

Factors Influencing Landowner Support for Stewardship in the Carolinian Life Zone

by

Mark Knight

A thesis  
presented to the University of Waterloo  
in fulfilment of the  
thesis requirement for the degree of  
Master of Environmental Studies  
in  
Geography

Waterloo, Ontario, Canada, 2006

© Mark Knight 2006

I hereby declare that I am the sole author of this thesis.

This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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

## Abstract

Stewardship is a key tool for the protection of natural areas at the landscape-scale. This is nowhere more evident than in the Carolinian Life Zone of Southern Ontario, where habitat exists for approximately 80% of Canada's Species at Risk and where the majority of land is in private ownership. However, the implementation of stewardship initiatives has not always been successful. While an outcome of stewardship has been increased protection, initiatives that do not serve landowner needs can lead to reduced landowner support for future stewardship efforts. As such there is a need to look beyond landowner participation/non-participation, and instead examine the factors influencing landowner support for stewardship.

The existing stewardship research on landowner support has found three main influencing factors: stewardship ethics, property rights concerns and bureaucracy. To examine if these themes are relevant to the Carolinian Life Zone interviews were conducted at three case study sites: Point Pelee, Rondeau and Long Point. The findings indicate that while the three broad themes are present, certain themes are more salient than others. It was also found that the local stewardship context made a great difference for landowner responses. Recommendations from the findings involve changes to stewardship programs, the role of landowners in conservation decision-making and land-use regulations.

## Acknowledgements

I am grateful to acknowledge and thank:

The many landowners I interviewed, who constantly expressed a connection with their land and an interest in the environment.

Dr. Scott, for allowing me to pursue a subject close to my heart.

Dr. Slocombe, for pushing me to be academically sharp.

My wife Alice, my best friend.

## Table of Contents

List of Figures.....	vii
List of Acronyms.....	viii
1.0 Introduction.....	1
1.1 Stewardship and the Carolinian Life Zone.....	1
1.2 Study Rationale.....	4
1.3 Study Overview.....	7
1.3.1 Objectives.....	7
1.3.2 Case Study Sites.....	7
1.3.3 Research Methods.....	12
1.4 Thesis Organization.....	13
2.0 Literature Review.....	14
2.1 Stewardship.....	14
2.1.1 Stewardship Definition and Actors.....	14
2.1.2 Stewardship Tools.....	18
2.2 The North American Park Model.....	23
2.2.1 Social and Biological Criticisms.....	25
2.2.2 Responses to the Critiques.....	30
2.2.3 The Social and Biological Benefits of Stewardship.....	33
2.3 Stewardship Research.....	37
2.3.1 Stewardship Implementation.....	37
2.3.2 Landowner Participation.....	38
2.3.3 Landowner Support.....	40
2.4 Literature Review Summary.....	45
3.0 Methodology.....	47
3.1 The Study Site and Case Study Approach.....	47
3.2 Data Collection.....	51
3.2.1 Method Design.....	51
3.2.2 Recruitment Design.....	54
3.2.3 Interviews.....	55
3.3 Data Analysis.....	58
3.4 Methodological Limitations.....	59
4.0 Findings and Discussion.....	62
4.1 Stewardship Ethic.....	62
4.1.1 Expression of a Stewardship Ethic.....	62
4.1.2 Understanding Nature.....	69
4.1.3 Stewardship Constraints.....	75
4.1.4 Stewardship Behaviour.....	79
4.2 Property Rights Concerns.....	84
4.3 Bureaucracy.....	89
4.3.1 Information.....	89
4.3.2 How Implemented.....	93
4.3.3 Who Implements.....	96
5.0 Research Summary and Conclusions.....	102
5.1 Summary and Conclusions.....	102

5.2 Recommendations.....	108
5.3 Study Limitations.....	114
5.4 Future Research.....	115
5.5 Study Conclusion.....	117
Appendix A: Point Pelee Interview Summary Matrix.....	119
Appendix B: Rondeau Interview Summary Matrix.....	120
Appendix C: Long Point Interview Summary Matrix.....	121
Bibliography.....	122

## List of Figures

Figure 1.1 The Ontario Deciduous Forest (Carolinian Life Zone).....	2
Figure 1.2 The Three Case Study Sites within the Carolinian Life Zone.....	8
Figure 1.3 Stewardship Activity at the Three Case Study Sites.....	11
Figure 2.1 A Summary of the Stewardship Toolbox.....	19
Figure 2.2 Picture of an anti-MNR sign in the Carolinian Life Zone.....	38
Figure 3.1 Candidate Case Study Sites within the Carolinian Life Zone.....	50
Figure 4.1 Landowners Expressing a Childhood Connection to a Stewardship Ethic.....	64
Figure 4.2 Landowners Expressing Personal, Societal and/or Religious Ethics.....	65
Figure 4.3 Landowners Expressing Constraints to Stewardship.....	76
Figure 4.4 Landowners Exhibiting Stewardship Behaviour.....	80
Figure 4.5 Comparison of Landowners Exhibiting Stewardship Behaviour and Claiming to Understand Nature Better than Others.....	83
Figure 4.6 Landowners Expressing Various Property Rights Concerns.....	85
Figure 4.7 Landowners Expressing Various Opinions on Information Availability.....	90
Figure 4.8 Landowners Expressing Various Opinions on How Programs are Implemented.....	94
Figure 4.9 Landowners Expressing Mistrust of Government Actors.....	97
Figure 4.10 Landowners Expressing a Preference for Local Actors.....	99
Figure 4.11 Landowners Expressing Opinions of Local Actors.....	100

## List of Acronyms

ERCA – Essex Regional Conservation Authority

IUCN – World Conservation Union

LPNWA – Long Point National Wildlife Area

LPPP – Long Point Provincial Park

LPRCA – Long Point Region Conservation Authority

LTVCA – Lower Thames Valley Conservation Authority

NGO – Non-governmental Organization

PPNP – Point Pelee National Park

RPP – Rondeau Provincial Park

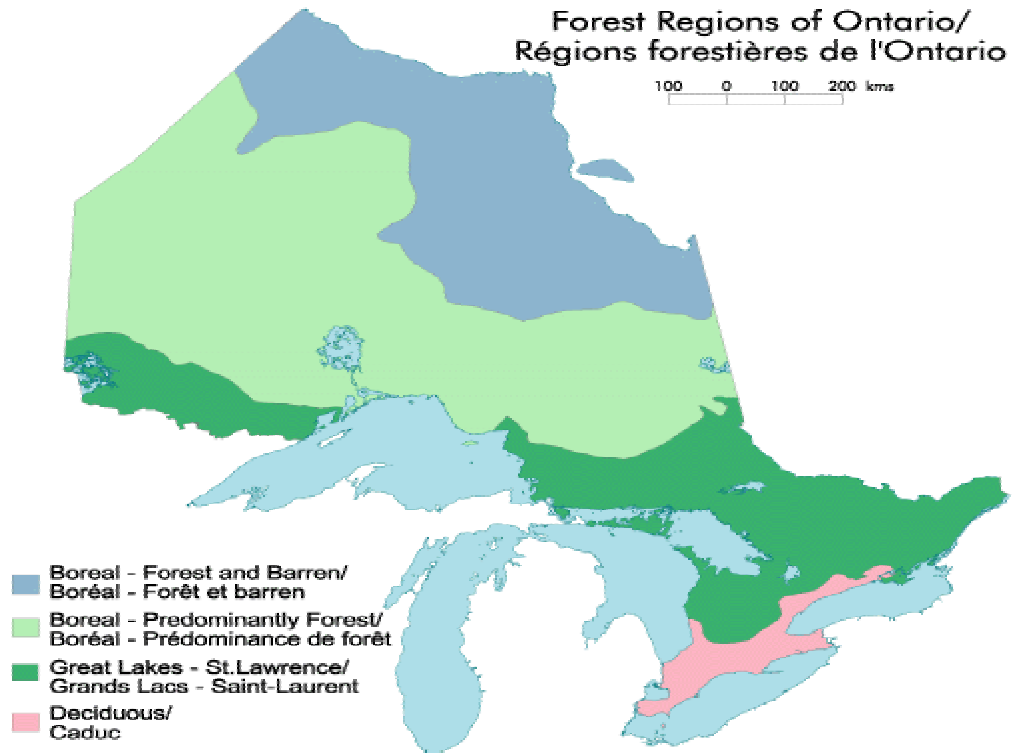


## 1.0 Introduction

### 1.1 Stewardship and the Carolinian Life Zone

Stewardship is an important component of the conservation of natural areas. While the term can be used in a broad sense to mean caring for the earth (Lerner 1993), in regards to protecting natural areas it involves the efforts of landowners to manage and protect their land (Brown and Mitchell 1991). The importance of stewardship is the many social and biological benefits it brings to protecting nature (Brown and Mitchell 1997). From a social perspective, stewardship can involve programs that educate landowners about their land, or recognize the inherent stewardship that landowners practice. From a biological perspective stewardship provides useful tools when conservation methods need to be creative, as occurs when attempting protection at a landscape-scale. These tools come in a variety of forms and include verbal agreements for land protection, technical assistance for re-naturalization and conservation easements to protect portions of properties, among others.

The importance of stewardship for protecting nature can be seen in the Carolinian Life Zone of Southern Ontario. This area represents the portion of the Deciduous Forest Region which is found in Ontario (Figure 1.1). As the entire extent of this Forest Region encompasses a large area of eastern North America the term ‘Carolinian’ derives its name from the Carolinian states. While the boundaries of this zone are generally defined by the Great Lakes the northern boundary is defined by the range limits of certain plant species, and as such is more fluid (Allen, Eagles, and Price 1990).



**Figure 1.1 The Ontario Deciduous Forest (Carolinian Life Zone)**

Source: (Environment Canada 2005)

The Carolinian life zone has a climate which is unique for Ontario, with mild seasons, low snowfall and moderate rainfall (Line et al. 2000). Such moderation is due in part to the latitudinal location of the zone, as the area is the most southerly portion of Canada, parallel with northern California. The surrounding Great Lakes also contribute greatly to the mild climate by moderating extreme changes in temperature (Hilts and Mitchell 1998).

