is minor and can be mitigated" appears in the same section of the PPS as the rule stated in 6.3.11 of this work but employs much stronger wording indicating that alterations (development) may not occur in hazardous areas, including flooding. The entirety of the study area lands represent lands below the anticipated flood elevation during a 100-year storm event.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	10, 8, 3, 3, Not sure (4).	10	3	Not sure
How well is this rule understood by the applicable community?	10, 8, 4, 3, Not sure (3).	10	3	Not sure
How effective is the implementation/enforcement of this rule?	10, 8, 5, 3, Not sure (3).	10	3	Not sure
What is the long-term viability of this rule?	10, 10, 8, 7, Not sure (3).	10	7	Not sure

6.3.13 “Economic and human development which is socio-culturally and ecologically sustainable should be fostered.”

Simplified Expression	Primary Expression	Details	
		Establishment Date	April 1986
Economic and human development which is socio-culturally and ecologically sustainable should be fostered.	Economic and human development which is socio-culturally and ecologically sustainable should be fostered.	Establishing Body	UNESCO Biosphere Criteria
		Effect	Alteration
		Rule Type	Cooperative Agreement
		Rule Scale	Government
		Rule Location	International
		Enforcement Strategies	Not clear.

The rule "economic and human development which is socio-culturally and ecologically sustainable should be fostered" appears within the mandate of those areas designated

as biosphere by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The entire study area is contained within this designation. The designation recognizes the ecologic importance and significance of the study area in combination with human use and heritage. The rule seeks to promote those alterations which are socio-culturally and ecologically sustainable and does not appear in regulation.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	5, 2, Not sure (4), Not a rule.	2	2	Not sure
How well is this rule understood by the applicable community?	5, 2, 2, Not sure (3), Not a rule.	2	2	2, Not sure
How effective is the implementation/enforcement of this rule?	3, 3, Not sure (4), Not a rule.	3	3	Not sure.
What is the long-term viability of this rule?	10, 3, Not sure (4), Not a rule	10	10	Not sure.

6.3.14 “For the opening day of duck season a person may "stake" a spot in reservation (all hunters must respect this reservation).”

Simplified Expression	Primary Expression	Details	
For the opening day of duck season a person may "stake" a spot in reservation (all hunters must respect this reservation).	For the opening day of duck season a person may "stake" a spot in reservation (all hunters must respect this reservation).	Establishment Date	Not clear
		Establishing Body	Waterfowl Hunting Community
		Effect	Access
		Rule Type	Cooperative Agreement
		Rule Scale	Communal
		Rule Location	Local
		Enforcement Strategies	Violence; Threats of violence; Criticism of personal character.

The rule "for the opening day of duck season a person may "stake" a spot in reservation" is the second rule which exists completely within the study area's common-pool resource lands. This rule was observed as expressed by waterfowl hunters in the study area. The rule involves a hunter or hunters driving a stake into the lake bottom with their names on a sign above the water. The stake is intended to hold that location in reservation for those hunters on the opening day of duck season.

Like rule numbered 6.3.7, respondents indicated that this rule is enforced with criticism of personal integrity, threats of violence, and/or violence. Within the study area common-pool resource area waterfowl hunters this rule seems to be highly-contested; some hunters insist that "new hunters" have no respect and are failing to comply with this rule, often removing stakes placed by hunters who adhere to this rule.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	3, Not sure (4), Not a rule (2).	3	3	Not sure
How well is this rule understood by the applicable community?	1, Not sure (4), Not a rule (2).	1	1	Not sure
How effective is the implementation/enforcement of this rule?	2, Not sure (4), Not a rule (2).	2	2	Not sure
What is the long-term viability of this rule?	2, Not sure (4), Not a rule (2).	2	2	Not sure,

6.3.15 “Maintaining provincially significant conservation lands creates eligibility for tax relief.”

Simplified Expression	Primary Expression	Details	
Maintaining provincially significant conservation lands creates eligibility for tax relief.	Maintaining provincially significant conservation lands creates eligibility for tax relief.	Establishment Date	Re-newed annually.
		Establishing Body	Conservation Land Tax Incentive Program
		Effect	Alteration
		Rule Type	Incentive-based
		Rule Scale	Government
		Rule Location	Provincial
		Enforcement Strategies	Removal from CLTIP program; Program ineligibility.