The result of this unique climate is a diversity of flora and fauna that is unmatched in any other area of Canada (Line et al. 2000). Approximately 2,200 herbaceous plants are found in the region, roughly half of the total found throughout all of Canada (The Centre for Land and Water Stewardship 1994). There are also twice as many tree species as are found in Ontario's boreal forest region (Waldron 2003). As

impressive are the number of birds, almost 400, over half of all the bird species in Canada (The Centre for Land and Water Stewardship 1994). The habitat of many reptiles, amphibians, butterflies and mammals are found primarily or entirely in this region (The Centre for Land and Water Stewardship 1994). In addition, the area contains the majority of Canada's rare plant species (Line et al. 2000) and over 80% of Canada's Species at Risk (The Carolinian Canada Coalition 2004).

While the Carolinian region is therefore ecologically unique, stewardship plays an important role in protecting nature due to the fragmented landscape. South-western Ontario contains less than 15% natural vegetation cover (Larson et al. 1999) due to such pressures as urbanization, agriculture and transportation and utilities infrastructure (Beechey et al. 1999). Woodland habitat has been reduced to less than 5% of the landscape (McLachlan and Bazely 2003). Over 75% of wetland areas have been drained (OMMA and OMNR 1992). Less than 1% of prairie landscapes remain (Bakowsky and Riley 1994). The outcome of this land-use pressure is intense landscape fragmentation, leaving few natural areas that are not small in size and physically isolated from environmentally similar surrounding land-uses (Beechey et al. 1999).

In addition, while the Carolinian area represents only 0.25% of Canada's land mass (Allen, Eagles, and Price 1990) it contains over 25% of Canada's entire human population (Statistics Canada 2002). The population pressure is not likely to subside anytime soon, with the projected population growth rate for South-western Ontario being 30.7% between 2005 and 2031 (Ontario Ministry of Finance 2006).

Within this threatened landscape stewardship works with private land to protect the remaining natural features. While only 1.3% of South-western Ontario is set aside through formal protected areas (Larson et al. 1999) 87% of all land is privately owned (EnviroNics 2001). Unfortunately the amount of nature remaining on private land in the Carolinian Life Zone is unknown. All that stewardship research surmises is that the amount of nature on private land is likely quite significant when compared to the amount of nature in formal protected areas (Dempsey, Dearden, and Nelson 2002). What is known is that the remnant patches of habitat on private land support a large percentage of the region's biodiversity. For example, over 70% of all rare bird breeding sites in Southern Ontario are found on private land (McLachlan and Bazely 2003), and over 50% of all rare plants in the Carolinian area are not found in formal protected areas (Line et al. 2000).

## 1.2 Study Rationale

As evidenced with the Carolinian Life Zone, stewardship can play an important role in the protection of natural areas. The importance of stewardship for the future of protected areas has been noted by numerous protected areas professionals. The World Conservation Union (IUCN) states that stewardship programmes are an integral component of protected areas policies (McNeely 1992). Nelson and Sportza (2000) list stewardship as one of nine key future trends for protected areas.

Nonetheless, like any promising idea the main challenge for stewardship is one of implementation. It has been suggested that implementing a protected areas strategy at the landscape-scale is the biggest challenge facing protected areas management

(Dudley et al. 1991; Weber 2003). This challenge has also been remarked by Brown (1998), a leading stewardship researcher, who suggests that implementation is a major aspect of stewardship research which requires further exploration.

The challenge of implementing stewardship in the Carolinian Life Zone can be examined by distinguishing between outcomes and effects (Clark 2002). The outcome of an action is the short-term effects that are experienced, whereas the effects of an action are the long-term changes that result from various outcomes. In this respect the outcome of stewardship in Carolinian Canada has been quite successful. The Carolinian zone has numerous organizations undertaking stewardship initiatives. Also, while exact figures are unknown, stewardship has likely protected a large number of natural features. A landowner contact program for the Carolinian area in the mid-1980's had an approximate success rate of 80% in gaining verbal protection agreements from landowners (Hilts 1993). When viewed from an effects perspective stewardship has not been so successful. There is evidence from conservation professionals that landowner support has been lacking for specific organizations and stewardship efforts in the Carolinian zone. Thus the concern is that while short-term outcomes of stewardship may yield additional protection, the long-term effect is landowner apprehension towards future support of stewardship initiatives.

Such a shift in perspectives is evident when examining the literature on landowner support for stewardship. Originally research focused upon participation/non-participation, which overlooks that landowners can be involved in multiple stewardship programs or can be involved in no programs yet still be influenced by stewardship efforts. The research also focused upon the socio-economic characteristics of

participating landowners, yet it was found that results were not comparable between programs, and they were often contradictory within the same program focus (Cutting and Cocklin 1992). Due to these issues more recent research has shifted from attributes influencing stewardship participation to landowner experience and opinions influencing support for stewardship. Numerous authors have supported this shifting focus towards landowner support, noting that it is a necessary component of successful stewardship (Ack et al. 2001; Dempsey, Dearden, and Nelson 2002), and that the absence of support can lead to confrontation (Hilts, Kirk, and Reid 1986).

The most complete examination of landowner support comes from Rickenbach and Reed (2002). Their research into landowner support encapsulates the findings of the majority of such research and summarizes these findings into three broad factors: stewardship ethic, property rights concerns and bureaucracy. To begin, landowners express a stewardship ethic through many means, although this ethic has gaps, can be constrained, and is not always evident in actions. Landowners are also concerned about their property rights and privacy, regulations, or lack of acknowledgment which may affect these rights. Finally, landowner support is influenced by the bureaucracy of stewardship initiatives, such as the availability of information, how programs are implemented and who does the implementing.

In conclusion, while stewardship is a vital tool in the protection of natural areas at the landscape-scale, the successful implementation of stewardship is not guaranteed. While the outcome of stewardship initiatives may be more protected nature, the effect may be decreased landowner support. As such it is important to look beyond program-based research to examine the factors influencing landowner support for stewardship.

## 1.3 Study Overview

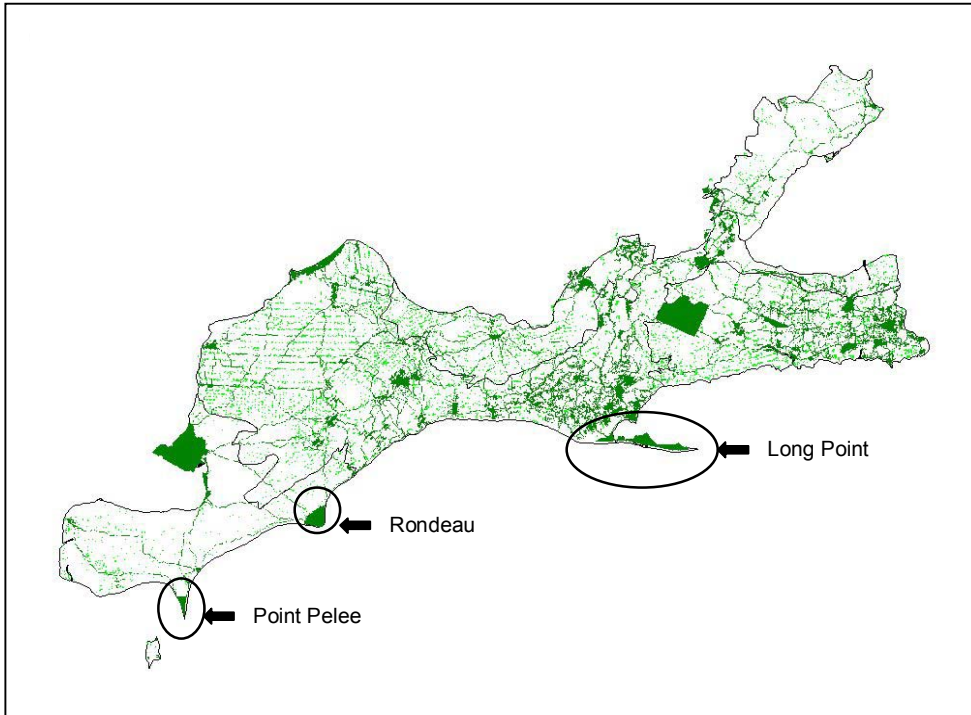
### 1.3.1 Objectives

While stewardship is an important part of nature protection in the Carolinian Life Zone landowner support for stewardship initiatives has not always been present. Therefore this study will attempt to answer the question: What are the factors influencing landowner support for stewardship in the Carolinian Life Zone, and how can this knowledge improve stewardship implementation? To examine this issue the thesis objectives are:

1. To assess the extent that landowner comments regarding stewardship are congruent with what the academic literature states about landowner support for stewardship.
2. To explore whether factors not identified in the literature are involved in landowner support for stewardship.
3. To compare and contrast the factors affecting landowner support for stewardship initiatives amongst multiple geographical sites, highlighting similarities and differences and exploring implications.
4. To suggest ways that the practice of stewardship could be improved to increase landowner support.

### 1.3.2 Case Study Sites

The method used to explore these objectives was a case study approach (Yin 1989). Three case study sites were chosen for the research: the Point Pelee area of Essex County, the Rondeau area of Chatham-Kent County, and the Long Point area of Norfolk County



**Figure 1.2 The Three Case Study Sites within the Carolinian Life Zone**  
Source: (Adapted from Carolinian Canada Coalition 2004)

The specific boundaries of these case study sites were kept fluid. The purpose was to contact landowners who lived amongst the most natural settings such as parks, conservation areas, or nature on private land, rather than be constricted by limits set before interviewee sampling began.

In terms of biological and geological characteristics the sites are quite similar. All three areas contain significant formal parks: Point Pelee National Park (PPNP), Rondeau Provincial Park (RPP), and the Long Point Biosphere Reserve (encompassing Long Point Provincial Park (LPPP) and Long Point National Wildlife Area (LPNWA)). Point Pelee National Park is one of the premier birding sites in North America, and is classified as a Ramsar Wetland. The park consists largely of marsh vegetation, with



forested areas along the western edge and near the peninsula's tip. Rondeau Provincial Park is similarly a mixture of marsh and forest communities, containing one of the largest patches of forest in the Carolinian Life Zone (Allen, Eagles, and Price 1990). The Long Point Biosphere Reserve consists mainly of marsh vegetation, and is home to Bird Studies Canada, a non-profit organization dedicated to ornithological research. The forest vegetation present is of a more northern variety than is found at the latter two parks (Reznicek and Catling 1989). All three parks are found on peninsulas formed by submerged glacial moraines (Skibicki and Nelson 1993), and all face occasional flooding due to their low-lying topography (Lawrence and Nelson 1999).

Besides having such major formal parks the areas also contain smaller protected areas and nature informally protected on private land. In the Point Pelee area the landscape surrounding the park is intensively farmed, although occasional tree stands persist along the eastern shoreline, and the Essex Regional Conservation Authority (ERCA) manages the nearby Hillman Marsh Conservation Area. The Rondeau area consists of a landscape similarly altered by agriculture, although the Lower Thames Valley Conservation Authority (LTVCA) does manage two neighbouring Conservation Areas. The Long Point area consists of numerous protected features. The biosphere reserve contains land owned by the Nature Conservancy of Canada, the Long Point Company and private individuals. Beyond the peninsula there are three Conservation Areas and eleven Natural Heritage Woodlands all managed by the Long Point Region Conservation Authority (LPRCA). In the surrounding landscape there are considerable natural features protected on private land.

The three case study sites are also areas of active stewardship, as can be seen by the number of conservation organizations undertaking stewardship activities (see Figure 1.3). The land surrounding PPNP was originally marsh, with the last section drained for agriculture in the 1950s. Today agricultural activity occurs up to the northern border of PPNP, and cottages are found along the entire eastern and western stretches of the Pelee peninsula outside of the national park. Amongst a few stewardship actors in the area there has been a movement towards connecting PPNP with the more northerly Hillman Marsh, by re-naturalizing (i.e. returning to a state where the existence of ecological features is the prime land function) the connecting agricultural/cottage lands (Hummel 1995; The Carolinian Canada Coalition 2004). ERCA has also implemented a recent ban on construction for eastern peninsula properties. While this ban is intended to last until an engineering report is completed on coastal protection structures, the interviews for this study found that many landowners fear it is part of a plan to lower property values and thus make the purchasing of land for re-naturalization more economical.

The sandy landscape of Rondeau meant limited agriculture occurred as recently as the 1880s (Killan 1993). However, concern over the extent of logging practices was expressed as early as 1867 (Killan 1993). Today the land surrounding RPP is highly agricultural. There has also been housing development in the area consisting of lakefront cottages, towns with populations of under 1000 people (Statistics Canada 2002), such as Port Rowan, and 'estate housing' where rural subdivisions have been built for large and expensive homes. Within the provincial park, cottages have been present since the late 1800s (Killan 1993), and many remain leased. While development has continued outside of the park boundaries there is uncertainty about whether current

cottage leases within the park, which are set to expire in 2017, will be renewed (Rondeau Cottagers Association 2002).

The Long Point area has a very similar history to Point Pelee of marsh drainage. Land outside the point is largely agricultural, with rural homeowners and cottagers. Long Point has more remaining natural features than the other two sites and as such has a large number of stewardship actors. As the Long Point landscape is more natural the focus is less on re-naturalization, and more on preserving the remaining natural features (Long Point World Biosphere Reserve Foundation 2004).

<b><u>Case Study</u></b>	<b><u>Organization</u></b>	<b><u>Stewardship Activities</u></b>
Pt Pelee	Essex Regional Conservation Authority Friends of Point Pelee National Park Ducks Unlimited Landowner Associations The Nature Conservancy of Canada The Carolinian Canada Coalition The Canada South Land Trust	Re-naturalization Projects Park Maintenance Marsh Maintenance/Creation Shoreline Protection Land Protection Advocacy Land Protection
Rondeau	Lower Thames Valley Conservation Authority Rondeau Cottagers Association The Nature Conservancy of Canada The Carolinian Canada Coalition The Canada South Land Trust	Re-naturalization Projects Impact Mitigation Land Protection Advocacy Land Protection
Long Point	Long Point Region Conservation Authority Canadian Wildlife Service Norfolk Woodlot Owners Association Norfolk Land Stewardship Committee Long Point Basin Land Trust Long Point Ratepayers Association Long Point Company Ducks Unlimited The Nature Conservancy of Canada The Carolinian Canada Coalition The Canada South Land Trust	Re-naturalization Projects Wildlife Monitoring Re-naturalization Projects Advocacy/Re-naturalization Land Protection Impact Mitigation Land Protection Marsh Maintenance/Creation Land Protection Advocacy Land Protection

**Figure 1.3 Stewardship Activity at the Three Case Study Sites**

### 1.3.3 Research Methods

Data collection occurred through 34 semi-structured interviews with landowners: 12 at Point Pelee, 12 at Rondeau and 10 at Long Point. The specific themes explored during the interviews involved the landowner support factors noted by Rickenbach and Reed (2002) and similar research, which are listed in Section 3.2.1 for reference. To identify landowners the recruitment method of snowball sampling was used (Patton 1990). First contact occurred with conservation organizations at the three case study sites, asking for their assistance in approaching local landowners. All interviewees were then asked to identify other landowners who may have been willing to be interviewed. Interviews were audio-recorded when possible, and averaged approximately 35 minutes in length.

Data analysis occurred through coding (Cope 2003). All interviews were examined based on the landowner support themes noted in the academic literature. Answers were then grouped based on similar responses to the themes. Finally, patterns across themes were identified by case study site, landowner characteristics and by correlating different themes. A matrix summary of the interview responses are provided for reference in Appendices A, B and C.

## 1.4 Thesis Organization

Chapter 2 begins with a broad overview of stewardship, involving a definition of the term, and an exploration of stewardship actors and tools. This introduction is followed by a summary of the pivotal role that stewardship plays in the movement towards large and connected natural areas. The chapter concludes with an examination of stewardship research. This begins with a summary of the challenge of implementing stewardship, followed by an examination of early research on landowner participation, and ending with an exploration of the major themes behind landowner support.

Chapter 3 describes the research methods used to explore landowner support for stewardship. This begins with an explanation of the criteria used to select the Carolinian Life Zone as the study area and Point Pelee, Rondeau, and Long Point as the specific case study sites. Next follows a description of the data collection procedures, involving the choice of personal interviews via an interview guide, the recruitment of interviewees and the interview process. This is followed by a discussion of data analysis, before ending with an exploration of possible methodological limitations.

Chapter 4 presents the findings from the interviews. The results are presented by theme, as noted in the academic literature and the interview guide. The presentation of these findings attempts to describe any patterns noted in the landowner statements; differences are noted by case study site, by landowner characteristics and by correlating responses between different themes.

Chapter 5 summarizes the research findings, providing conclusions to the study objectives, recommendations to enhance stewardship initiatives and a discussion on the limitations of the study. The section concludes with suggestions for future research.

## 2.0 Literature Review

The word stewardship can be a confusing term, as it contains several possible meanings with regards to protecting natural areas. As a result this section will begin by defining stewardship and discussing the variety of stewardship actors and tools. To answer why stewardship is important, changes in protected areas theory will be examined, highlighting the role that stewardship plays in the movement towards protected areas that are connected and large in scale. Finally, to examine how stewardship works in practice the academic literature on stewardship implementation will be discussed, in particular the movement towards studying factors which influence landowner support.

### 2.1 Stewardship

#### 2.1.1 Stewardship Definition and Actors

The origin of the word stewardship comes from the word ‘steward’ - a steward is one who manages land for someone else (Lerner 1993). Today, such management has moved towards an ecological understanding, where the ecological functioning of land is taken into account (Murray 1995). Therefore, stewardship involves various methods to manage land to enhance and/or maintain its ecological value.

Stewardship is also a more complex term than is implied by management alone. On the one hand, stewardship can be defined quite broadly as people taking care of the earth (Lerner 1993). This care is often through indirect means which have more to do with being environmentally conscious, such as recycling, than direct environmental

action, such as setting aside land as a nature preserve (Brown and Mitchell 1997). Such a broad definition of stewardship is most often used by governments in Canada (The Stewardship Working Group 2002; OMNR 2004). This definition places any conservation onus solely on landowners and users, beyond the realm of government. In addition, the specific relationship to the land is not as important as the actions taken upon the land itself. Some also take such caring to not only involve the land, but the people who live on and use the land (McNeely 1992). As such, caring assumes a moral tone and is viewed as a benefit to both nature and humans.

On the other hand, by the mid-1980s the term had evolved to further describe the actions involved in attempting to persuade others to care for their land (as found in Porterie, Gartley and Horton 1986). Brown and Mitchell (1991, pg. 173) therefore define this stewardship as “efforts to create, nurture and enable responsibility in landowners and resource users to manage and protect land and natural resources”. As such stewardship is not only caring for the earth, but it is encouraging others to accept the responsibility of managing and protecting the earth. The term also acknowledges human intervention in nature, and in fact states that humans must actively manage the Earth when it is ecologically necessary to do so. Due to these factors it is this more protected-areas focused definition of stewardship that is most applicable to the role that stewardship plays in the protection of natural areas.

In practice such stewardship involves a variety of actors. As stewardship initiatives are voluntary, unlike government mandated protection, the support of land owners and users is vital. In some instances these initiatives are undertaken spontaneously by a variety of landowners. It has been noted that many

landowners are committed to conservation, and are already good stewards of their land (Hilts, Kirk, and Reid 1986; Brown 1998). In many cases the natural features stewardship aims to protect would have been previously removed if landowners were not already stewards.

In other instances stewardship action is more formalized, relying upon the instigation of others. One of the main players in this regard are NGOs. One type of NGO involved in stewardship, although not highlighted in the stewardship literature, is member-based organizations. An example found throughout the Carolinian region is woodlot owner associations, in which members must own a woodlot. While such organizations have functions beyond stewardship, involving member services, they also promote the sustainable management of woodlots.

The other type of NGO involved in stewardship are conservation organizations. In some instances these involve groups who provide education about environmental issues (Dempsey, Dearden, and Nelson 2002). In other instances these involve organizations, such as land trusts, that take a more hands-on role in protecting natural areas. Land trusts are organizations dedicated to protecting natural areas through the purchase of land, or by arranging agreements with landowners which protect natural features from environmentally harmful practices (Mitchell and Brown 1998; LeRoy 2005). These organizations face many challenges, most often involving staffing and budgets (Mitchell and Brown 1998). They also have a relatively narrow environmental focus, which can ignore the connectedness of environmental issues (Murray 1995). Nevertheless, their success in garnering protection has led to an increased popularity in Canada, with the number doubling within the last five years to over 125 (LeRoy 2005).