The rule "maintaining provincially significant conservation lands creates eligibility for tax relief" appears as an incentive-based rule through Ontario's Conservation Land Tax Incentive Program (CLTIP). The rule does not specifically identify wetlands, but is meant to apply to all provincially significant conservation lands, and provincially significant wetlands (that the study areas exist as) are assumed to meet this criteria. The purpose of the rule is to encourage the conservation of ecologically significant

areas by removing the requirement to pay property tax on such lands. Enrolment in the CLTIP is voluntary, however, failing to maintain these lands under the Program will create an ineligibility for program participation.

In their experience, respondents evaluated the community understanding of the rule using a likert-type system:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	10, 7, 5, 3, Not sure (2), Not a rule	10	3	Not sure
How well is this rule understood by the applicable community?	8, 7, 5, 3, Not sure (2), Not a rule.	8	2	Not sure
How effective is the implementation/enforcement of this rule?	10, 7, 3, 2, Not sure (2), Not a rule.	10	2	Not sure
What is the long-term viability of this rule?	10, 7, 7, 6, Not sure (2), Not a rule.	10	6	7, Not sure.

6.3.16 “Hunting is not permitted beyond 200m from the shoreline of the bay.”

Simplified Expression	Primary Expression	Details	
Hunting is not permitted beyond 200m from the shoreline of the bay.	Hunting is not permitted beyond 200m from the shoreline of the bay. (Knapton et al., 2000)	Establishment Date	Not clear
		Establishing Body	Not clear
		Effect	Access
		Rule Type	Command and Control
		Rule Scale	Assumed Government
		Rule Location	Not known
		Enforcement Strategies	Not known

The rule "hunting is not permitted beyond 200m from the shoreline of the bay" is understood as an explicit government rule, but could not be located in regulation. This rule is commonly understood by knowledgeable respondents to be 300m, but was

documented by Knapton, et al. (2000) as 200m. Knowledgeable respondents were asked to respond as if the distance was consistent with their understanding of the rule (200m or 300m). This rule appears to exist as a means to protect resting diving ducks from access and disturbance by hunters during the fall migration.

In their experience, respondents evaluated the community understanding of the rule using a likert-type scaling:

Questions:	Responses (10-1): *see appendix for gradation	Highest-Scored Response:	Lowest-Scored Response:	Mode Response:
How effective is this rule at achieving its purpose?	9, 8, 7, Not sure(4).	9	7	Not sure.
How well is this rule understood by the applicable community?	9, 8, 8, Not sure (4).	9	8	Not sure.
How effective is the implementation/enforcement of this rule?	10, 8, 4, Not sure (4).	10	4	Not sure.
What is the long-term viability of this rule?	10, 8, 8, Not sure (4).	10	8	Not sure.

6.4 Conclusions on Rule Questions and Proposed Future Directions

In almost every case, “long-term viability” and “effect” were generally scored higher than “community understanding” and “implementation/enforcement”. Respondents seem more likely to believe that a rule effectively achieves its purpose and is expected to exist for a longer period of time than they are to invest in the community’s understanding of the rule or the implementation/enforcement of the rule.

Few respondents were knowledgeable of the study area’s “communal rules”, and most of the knowledgeable respondents refused to accept the rule as a rule. This may reflect Schlager and Ostrom’s (1992) ideas of pessimism surrounding “de facto” rules.

Of respondents who chose to respond to the structured portion of this interview, “not sure” was represented very frequently; this reinforces the proposed need for more education of the existing rules.

6.5 Closing the Gap: The Long Point Company Effect

A good portion of the foundation of this research endeavour was initially located in claims made by Harry B. Barrett in his 1977 book *Lore and Legends of Long Point*. Barrett makes several claims expounding the benefit of private resource management in the Long Point area; importantly claiming that government efforts had not yet caught up to the stewardship efforts of private enterprise.

Are the claims made by Barrett several decades ago, still accurate today? The rules that apply to wetland governance in the Long Point area today appear to address Barrett’s concerns in ways that they didn’t when Barrett published his book. It was, however, important to explore the experience of these rules and the perceived effectiveness of new governance strategies.

Today, many of the Long Point area's significant wetland spaces are managed by both explicit government-enacted rules and property-specific rules. Government-enacted rules generally prohibit development in these spaces, and current property ownership initiatives also express an interest in wetland maintenance. Approximately two-thirds of the significant wetland parcels are owned by a public or public-oriented agency: including local, provincial, and federal agencies. Parcels held in private interest exist entirely as waterfowl hunting 'clubs', with only one small exception.