Whether a membership-based organization or a conservation organization, all NGOs undertaking stewardship have advantages that government organizations do not (as noted by Murray 1995). They are more flexible and can therefore undertake conservation through creative means. One landowner interviewed for this study, who was involved with a local land trust in Carolinian Canada, described an agreement that the trust had with Ontario Parks to jointly purchase a parcel of land. However, before the land could be used for educational purposes the government required a thorough environmental assessment of the land, which would have taken several years to complete. Thus the trust decided to find a more flexible partner. This also demonstrates two additional positive attributes: that NGOs can be flexible in the creation of effective partnerships, and that they can bring private funds to an initiative.

NGOs can also test methods with a freedom that governments cannot. For example, creative agreements to protect natural areas can occur, including those which involve hand-shake agreements (Mitchell and Brown 1998). Also, NGOs often have a single purpose, and therefore can devote much energy to the undertaking of a single environmental initiative; this can be both a negative and a positive attribute. They also can act quickly, often in a matter of days or weeks, on environmental threats or conservation opportunities (Mitchell and Brown 1998; Dempsey, Dearden, and Nelson 2002). Finally, NGOs can gather resources in a manner that government organizations often find difficult, most often involving volunteers and cost sharing.

Regardless of such benefits, it should not be forgotten that government support at some level is always beneficial for the existence of stewardship. At first this assertion may seem contradictory. Government responses to the need for conservation are often

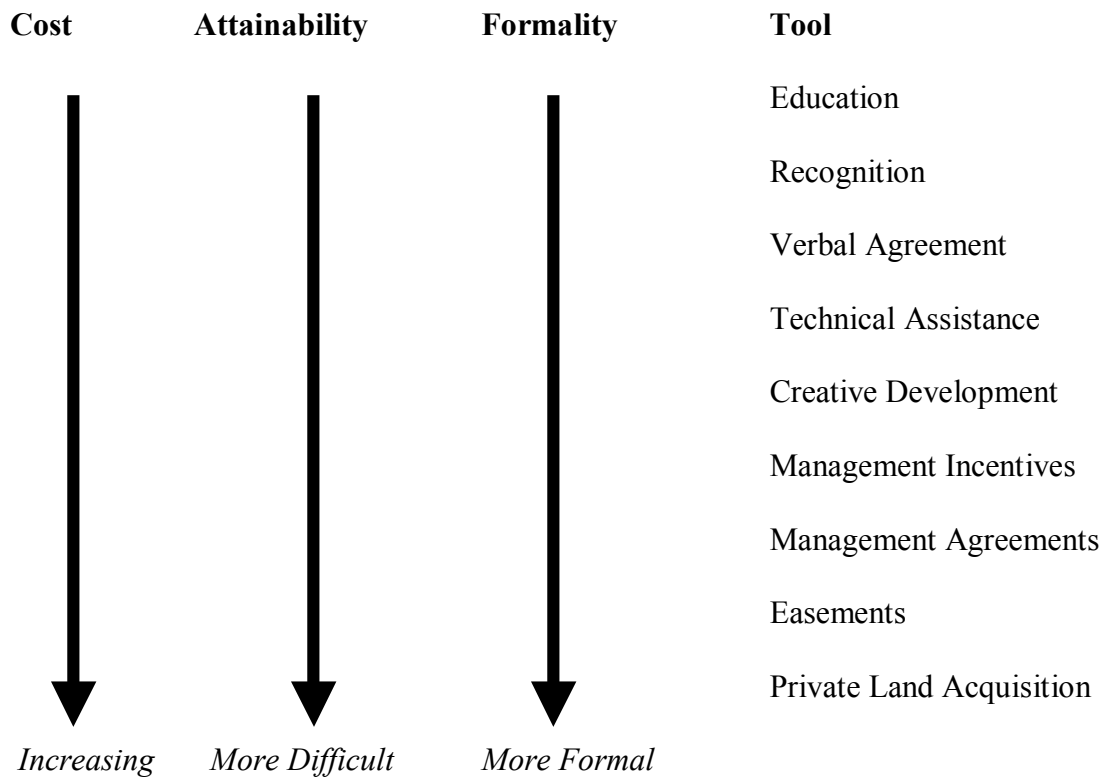
viewed as inadequate (Hilts 1993; Phillips 1998; Dempsey, Dearden, and Nelson 2002; LeRoy 2005). In fact, such shortcomings are a major reason for the growth of stewardship initiatives in the first place (Lerner 1993; Gustanski 2000). However, governments do provide many supports which make stewardship possible, such as tax and financial incentives, land use planning and providing a supportive climate for NGOs (Brown and Mitchell 1997). In fact, both the Canadian federal government and the Ontario provincial government have devised strategies to encourage stewardship, involving such aspects as investing financially in stewardship, connecting professionals and stewardship knowledge, and strengthening policy and legislation (The Stewardship Working Group 2002; OMNR 2004). Government organizations in Ontario, such as the Ministry of Natural Resources and local Conservation Authorities, also support stewardship through providing various programs related to re-naturalization and proper natural resource management.

### 2.1.2 Stewardship Tools

While there are many stewardship actors there are also many tools which are utilized by both NGO and government conservation organizations in order to enable on-the-ground stewardship. Such tools are not new and are used in other contexts, but like the emergence of stewardship itself they are becoming more frequent and more formalized (Brown and Mitchell 1997). These techniques tend to be used in situations where management is the key objective, rather than an absolute restriction on land use (Brown and Mitchell 1997). It is important to note that not all programs or organizations employ the full range of available stewardship options; while it is

acknowledged that a wider range of tools capture a wider range of landowners (McNeely 1992), the use of particular tools is always subject to the specific local context.

The most comprehensive summary of the toolbox available to stewardship comes from Brown and Mitchell (1997) – see Figure 2.1. In essence, stewardship tools exist along a continuum, increasing in cost and difficulty as the techniques increase in formality. Related to these factors is the subsequent decrease in the number of participants that stewardship can reach as programs become more costly in terms of time, effort and finances (Hilts and Moull 1990). It is for such reasons that a wider range of tools will result in a larger number of participants.



**Figure 2.1 A Summary of the Stewardship Toolbox**  
Source: (Brown and Mitchell 1997)

Education is vital to stewardship, as landowners can often be unaware of the important and sensitive ecology that exists on their land (Brown and Mitchell 1997). As well, such education can help to build a general conservation ethic among landowners, and build relationships which may eventually lead to more formal stewardship. Unfortunately, while education is an important aspect of stewardship it also contains many inherent difficulties in regards to implementation. For one, education often needs to take several forms to reach all desired landowners (Hilts and Reid 1993), involving such mediums as pamphlets, internet sites, and workshops. In addition, humans have varying degrees of ability to comprehend ecological information and certain information is easier to comprehend than others (Lowenthal 2003). Finally, there is an underlying assumption that there is a natural connection between ecological education and stewardship action, which is assuming a connection where one might not exist.

Recognizing the conservation work that landowners undertake, or that already exists, is an effective method to reward stewardship (Brown and Mitchell 1997). For many landowners recognition may provide more of a reward than any financial incentive could ever bring. Once again such recognition can take a wide variety of forms (Cox 1995). Many organizations present stewardship awards annually and allow candidates to be nominated by members of the general public. Similar public recognition can also be accomplished through providing plaques or large signs proclaiming the unique nature of the natural features being protected. Recognition can also be as simple as a thank-you.

Another less formal stewardship technique is a verbal agreement, sometimes known as a 'handshake agreement'. In many instances landowners are interested in the

conservation message brought forth by stewardship organizations and programs, but are unwilling to bind themselves to any specific course of action. In such instances the landowner simply gives their word that they will not disturb the natural area they own, and that they will give notice to the organization before they sell their property (Moull and Hilts n.d.). While such agreements are certainly not formal, they can be effective in creating and reinforcing a sense of responsibility among landowners (Brown and Mitchell 1997). Once again, verbal agreements may also pave the way to more formal agreements in the future (Hilts and Reid 1993).

Another stewardship method is that of technical assistance. This assistance can take the form of information or the tools and supplies needed to engage in stewardship work (Brown and Mitchell 1997). Technical assistance is similar to the previous methods in that it is usually not tied to any formal agreement, rather assistance is typically provided as part of an on-the-ground stewardship project.

Creative development refers to environmentally-sensitive development. In these cases land development may occur, but all or parts of the existing natural features are maintained (Brown and Mitchell 1997). As such, creative development has more in common with local governmental planning than landowner stewardship.

Formal management is a tool that focuses on incentives or on written agreements. Incentives typically flow from government and involve financial grants and/or tax reductions (Brown and Mitchell 1997). While such incentives may help stewardship overcome financial obstacles, it is also true that many incentives have strict guidelines for qualification, and thus certain smaller-scale stewardship activities can be ineligible.

Written agreements often involve a landowner retaining ownership, while allowing another organization to manage the conservation features on that land (Brown and Mitchell 1997). The drawback to such agreements is that they depend on the landowner, and thus are not binding if the land is sold.

A stewardship tool which overcomes the issue of permanence is that of conservation easements. Easements are restrictive agreements that are built into the land deed, and as such they are binding in perpetuity (Hilts and Reid 1993), regardless of land ownership changes. While these agreements allow landowners to retain ownership they do restrict certain uses, although the fact that the natural features exist in the first place often indicates that those uses are not being undertaken. Regardless, the loss of potential use can often lead to a reduction in property tax assessment, as that land is no longer developable. One drawback to easements is that they require continual monitoring to ensure their conditions are being met (Squires 2000). As such, the legal nature of easements which ensure their permanence can also be a drawback to their use. Many organizations which use easements are non-profit, and thus the cost of monitoring easement conditions, or taking legal action if those conditions are being violated, can be too much for the organization to carry.