Despite increased government intervention, many knowledgeable respondents found that privately managed marshes and those property managers with an increased interest in wetland alteration have "healthier marshes". Responding directly to Barrett's initial 1977 claims that government intervention had not yet caught up to the stewardship efforts of private ownership, respondents indicated:

- "Yes, government has caught up and specifically used the Company as a template for their initiatives."
- "No, regulations are not strong enough. Privately-managed wetlands appear healthier than natural/unaltered wetlands in the study area."
- "Government intervention is catching up, but has not closed the gap between the stewardship efforts of the Company and government regulation."
- "Government and the Long Point Company are not comparable. Both government and the Company remain very important to the conservation of the study area wetlands for the foreseeable future."
- "-The Long Point Company protects wetlands for hunting... this protection provides benefit [but] some of the Long Point Company's stewardship initiatives may be causing more harm than good."
- "The Long Point Company is not a stewardship agency and acts only in private interest."

The variety of responses generated by the question "in 1977 Harry Barrett commented in *Lore and Legends of Long Point* that government action had not yet caught up to the stewardship efforts of the Long Point Company, has this changed?" reflects current

willingness to invest in both private ownership and public governance. Some respondents are more willing to invest in private wetland management and some respondents are more willing to invest in public wetland management. The diversity of responses also appear to continue the echoes of Barrett (1977) and Hazen (2000), that illustrate the Long Point Company as ecological hero by some, and playground of the rich by others.

7 Summary

Within the study area most interest in access appears to arise from the desire to clearly identify and protect private and public interests related to property. Most rules regarding access seek to control access to resources, including wildlife.

Within the study area most interest in alteration appears to arise from the desire to return the space to its remembered ideal state (ie. “there used to be a lot more open water in this marsh in the ‘80s”) and/or to improve wildlife habitat. Most rules regarding access seek to prohibit harmful alterations to wetland spaces, including activities that would harm hydrologic and ecologic functions.

Rules regarding access seem to reflect the balance between public and private interest, and rules regarding alteration seem to reflect the public interest in natural resources. However, the general experience seems to be that while interests in alteration remain consistent with the intent of the rules, it is difficult, and increasingly more difficult, for landowners and some stewardship agencies to gain the required permissions for alterations that may be perceived as ecologically and hydrologically appropriate or beneficial.

When asked to identify strategies to reduce threats to the conservation of the study area’s wetlands, respondents most frequently suggested education, the strengthening of existing regulations, and the modification of existing rules to facilitate ecologically appropriate disturbances. All respondents rated the importance of all study area users very high with regard to the conservation and maintenance of the study area wetland spaces.

Even with exceptionally interested key-informant groups, several invited respondents chose not to participate or to provide only partial responses. Among responses to structured questions "not sure" was represented more than once in every question. Responses to structured questions appear to indicate that interests in access and

alteration rules are more narrowly focussed than many respondents claim. The entire matrix of study area rules does not appear to be well-understood by many respondents.

In almost every case, “long-term viability” and “effect” were generally scored higher than “community understanding” and “implementation/enforcement”. Few respondents were knowledgeable of the study area’s “communal rules”, and most of the knowledgeable respondents refused to accept the rule as a rule, supporting Schlager and Ostrom's (1992) recorded pessimism about this rule type.

Prior to effective government regulation (restricting harmful alteration), private property interests (restricting unwanted access) conserved the study area wetlands because it was in their interest to do so. Rule creators and enforcers should recognize the historic spirit of conservation and work closely with property owners and interested parties who remain interested and invested in the continued maintenance of the study area’s wetlands. The study area is very fortunate to have a strong foundation of property owners and stewardship agencies with a direct interest in wetland conservation.

7.1 Revisiting Research Goals

When this study was initiated four research questions were formulated. Those questions sought to evaluate the matrix of wetland access and alteration rules within a case study area, involving a context of both private and public wetland management initiatives. The questions formulated were:

1. What are the rules effecting access and alteration within the Long Point area’s coastal wetlands?
2. How do those groups with the greatest interest in these rules perceive them?
3. Where are there perceived gaps in the understanding of these rules?
4. How do explicit government rules today compare to the stewardship goals of locally and academically applauded landowners?

It is suitable to evaluate the goal of this research by examining answers to these questions that may have been revealed through the research process.

Sixteen simplified rules were discovered to have an effect on the Long Point area's wetlands. At times, these simplified expressions are nested within a greater number of primary expressions, found in regulations, organizational mandates, and cultural traditions. The existing rules vary in scale and application, but are all relevant and generally supported by the study area respondents.