Due to the uncertainty of future liability costs many organizations pursue outright ownership of stewardship land. To overcome the obvious up-front costs that this entails several options may be pursued. First, the outright donation of the land can be encouraged. In some instances donations also hold a life estate clause, whereby the landowner can live on the property for the rest of their life or for a specified time period (Moull and Hilts n.d.). Second, organizations may choose to raise more money than the

purchase price of the property and set aside the extra money to help pay for on-going management costs. Finally, the outright sale of property can be achieved through many creative methods (as noted by Hilts and Reid 1993). For example, the sale might include some of the many other stewardship tools available, such as a combination of easement and donation. In other cases land might be sold at a bargain to sympathetic buyers before it reaches the open market. There are also cases where land is purchased, and then the portion not necessary for conservation purposes is re-sold.

## 2.2 The North American Park Model

The importance of stewardship and stewardship tools becomes apparent with the shift to protected areas systems that are connected and large in scale. Originally formal protected parks in Canada followed what Brown, Mitchel, and Tuxill (2003, pg. 31) refer to as the ‘traditional North American model’. This North American model of park includes two broad attributes. First, any land within the park is public land. This means that the park is entirely owned, and typically entirely managed, by government (Phillips 1998). Thus any private land is often not recognized as such by the government that creates the park, or private land is simply moved, by legal means, into the public realm. Until the 1970s this feature often expressed itself in Canada through the federal government expropriating land that was required for a National Park (McNamee 2002).

The second characteristic of this park model is the focus on nature and conversely the exclusion and removal of humans (Kramer, van Schaik, and Johnson 1997; Stevens 1997; Molnar, Scherr, and Khare 2004). In fact, the creation of Yellowstone National Park in the United States, the originator of the traditional North

American park model, involved the removal of Crow and Shoshone native Americans (Pimbert and Pretty 1995). In Canada similar actions are evident in such examples as the past expropriation of land to create National Parks and in the current debate over the future of cottages in certain National Parks and Ontario Provincial Parks.

These two elements, public and natural/non-human, are distinct from the European tradition of protecting areas which involve a mix of private land, and in which humans play a larger role. Such areas have been accurately described as ‘working landscapes’ (Searle 2000), and are found within categories five and six of the IUCNs protected areas typology:

- IA. Strict nature reserve/wilderness: protected area managed mainly for the science of wilderness protection
- IB. Wilderness area: protected area managed mainly for wilderness protection
- II. National park: protected area managed mainly for ecosystem protection and recreation
- III. Natural monument: protected area managed mainly for conservation of specific natural features
- IV. Habitat/species management area: protected area managed mainly for conservation through management intervention
- V. Protected landscape/seascape: protected area managed mainly for landscape/seascape conservation and *recreation*
- VI. Managed resource protected area: protected area managed mainly for the *sustainable use* of natural resources.

(IUCN 1994 italics added)

Despite such European examples of more flexible park regimes, and the legitimacy that such regimes have gained, it is the North American model of formal protected areas that was exported throughout the world (Pimbert and Pretty 1995; Stevens 1997) and that formed the basis for protected areas in Canada.



### 2.2.1 Social and Biological Criticisms

In recent years the notion of using the North American model of protected areas as the prime mechanism to protect natural heritage has received serious criticism, leading to the realization that more flexible protected areas are also required. From a social perspective the model has been criticized for its exclusion of local and indigenous people from their traditional lands and from the management of that land. This exclusion originated from outsider perceptions of local and aboriginal populations.

One line of thinking viewed these groups as people who were using their land in a non-sustainable manner (Pimbert and Pretty 1995; Miranada and LaPalme 1997; Dugelby and Libby 1998). Over-exploitation of resources is certainly a known situation where humans are colonizing an area for the first time (Flannery 1999), and continues to hold true in certain situations with local and indigenous populations around the world (Miranada and LaPalme 1997). Another line of thinking dismissed any claim to environmental stewardship out of hand, arguing that even if certain groups were managers of their ecosystems in the past, the past is gone, and modern pressures and technology make such selective practices difficult to maintain (Western and Wright 1994; McNeely 1995; Van Schaik, Terborgh, and Dugelby 1997; Redford, Brandon, and Sanderson 1998; Agrawal and Gibson 1999).

On the other hand the exclusion of local and indigenous people was exacerbated by a perception of the landscape which was often inaccurate, seeing wilderness where none existed (Molnar, Scherr, and Khare 2004). In some instances this was an area where ecology seemed to be 'wild', but where in fact the ecological situation came about due to human alteration and management of the landscape. In other instances the

area appeared to be wild due to an absence of humans, ignoring that the landscape likely had a human history, and that perhaps humans had left the area due to war, disease or migration.

The exclusion of local and indigenous people from protected areas is not sustainable (as noted in Borrini-Feyerabend, Kothari, and Oviedo 2004). First, ecological sciences have shown that in some cases humans may actually sustain the ecology that a park is trying to protect, and from which human activities have been excluded. While human use of an area initially leads to heavy loss of biodiversity, the reverse may hold true over time (McNeely 1995). The longer-term survival of local and indigenous populations requires that the ecosystems upon which they depend not be destroyed. The result is that conservation rules are often established by these populations. For example, one common practice is temporal or spatial hunting taboos (Primack 1993). Such rules protect certain areas from resource extraction for specified time periods, or even in perpetuity, thus aiding the possibility of sustaining that resource. This demonstrates that many supposed natural areas have been actively managed by human use at some point in time (Nabhan 1995; Ghimire and Pimbert 1997).

Second, humans are a part of the context in which parks exist and to ignore this presence and influence is simply impractical. Pimbert and Pretty (1995) have noted that many conservationists ignore the presence of people in natural landscapes. The reality is that humans live in, or next to, most natural areas (McNeely 1995; Stevens 1997), and consequently they are a part of most parks.

Third, the human use of parks is being recognized for practical reasons; quite simply, parks need the support of local and indigenous communities (West and Brechin 1991; MacKinnon 1997; Prato and Fagre 2005). A government's ability to force conservation is limited (Agrawal and Gibson 1999), and therefore without support natural areas can be difficult to protect. In addition to such pressure, humans also bring positive aspects to parks (Agrawal and Gibson 1999), such as knowledge of local ecology, providing financial and time/effort inputs, having a stake in the outcome of conservation, and the ability to provide long-term management to an area.

Besides such practical matters, local and indigenous people are also playing an increasing role in parks due to ethical considerations. It has been argued that it is inaccurate to think of parks as simply areas of conservation, when they are really part of a landscape that also includes political, economic, social, and historical dimensions (Brandon, Redford, and Sanderson 1998). To ignore these human dimensions, and thus the role that humans play in the landscape, is therefore considered anti-people (Noss 1987b). Some take such ethical imperatives for inclusion to even further extremes, arguing that parks must not only enhance ecology, but enhance human livelihoods (Dudley et al. 1991; Ghimire and Pimbert 1997; Stokowski 2003). Others question whether or not the sustainability/non-sustainability of local and indigenous practices should be of consequence at all, as they are ultimately the owners of the land (Fortwangler 2003).

From a biological perspective, relying primarily upon the North American park model has been criticized because the model often fails to protect the ecology that is found within its borders. This limitation, exposed through the theory of island

biogeography, is often a result of physical issues of park location, numbers and size. Such parks have also been criticized because they allow conservation efforts to ignore the greater park ecology. The narrow focus of representation as a criterion for the creation of parks has also been criticized. Finally, the possibility of climate change brings into question the entire philosophy behind the creation of parks.

From a biophysical standpoint the limitations of relying primarily upon such parks became apparent with the theory of island biogeography (Wilson and MacArthur 1967; Simberloff 1974; Diamond 1975). This theory involves three patterns that have been noted since the 1600s (Goble 2002), but have been brought together into one coherent concept. The three main observed patterns are as follows (Shafer 1990):

1. A correlation exists between species abundance and land area, so that larger islands typically have more species.
2. Isolation reduces the number of species.
3. New colonists to an area replace species that become extinct.

The cumulative impact of these generalizations is that as the area of an island decreases, so too do the number of species. This is vitally important for parks, as this theory holds true not only for physical islands but also for functional islands, such as a park surrounded by urban/agricultural development. The implication is that as parks increasingly become islands, through increasing human alteration of the surrounding landscape, the rate of species loss will increase. Studies have shown that this theory is indeed true: forested areas surrounded by human-altered land display dynamics similar to those of true islands, including the hypothesized loss of species (Terborgh and Winter 1980).

Island biogeography therefore brings into question the ecological context of many North American-style parks. To begin, parks are often biologically not located where they are most necessary (Noss and Cooperrider 1994; Molnar, Scherr, and Khare 2004). Parks are often located where it is politically, economically, and socially convenient to create them, not on the most ecologically important lands (Dudley et al. 1991). For example, much of the world's biodiversity is found in areas of heavy human settlement, yet these areas are poorly represented in most protected areas systems (Dudley et al. 1991; Molnar, Scherr, and Khare 2004). Besides the issue of convenience, parks were originally created for functions far removed from conserving biodiversity, and thus the fact that they are often not located in the most biologically significant areas should come as no surprise.

There is also a realization that there are too few parks to protect the earth's biodiversity (Noss and Cooperrider 1994; Dearden and Mitchell 1998). Biologists have estimated that given the current coverage of parks throughout the world much of the world's biodiversity resides outside of protected areas (MacKinnon 1997; Myers et al. 2000). Island biogeography also highlights that few parks are large enough to sustain the species which are found within their borders (Noss and Cooperrider 1994; Clark and Minta 1994; MacKinnon 1997; Dearden and Mitchell 1998; Bennett and Wit 2001). Such a concern holds especially true for megafaunas, whose ranges typically extend beyond the boundary of their protected area.

Such parks have also allowed conservation efforts to disregard the ecology of the surrounding landscape. Human impacts on the environment cannot be compensated by simply creating protected areas, since in practice the greater park landscape has not

been managed with ecology in mind, and thus existing protected areas become cut off from any surrounding ecological integrity (Bennett and Wit 2001; Dearden and Rollins 2002). As a result, the act of ignoring the ecological importance of the surrounding matrix actually creates islands and leads to species loss.

Parks have also been created to protect representative examples of nature, such as species or ecosystems, which itself has proven limiting. The functions of parks have moved beyond attributes for which representation is a main goal into broader goals such as protecting biodiversity and enhancing human welfare (Nelson and Serafin 1997). As a result factors beyond representation must be considered.