Two specifically interested groups, key-identified property owners and key-involved stewardship agencies were asked to respond to questions about these rules. While generally supportive of a majority of the rules, the perceived longevity of a rule was usually scored higher than the communal understanding of the rule by all respondents.

There remains distinct disagreement among respondents as to the benefit and effect of government and private stewardship initiatives within the study area. Some respondents clearly identified more value in public wetland management, and others clearly identified more value in private wetland management.

7.2 Implications

This study sought to explore the framework of access and alteration rules within a significant Great Lakes coastal wetland area and specifically how these rules interacted with the goals of key-stakeholders in a study area. The selected study area has a broad range of academic publications surrounding the ecological value of the space, and previous recommendations have included activities that currently appear to exist as contrary to rules found in the study area (Badzinski, 2006; Badzinski, 2007-unpublished; Petrie, 1998; Knapton et al, 2000; van Vuuren and Roy 1992; Brown and Dinsmore, 1986). The current "owners" of all of the wetland spaces have an interest in conserving the study area wetland spaces; most of the privately-owned significant study area wetlands are held in waterfowl hunting interests (which are dependent on the wetlands as waterfowl habitat). Natural processes (largely sediment deposition) and invasive species degrade many currently expressed ecological and property values associated

with the study area. Rule creators must recognize the value of existing property owners and managers who have an active interest in wetland conservation and use this interest to promote and create good ecological stewards by striving to find ways to allow them to be good stewards within their own interests.

7.3 Limitations

7.3.1 Ownership with an Interest in Wetland Maintenance

The exceptional qualities of the study area form one of the most important limitations to this study's potential application to other wetland spaces. With one exception, the study area is fortunate to host landowners who have a vested interest in wetland maintenance, including government stewardship agencies and private hunting organizations. The study area does not experience many of the development pressures associated with areas where ownership has little or no interest in wetland maintenance. At its worst, interests in alteration are directed to maintaining or creating a remembered ideal state of wetland productivity.

7.3.2 Study Area User-groups

This study explored responses from only two groups: locally active stewardship agencies and significant landowners. These key-identified groups were thoroughly questioned about the existing rules; however, they do not exist as a majority of the study area's coastal wetland users. These groups were interviewed as significant stake-holders in the study area's coastal wetland access and alteration rules, but their assessments (revealed through the interview process may not be consistent with the entire study area user-base.

As most uses in the study area wetlands are seasonal, it was not feasible to estimate and significantly sample populations of study area wetland-users; however, important

populations of human wetland users have been identified within the study area. Identifiable wetland user communities include: recreational boaters and pleasure-craft enthusiasts, commercial fishermen, anglers, hunters, amateur and professional ornithologists, swimmers, and other outdoor enthusiasts.

7.3.3 No exploration of Resource Withdrawal Rules

Other rules not explored here that may have some impact on study area wetland access and alteration include some of those rules governing resource consumption, particularly those rules regulating the harvest of study area fish and waterfowl. Generally, “seasons” (specified dates when waterfowl or fish may be harvested) function to regulate these types of activities.

7.3.4 Interest in Participation

All known potential respondents were identified and invited to participate in this survey. Of thirteen identified potential respondents, eight respondents chose to provide a response. Many respondents did not respond to every question. The invited respondents whom, in their own interest, chose not to respond to any number of questions are believed to have been able to provide valuable information that would have contributed to the value of this study. It was the invitee's prerogative to respond in any manner that was acceptable to them within the study framework.

7.3.5 Existing Rules Appear to Anticipate More Static Conditions

The study area is a very dynamic, ever-changing landscape. Existing rules appear to assume more static conditions, specifically when it comes to alteration. Using Figure 2, the assumption of more static conditions within the study area becomes more evident. Figure 2 explores how a continuum of "use ability" might impact an environment in areas with "on-going natural processes". "Use ability" refers to the freedom to use a space within a matrix of rules.

Within an environment of limited resources, existing rules may create an environment where others may feel that their ability to alter a space is "open" (free to be altered as desired), "closed" (where all alteration is prohibited), or that their ability to act is partially restricted in some way (partially open or partially closed).

On the more dangerous side of an "open" scenario, the tragedy of the commons might be considered. In this scenario, no rules exist to prevent the harmful exploitation of valued resources. On the more dangerous side of a "closed" scenario, Heller's tragedy of the anti-commons might be considered. In this scenario, so many rules exist that it is not possible to act to prevent the harmful degradation of valued resources. In these scenarios, the tragedy of the commons can be called "abuse" or "over-use" of the resource space; and the tragedy of the anti-commons can be called "neglect".

Considering the more positive side of an "open" scenario, unrestricted actions resulting in environmental benefit might be called "investment". Parties are given opportunity to invest in a resource space and improve that space. Considering the more positive side of a "closed" scenario, restricted actions resulting in environmental benefit might be called "preservation".

Most of the study area rules appear to react to environmental concern, more often resulting in the creation of prohibitive rules. Within the study area, on-going natural processes both enhance and degrade natural features, including the study area's wetlands. The considered experience is that the natural processes at work are not always as beneficial to many study area wetland-users and owners, yet restrictive rules create an almost "anti-common" system where it is difficult or impossible for these groups to make alterations that may be ecologically appropriate or beneficial. An evaluation of existing rules must more carefully scrutinize the intent of these rules within the context of such a mobile environment. Within the existing landscape, the current rule matrix generally does not allow interested parties to invest in their spaces to maintain current conditions of ecological value.

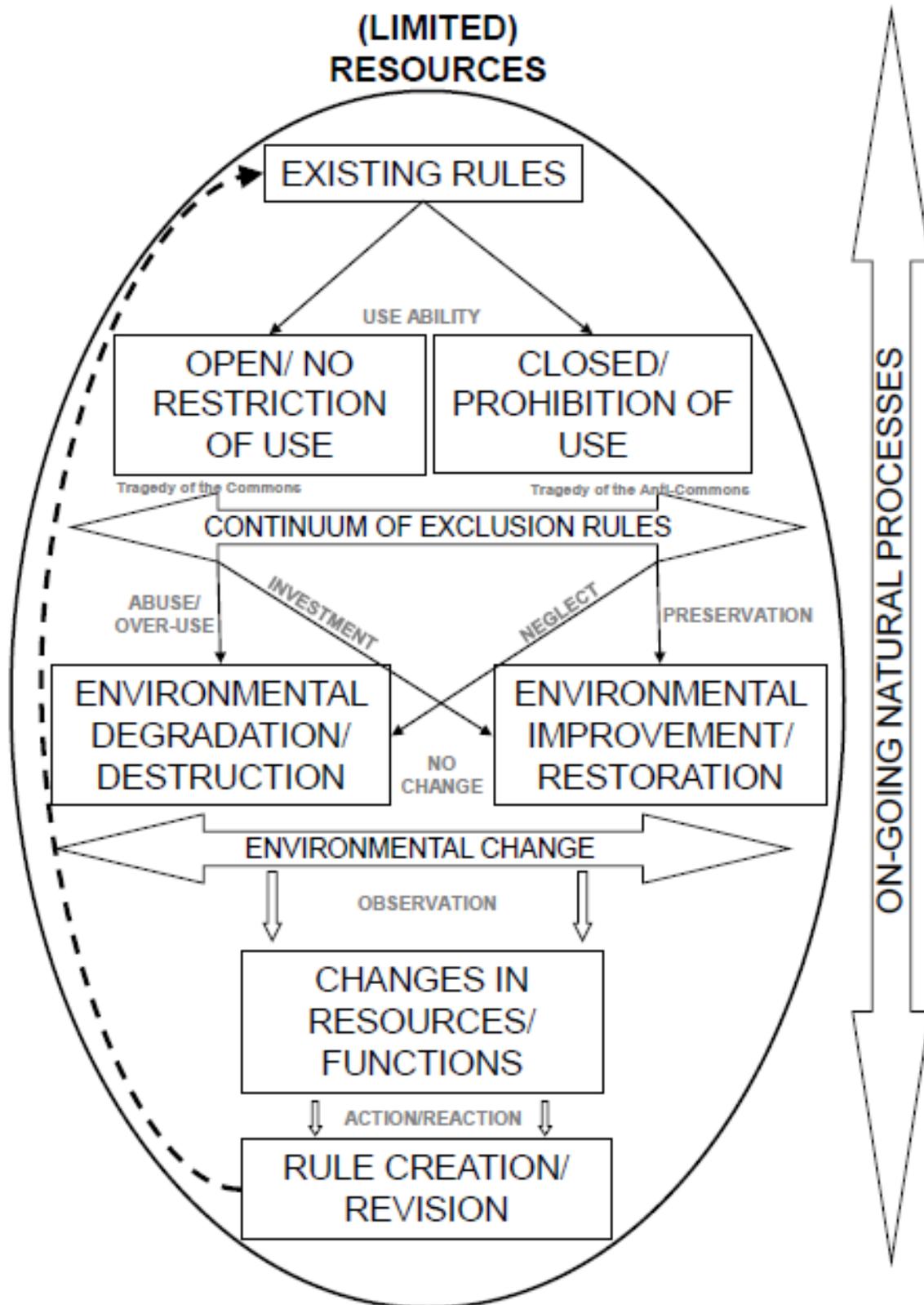


Figure 5: Rule Matrix

7.4 Recommendations

Recommendations here are derived from a case study of a highly-regulated and highly-interested Great Lakes coastal wetland community. The following recommendations are prepared using considerations made through a strong literature review, on-site observations, and key-informant responses. Regarding access and alteration opportunities in the study area, the following recommendations are made:

1. **Increased education and communication** with respect to existing hydrologic, ecologic, and economic values; as well as increased education with respect to existing access and alteration frameworks. Key-informant responses showed discouraging perceived understanding of many rules effecting wetland spaces in the study area; several respondents occasionally indicated that they were unaware of explicit government rules, or more alarmingly indicated that they were not rules.
2. **Make enforcement more effective.** Even when respondents indicated that a rule had a long-term viability and was well-understood by the community, the effectiveness of enforcement was often scored lower. In addition, identified threats often appeared to be addressed by existing explicit rules (which should diminish those threats if the rule is implemented effectively).