Perhaps the most fundamental challenge to the reliance upon such parks is the possibility of climate change. Climate change could affect the biophysical makeup of all parks, to varying degrees, and thus alter the ecosystems which are currently being protected. In Canada it has been determined that the existing National Parks system is simply inadequate to protect park ecosystems from the impacts of climate change (Scott and Suffling 2000). The implication, therefore, is that setting aside protected areas in the North American model may not be sufficient to adequately protect natural areas and their ecological functioning.

### 2.2.2 Responses to the Critiques

Due to the biological and social challenges to an over-reliance upon the North American model of parks there has been a movement toward the creation of protected landscapes which are connected and large in scale (Theberge and Theberge 2002). Such connectivity and scale aim to overcome biological limitations, while

simultaneously accepting that human activities are a component of the landscape. From a connectivity standpoint the two main methods of overcoming such limitations have been the creation of buffers and corridors. From a scale perspective protected areas planning has shifted to a focus on a broader scale.

The use of buffers has been advocated through several models that focus on the region surrounding parks, such as biosphere reserves (UNESCO 1974), multiple-use modules (Noss 1987c), reserve networks (Noss and Cooperrider 1994), and greater park ecosystems (Clark and Harvey 1990). All of these concepts incorporate the notion of core areas, where natural features take precedence over other uses, and buffer areas, where human use is allowed although biodiversity remains the main concern. Such a core/buffer approach increases connectivity by focusing on the surrounding matrix, recognizing that proper management of a multi-use landscape is vital to the health of the core reserve. From a social perspective this buffer further implies that local and indigenous use of the surrounding landscape is legitimate, and not incompatible with conservation objectives.

Besides focusing on a park's surrounding matrix another approach has advocated corridors of nature to connect parks (Janzen 1989). While this idea has been voiced for over forty-five years (Preston 1960) the push continues today through such fields as landscape ecology (Forman and Godron 1986) and conservation biology (Meffe and Carroll 1997), both of which advocate corridors as a method to maintain biodiversity and landscape health. The actual structure of the corridors can be quite creative in practice, involving such landscape features as utility corridors, trails or riparian zones. Even the protection of wetlands along internationally important flyways

is a type of corridor in action (UNESCO 1971). More recent examples of proposed corridors are the Meso-American Corridor, the Yellowstone to Yukon Corridor, and the Algonquin to Adirondack Corridor. All such examples are attempting to create, through landscape-scale planning, paths of contiguous habitat protection by connecting pre-existing natural areas.

While generally espoused as a solution to the island effect, corridors do have several areas of concern. Noss (1987a) has outlined five potential disadvantages of creating or maintaining corridors:

1. The spread of disease, insects, pests, and exotics, and the decrease of genetic variation
2. The spread of fire and abiotic disturbances
3. Hunters, poachers, and predators
4. Compatibility of corridor type and species
5. Cost and conflict

While all of these concerns are quite valid, the reality is that corridors are often simply being maintained, or at the most restored, rather than being created where corridors did not previously exist. Therefore the many potential advantages of corridors likely outweigh any drawbacks that may exist. The advantages, as noted by Noss (1987a), include:

1. Higher migration rates, helping to maintain species numbers and prevent inbreeding
2. Increased foraging area
3. Increased cover to escape from predators
4. A mixture of habitat stages
5. Refugia from large disturbances
6. Social benefits, providing recreation and scenery, while limiting sprawl and pollution impacts



Maintaining corridors also helps where areas have become degraded, by turning an area into one section of a much larger, and hopefully less degraded, network (Prato and Fagre 2005).

In addition to increasing connectivity, protected areas have increased in scale through such related concepts as bioregional (Miller 1996), ecosystem (Slocombe 1998) and landscape-scale protection (Nelson and Sportza 2000). All such methods plan on a scale designated by natural forces, rather than human design, and as such often include areas where human activity occurs.

The cumulative result of the actions to increase both connectivity and scale is that conservation is shifting from a prime reliance upon the North American park model to conservation planning at a larger and more complex scale. Such conservation has a more solid foundation in current understandings of ecology, while also being more accepting of the idea that human use of the landscape is a vital component of a protected areas strategy.

### 2.2.3 The Social and Biological Benefits of Stewardship

While connectivity and scale are desirable from an ecological and social perspective, the question remains of how to facilitate such a comprehensive approach. Over seventy years ago Aldo Leopold, one of the founders of the current conservation movement, was often faced with a similar question: how can we achieve conservation? The answer Leopold gave at that time still holds true today and can serve as a template for examining how to facilitate the new protected areas perspective: we can buy it, legislate it or build it (Flader 2003).

Buying or legislating conservation are two options which rely upon government intervention, ignoring the role that private land can and does play in conservation. The reality is that governments have been unable and/or unwilling to protect all of the nature that new protected area theories demand (Dempsey, Dearden, and Nelson 2002). To begin, governments have decreasing resources that they are able and/or willing to devote to purchasing land for conservation (Brown and Mitchell 1997; Dempsey, Dearden, and Nelson 2002). Further, the current understanding of ecology leaves this option as impractical, regardless of whether or not fiscal resources are an issue. Expanding protected areas to such a connected and broad level involves ecological issues which are beyond the site scale. For example, protecting the ecological service of groundwater recharge often involves landscapes of incredible size. In such cases a large amount of land would have to be purchased to ensure any functional conservation. Since groundwater recharge is only one service out of many, and ecological services are only one conservation function out of many, the end result would be that nearly all land would need to be purchased to achieve the goal of connected and broad conservation. Therefore, expanded public ownership of conservation land is not the only answer.

Government regulation has also often met with failures (Brown and Mitchell 2000). Even if regulation is constructed conscientiously, any form of regulation will turn many landowners off conservation (Mehta and Heinen 2001). This can be especially true when regulation comes from government, rather than organizations with a more local presence (The Canadian Environmental Advisory Council 1991). Finally, regulation cannot cover all damaging practices that a landowner could undertake; at the most it can only prevent the most destructive practices (Gosselin 2003). Therefore, even

if protected areas are designated at the landscape scale, if they involve private land then the support of those landowners is necessary for conservation to occur.

Aldo Leopold dismissed the options of purchasing or legislating conservation, instead focusing on building conservation through the promotion of a 'land ethic'. While Leopold realized the only feasible way to achieve conservation was to build it, his focus was solely on fostering this ethic among citizens. He dismissed using any institutional mechanisms due to the politics of his time, which feared the socialization of property (Flader 2003). Today, however, both options for building conservation are espoused through one common term: stewardship. Any extension of protected areas in scale and connectivity involves looking beyond public space towards private land, and therefore stewardship is an important method by which such expansion can be facilitated (Mitchell and Brown 1998; Dempsey, Dearden, and Nelson 2002).

From a social perspective stewardship is a method which includes people in the protected areas process (as listed in Canadian Environmental Advisory Council 1991). In some instances this inclusion is as basic as the education of landowners, involving general information about ecology, or specific information about the features on their land. Stewardship further involves the direct participation of landowners in protected areas. Such engagement places conservation at the local level, which can foster a sense of belonging and responsibility in regards to the local environment (Cox 1995; Mitchell and Brown 2003).

Stewardship also works through this education and direct action to connect landowners to their natural environment, whether by gaining an appreciation of their land (Moull and Hilts n.d.), or by nurturing a sense of responsibility over the health of

their land (Mitchell and Brown 1998). In addition, stewardship helps to connect landowners to their community which in turn can lead to further cooperation and stewardship efforts (Brown 1998; Hilts 1993). Finally, stewardship accepts and embraces the fact that many landowners, even when involved in stewardship efforts, will continue to use their land for economic purposes (Brown and Mitchell 1991).

From a biological perspective stewardship is a method of overcoming the fragmented landscape created by solely relying upon the traditional North American park model of protected area. To begin, the amount of land that stewardship does protect is substantial. The IUCN (Chape et al. 2003) estimates that there are 18.8 million km<sup>2</sup> of formal protected areas in the world, of which 3.6 million km<sup>2</sup> falls into a category which includes private land protection. While exact figures are unknown for Canada, the amount of private land protection is likely significant (Dempsey, Dearden, and Nelson 2002).

Besides focusing on the amount of private land, the nature of private land is also one of the prime benefits of stewardship. For example, in the Carolinian Life Zone of Ontario a larger percentage of rare plants and birds are found on private land than are found in formal protected areas (Line et al. 2000; McLachlan and Bazely 2003).

Besides critical habitat, stewardship also aids in the expansion of protected areas in scale and connectivity. For example, a study in Costa Rica found that 51% of private protected land exists next to formal protected areas, and the rest is not far away (Langholz 2002). From field observations it seems likely that the same situation holds true for the Carolinian Life Zone, where much private protection occurs on the land

surrounding formal protected areas. In such situations stewardship can help expand protected areas and provide connectivity between existing protected lands.

## 2.3 Stewardship Research

### 2.3.1 Stewardship Implementation

Despite the important role that stewardship plays in landscape-scale protection the implementation of stewardship cannot be assumed. As with any idea the implementation of stewardship must be an active, conscious effort. Such a situation is noted by Brown (1998), one of the foremost authorities on stewardship, who argues that stewardship implementation requires further research.

A critical element for successful stewardship is local support for conservation organizations or for stewardship actions (Dempsey, Dearden, and Nelson 2002). However, many stewardship initiatives have low participation rates (Dedrick et al. 2000; Ryan, Erickson, and De Young 2003). In certain circumstances within the Carolinian Life Zone such low participation is evident. For example, an interviewee of this study who belonged to a woodlot owners association indicated that approximately 40% of woodlot owners in the area do not belong to the association, an organization which promotes sustainable woodlot management initiatives.

In addition, it has been noted that confrontation is likely without landowner support (Hilts, Kirk, and Reid 1986), and indeed in some areas this has occurred. In certain instances the effect of stewardship is that while land is protected, conflict and bitterness towards governments and conservation organizations remain unchanged, or is

even exacerbated (Dudley et al. 1991; Frankie, Mata, and Vinson 2004; Prato and Fagre 2005). Such a situation is evident in the Carolinian region, where it is not uncommon to see ‘No MNR’ signs on rural property (see Figure 2.2). In this way even stewardship which appears successful may sour the possibility of any future gains if landowner support is not an integral part of the process.