5. **Re-evaluate some alteration rules to reflect site specific conditions.** Current alterations rules specifically employed to protect species and habitats seem to assume more stable conditions. A respondent with interest in alteration stated regarding prohibitive alteration rules regarding an aquatic species: “if they don’t let us clear out some of the sand, the fish are going to need to learn to breath air or sand” - referring to the experienced sedimentation and filling of the area’s wetlands. Current prohibitive rules do not appear to address the natural degradation of some spaces.

4. Facilitate ecologically appropriate alterations. Give people an opportunity and provide incentive for people to act as good and interested land stewards. Remove barriers and increase support and communication between regulatory agencies when a property owner suggests an alteration that may have a net ecological benefit. Establish criteria or plans for which applications may be considered ecologically appropriate in the study area.

5. Promote community management organizations to generate interest and funding where alteration is desired and beneficial. The Long Point Waterfowl Management Unit operates on a cost-recovery basis, but the Long Point Waterfowl Association, as a strong publicly-accessible managing influence, generates funding and incredible interest in the Crown Marsh that extends beyond increased waterfowl hunting opportunities to the general health of the marsh.

6. Manage access as required by ecologically sustainable needs but avoid further decreasing public opportunities on common resource areas where possible. As the human use of Long Point's inner-bay continues to increase, it may be important to further restrict some uses, particularly during specific times of the year; remembering that it was private interest in wetland conservation that may have saved the study area's wetlands from ecological destruction during the establishment of the Long Point Company.

Appendixes

Appendix 1: Structured Rules Questions

Rule:

“No development in wetlands.” (example)

1. What is the intended purpose of this rule?

2. How effective is this rule at achieving its purpose?

10 9 8 7 6 5 4 3 2 1
VERY NOT
EFFECTIVE EFFECTIVE AT ALL

- THIS IS NOT A RULE
- I HAVE NOT HEARD OF THIS RULE/ I AM NOT SURE
- DECLINE RESPONSE

3. How well is this rule understood by the applicable community?

10 9 8 7 6 5 4 3 2 1
PERFECTLY NOT AT ALL

- THIS IS NOT A RULE
- I HAVE NOT HEARD OF THIS RULE/ I AM NOT SURE
- DECLINE RESPONSE
-

4. How effective is the implementation/enforcement of this rule?

10 9 8 7 6 5 4 3 2 1
VERY NOT
EFFECTIVE EFFECTIVE AT ALL

- THIS IS NOT A RULE
- I HAVE NOT HEARD OF THIS RULE/ I AM NOT SURE
- DECLINE RESPONSE

5. What is the long-term viability of this rule?

10 9 8 7 6 5 4 3 2 1
VERY WILL NOT EXIST AS A
LONG-TERM RULE FOR VERY LONG

- THIS IS NOT A RULE
- I HAVE NOT HEARD OF THIS RULE/ I AM NOT SURE
- DECLINE RESPONSE

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