**Figure 2.2 Picture of an anti-MNR sign in the Carolinian Life Zone**  
Source: (Knight 2005)

### 2.3.2 Landowner Participation

As a component of stewardship implementation there is a large body of literature which explores landowner participation in stewardship initiatives. Much of this literature consists of two common foci. First, the majority of the research focuses upon single stewardship programs. These programs involve a range of stewardship

objectives, such as non-industrial private forests (Porterfield and Moak 1977; Bourke and Luloff 1994; Nagubadi et al. 1996; Brunson et al. 1996; Hardie and Parks 1996; Schelhas et al. 1997; Egan, Gibson, and Whipkey 2001; Stevens et al. 2002), or landscape-scale conservation (Reading, Clark, and Kellert 1994; Jacobson 2002; Brown and Harris 2005). Second, the majority of the research focuses upon the socioeconomic characteristics of program adopters or non-adopters. The attributes explored in the literature have become relatively standard, and include such factors as age, education level, income level, income percentage from land, and whether land ownership was bought or inherited.

In recent years certain limitations of these two foci have become apparent. To begin, this research often overlooks the stewardship context. A landowner can be approached at various times in their life by a multitude of stewardship programs, due to the number of organizations that practice stewardship, and a lack of co-ordination in the delivery of these stewardship initiatives. In such a context the experiences from one program can affect the experiences of another, and therefore examining participation while attempting to focus on a single stewardship program is problematic.

There is also a concern about the theoretical nature of such research. Several inquiries into participation focus upon a landowners 'willingness to participate' in a stewardship program (Napier, Thraen, and Camboni 1988; Napier, McCarter, and McCarter 1995; Dedrick et al. 2000; Kreuter, Tays, and Conner 2004). As well, there are instances where landowners are unaware of the programs for which they are being interviewed. Brown and Harris (2005) found that only 17% of landowners within the Algonquin to Adirondack corridor were aware of the existence of the corridor-in-

process. Thus, in a sense landowners were not being asked about a specific program, but rather about a theoretical program, one in which they had not participated or had any prior knowledge. In this regard the degree to which answers would correspond to a real situation is unclear.

The usefulness of socioeconomic characteristics has also come into question. Cutting and Cocklin (1992) have accurately noted that such demographics are often contradictory. In fact, these contradictions occur not only between programs, but within the same program focus. For example, Bell et al. (1994) determined that income level is an important factor for determining forest stewardship participation, whereas similar studies (Egan, Gibson, and Whipkey 2001; Stevens et al. 2002) found no correlation between income level and forest stewardship participation. In regards to landscape-scale stewardship Reading et al. (1994) concluded that income level, age, lot size, and income percentage from land all correlated positively to landowner support. However, Jacobson (2002) also studied ecosystem management, and found that none of the four characteristics were the most significant factors for landowner support. While there may be contextual reasons for the contradictory findings, the differences show that demographics cannot be the only factor influencing landowner participation.

### 2.3.3 Landowner Support

In light of the challenges inherent in program-specific research, and the concern that socioeconomics alone do not capture the reasons behind landowner participation, certain researchers have shifted their focus from attributes influencing stewardship participation to landowner attitudes and motivations regarding support for stewardship



(Lynne, Shonkwiler, and Rola 1988; Environics 2000; Jacobson, Abt, and Carter 2000; Environics 2001; Erickson, Ryan, and De Young 2002; Daley et al. 2004). This shift from attributes to attitudes has required an openness to more non-socioeconomic factors. The most comprehensive explanation of landowner support toward stewardship comes from Rickenbach and Reed (2002), who conducted personal interviews with private landowners and found three recurring themes. These three themes encompass the main factors for support which other stewardship literature has noted, and form the basis for this study's research on landowner support for stewardship.

The first theme is that many landowners exhibit a strong stewardship ethic, whether based upon personal, cultural, or religious/spiritual considerations. Most rural landowners value nature, and are sympathetic to environmental issues and concerns (Hilts 1993; Slater 1994; Environics 2001; Ryan, Erickson, and De Young 2003; Brown and Harris 2005). A stewardship ethic also involves feelings of a close connection to the land. Landowners continually express the view that they understand their land better than anybody else (Environics 2000; Rickenbach and Reed 2002). However, this finding is not without its complications. Research has found that while landowners believe they know their land quite well, considerable gaps exist in this knowledge (Environics 2000). One gap involves the function of land, where the actions of landowners may not be as ecologically beneficial as they believe (Ryan, Erickson, and De Young 2003; Dutcher et al. 2004). A knowledge gap also exists in regards to the societal value of land. A survey of rural landowners in Ontario found that 67% felt that there were not any natural features on their land that would be of interest to others (Environics 2001). While land surveys did not accompany this written survey, it is

likely that natural features do exist on the land of many landowners, but not at the scale for which landowners believe others would be interested. This gap in landowner knowledge of conservation value could conceivably have several consequences, affecting beliefs regarding the level of protection needed and action required, and the perceived consequences of inaction. Thus understanding of the land is a complex aspect of landowner support for stewardship.

Rickenbach and Reed (2002) further determined that, regardless of stewardship ethic, on-the-ground constraints have an effect on stewardship support. The one constraint most readily mentioned by landowners is the cost of undertaking stewardship efforts (Environics 2001). Interestingly, certain research has found the opposite, that economics have little influence on landowner support (Napier, Tucker, and McCarter 2000; Ryan, Erickson, and De Young 2003). The reason for these contradictions likely involves many factors, such as the amount of financial support being offered, the financial situation of the landowner and the cost of undertaking certain stewardship efforts. The other constraint most often noted is that of the time and effort that stewardship requires (Environics 2001; Brown and Harris 2005). From this perspective stewardship goals may simply be viewed as unrealistic, and programs that ignore these realities can foster landowner alienation (Schelhas et al. 1997).

It should be noted that the relationship between the articulation of a stewardship ethic, and the expression of that ethic in action, is one of debate. While some research has found a tenuous relationship between attitudes and behaviour (Lovejoy and Napier 1986; Napier, Thraen, and Camboni 1988; Egan and Jones 1993; Dutcher et al. 2004), other research has found a strong relationship between the two (DeYoung 1993; Ryan,

Erickson, and De Young 2003). In instances where the two do not coincide one possible reason may be inappropriate program mechanisms, rather than landowners lacking a pre-existing stewardship disposition (Cutting and Cocklin 1992), and therefore a stewardship ethic remains a possible factor influencing landowner support of stewardship.

The second recurring theme that influences stewardship support amongst landowners is that of property rights. A nearly universal finding in the literature is that landowners dislike any action which might lessen their control over their land. In some instances this is expressed in terms of fear over loss of privacy on their land (Morris, Mills, and Crawford 2000; Shogren 2000). Other landowners worry about restrictions on the use of their land, whether in the present (Napier, Thraen, and Camboni 1988; Brown and Harris 2005), or for their children and grandchildren (Dedrick et al. 2000). The concern is also expressed that regulation is insulting, as it ignores the stewardship initiatives that landowners are already undertaking (Slater 1994; Shogren 2000). Indeed, Hilts, Kirk and Reid (1986) note that the strength of stewardship is apparent in its voluntary nature, which allows conservation to build on existing landowner pride rather than conflict with landowners through regulation.

The final theme presented by Rickenbach and Reed (2002) is that of action orientation, referring to the bureaucratic nature of most stewardship programs and landowner preference for more on-the-ground work. While for the authors 'action' refers to the bureaucratic actions of watershed councils, wariness regarding bureaucracy in general is found in most landowner support literature.

A multitude of studies have noted the desire amongst landowners for additional information about stewardship schemes (Bell, Roberts, and English 1994; Hardie and Parks 1996; Klupfel 2000; Dedrick et al. 2000; Environics 2001; Wilson and Hart 2001), as well as more technical ecological and geological information about their land (Hilts 1994; VanOsch 1996; Dutcher et al. 2004). It is also often found that more appropriate mechanisms are needed by which to distribute information (Purvis et al. 1989; Cutting and Cocklin 1992; Inforesults 1993; Klupfel 2000). Such mechanisms involve not only the format of information but also the level of difficulty in understanding information, where landowners may not clearly see the benefit of stewardship actions (Wilson and Hart 2001), or may inaccurately think they are ineligible for stewardship programs (Wilson 1996). Besides such possible confusion there is also concern that information is not targeted, with no distinction being made between the various types of landowners and their interest level in the schemes (Daley et al. 2004). Thus it has been suggested that varying aspects of stewardship should be promoted to attract the many types and interests of landowners (Klupfel 2000).

Bureaucracy not only relates to how stewardship is implemented, but who does the implementing. Almost all literature notes a strong degree of mistrust amongst landowners for programs run by the state (Endicott 1993; Environics 2000; Daley et al. 2004; Dutcher et al. 2004; Brown and Harris 2005). In fact, a 2001 study of rural Ontario landowners found that only 26% felt comfortable with environmental programs administered by government (Environics 2001). The preference is for more local groups to administer environmental programs, and for organizations more closely involved on the land to become involved (Environics 2000; Stevens et al. 2002; Ryan and Walker

2003). As such there appears to be a strong desire and support for face-to-face communication by conservation groups (Hilts 1994; Klupfel 2000; Morris, Mills, and Crawford 2000; Daley et al. 2004). Interestingly, there is also debate regarding whether or not a degree of peer pressure is at play, where landowners will join only after others have joined; some literature has found this to be the case (Bultena and Hoiberg 1983; Dedrick et al. 2000; Klupfel 2000), whereas other literature has found neighbour actions have little effect (Wilson 1996).

#### 2.4 Literature Review Summary

Stewardship, in relation to protected areas, involves “efforts to create, nurture and enable responsibility in landowners and resource users to manage and protect land and natural resources” (Brown and Mitchell 1991, pg. 173). The on-the-ground practice of stewardship involves not only landowners but the aid of NGOs and government organizations acting through a variety of stewardship tools. The specific tools used vary with stewardship context, although they range from informal methods of education and recognition to more formal methods of conservation easements and land acquisition.

The importance of stewardship has become apparent with the changing form of protected areas. The traditional North American model of park has tended to involve public land and exclude human use. An over-reliance upon such parks has been criticized, as it excludes humans from a conservation process that intrinsically involves humans, and fails to adequately protect ecosystems. The solution to these critiques has been the movement to protected areas that are connected, through such mechanisms as buffers and corridors, and large in scale, through broad-scale conceptions of

conservation land. To achieve such connectivity and scale conservation has looked beyond purchasing land or regulating land use towards stewardship. Stewardship is a conservation tool that can overcome at least some limitations of an over-reliance on the North American park model, by including people in the protection process and by filling in the fragmented landscape.

The on-the-ground implementation of stewardship, however, has been uneven. While stewardship outcomes can achieve increased protection, the effect of such achievement can be a loss of landowner support for stewardship. To study implementation much research has focused upon stewardship participation, involving single programs and socioeconomic considerations. Due to limitations of this approach recent research has shifted to the examination of landowner support for stewardship. The literature on support reveals three broad themes. First, landowners exhibit a stewardship ethic, although this may be ecologically flawed, may not translate into action, and may face on-the-ground constraints. Second, landowners fear a loss of control and privacy over their land through regulation, a situation which they feel does not acknowledge their pre-existing stewardship efforts. Finally, landowners often find stewardship programs to be overly bureaucratic. This can involve both how programs are implemented (an absence of technical information, the use of inappropriate and complicated formats and a lack of targeted information), as well as who implements the programs (a distrust of government, a preference for personal communication from local organizations and possibly being influenced by the actions of others).

### 3.0 Methodology

This chapter outlines the methodology used to pursue the thesis objectives (as noted in Section 1.3.1). The first section describes the reasoning behind the selection of the Carolinian Life Zone study site. It also discusses the case study approach, and the criteria used to select the case study sites of Point Pelee, Rondeau and Long Point. Section two describes the process involved in selecting the data collection method. The ‘method design’ sub-section outlines the reasoning by which personal interviews were chosen as the preferred data production method, and the interview guide as the preferred interview strategy. The ‘recruitment design’ sub-section outlines the criteria by which interviewees were chosen, and the snowball sampling method used to identify potential interviewees. Finally the ‘interviews’ sub-section summarizes the characteristics of the interviews, such as the number pursued, the response rate and interviewee characteristics. Section three describes the coding method by which the data was analysed. Lastly, section four highlights the limitations found when the chosen methodology was used in practice.

#### 3.1 The Study Site and Case Study Approach

It was decided that studying landowner support for stewardship in Ontario as a whole would be too large of a study area. The area needed to meet the realities of financial and time constraints, as this study received no formal funding and was in partial fulfillment of a Master of Environmental Studies degree. In addition, there was a concern that a large study area would require data collection techniques that might not reveal personal aspects of stewardship. As noted in Section 1.2, with stewardship

support research there is a need to move beyond program participation/non-participation, as landowners may be involved in multiple programs which influence their view of stewardship, or they may be involved in no programs yet still be affected by stewardship efforts. A more encompassing focus would be to examine the personal experiences and opinions that landowners have of stewardship, and the concern was that a large study site would not readily enable such data collection.

It was decided therefore that the Carolinian Life Zone most readily addressed these two concerns. Its location in South-western Ontario meant that financial and time constraints would be less onerous, as the site is near the University of Waterloo, and that research could begin in the winter without excessive weather complications. The location also ensured that data collection could be done through personal contact with landowners. The Carolinian Life Zone site also had several other beneficial features. To begin, it is an area of tremendous stewardship activity by both government and NGOs. In addition, the possibility of stewardship continuing into the future is highly likely, due to the large degree of human modification of the landscape, the tremendous numbers of Species at Risk found in the area, and the prevalence of privately owned land (all discussed in greater detail in Section 1.1).

It was further determined that the entire Carolinian Life Zone remained too large of an area to study landowner support for stewardship. As such it was decided to utilize a case study method (Yin 1989). Case study research involves the study of a case, or cases, in detail, allowing for themes to be compared and contrasted between sites (Yin 1989). This met the third thesis objective (Section 1.3.1), which is to compare and contrast stewardship support factors amongst multiple geographical sites. It was

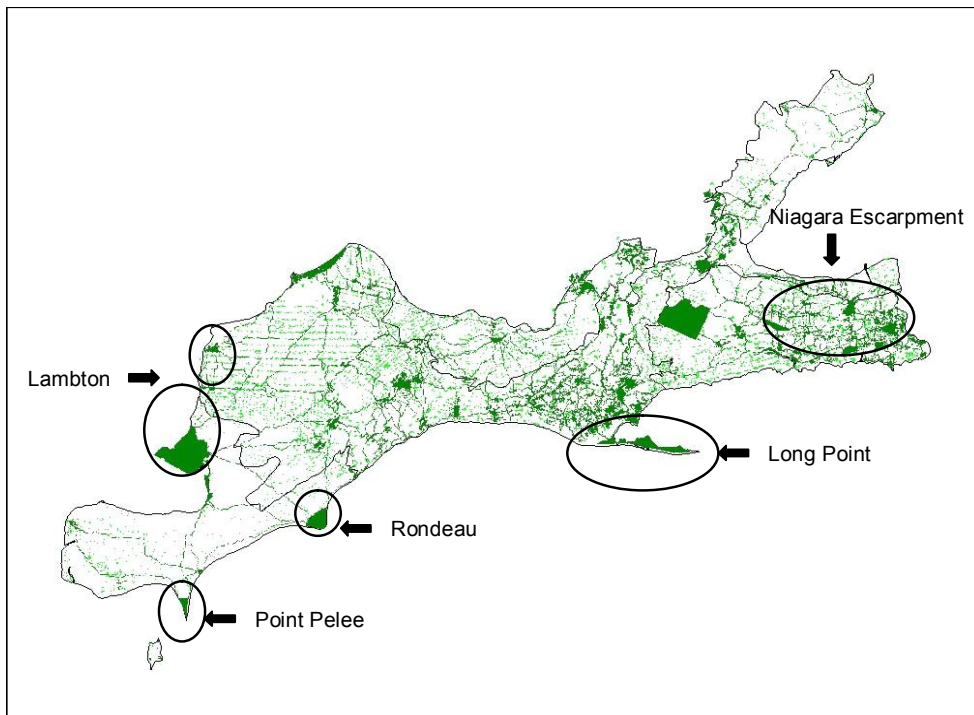


also hoped that by examining multiple case study sites a degree of generalization might be possible for the Carolinian Life Zone as a whole.

Three criteria were used in selecting case study sites. First, the areas needed comparable biological and social contexts so that any differences in landowner support were likely due to individual landowner opinions and experiences. The concern was that areas with completely different natural or institutional settings could produce results which were not comparable between sites. Second, to capture landowners beyond the realm of participation/non-participation the areas needed to be sites of active stewardship, or where stewardship would likely play an important role in the future. Finally, the areas needed to express a range of landowner support. The hope was that by choosing areas known to contain a variety of responses to stewardship, rather than mainly positive or mainly negative experiences, the case study sites would be reflective of landowner support in the Carolinian Life Zone as a whole.

Through speaking with stewardship practitioners with knowledge of the Carolinian Life Zone five possible sites were considered: the Point Pelee area of Essex County, various areas in Lambton County, the Rondeau area of Chatham-Kent County, the Long Point area of Norfolk County, and the Escarpment lands of the Regional Municipality of Niagara (see Figure 3.1). While all sites are areas of active stewardship, as seen by the number of organizations undertaking stewardship activities, and all appeared to demonstrate a range of support stewardship, the Point Pelee, Rondeau, and Long Point areas were most similar in terms of natural and human contexts (Russell et al. 2000). All three sites have quite similar geological and biological characteristics, and contain many Species at Risk. They are also sites influenced by similar stewardship

actors, and contain large amounts of private land (all discussed in greater detail in Section 1.3.2).



**Figure 3.1 Candidate Case Study Sites with the Carolinian Life Zone**  
Source: (Adapted from Carolinian Canada Coalition 2004)

In regards to the third criterion, from speaking with stewardship practitioners it seemed likely that the three selected sites would provide a range of responses to stewardship, with greater landowner discontent in the Point Pelee and Rondeau areas, and more landowner cooperation within the Long Point area. Once data collection began it was found that this presumption did hold true, although landowner support also varied greatly within each case study site.

## 3.2 Data Collection

### 3.2.1 Method Design

In deciding the best research method by which to explore landowner support for stewardship three criteria were used. First, the method needed to be able to explore support for stewardship through a landowners' experience of and opinions on stewardship. Second, the landowner needed to feel comfortable discussing sensitive aspects of that experience, such as the financial cost of programs or their ethics towards nature. Third, the method needed to allow exploration of landowner support factors which are not identified or stressed in the academic literature.

It was decided that personal interviews were the best method to satisfy the first two criteria. Personal interviews allow for exploration of experiences and opinions in ways that other research methods do not (Dunn 2000). They allow for conversations in which personal experience is explored, rather than discussing a subject in broad terms. They also allow for opinions to be expressed beyond the confines of how others may judge them, and they can create a sense of connection in which the interviewee feels comfortable discussing opinions and aspects of stewardship which may be of a sensitive nature. For these reasons personal interviews have also tended to be the chosen research method in existing landowner support literature (such as Rickenbach and Reed 2002; Dutcher et al. 2004).

To meet the third criterion the interview strategy of 'semi-structured' was chosen over that of 'structured' or 'unstructured' (Dunn 2000). The semi-structured interview method is a hybrid strategy, imposing a certain amount of order while

allowing the interview to travel into unanticipated realms. As such answers would not be restricted by the findings of previous research. The specific format of the semi-structured interviews was that of an interview guide, versus the alternative of structured open-ended questions (Patton 1990). An interview guide format lists general themes, but not the wording by which questions are to be asked about those themes. In contrast, the structured open-ended format lists specific questions while allowing for any answer to be given.

The following is the interview guide employed for this study:

### 1. Stewardship Ethic

- A: Do they express this?  
Is it based upon personal ethics, societal ethics, or religiousness/spirituality?
- B: Do they express that they understanding the land better than others?  
- Are there gaps in this knowledge?  
- Are their actions as ecologically beneficial as they claim?  
- Do they see the societal value of their land?  
- What do they think of the existing protection level, and is action required?  
- Do they have opinions on inaction?
- C: Do they feel economic constraints?  
Do they feel time/effort constraints?  
Do they feel programs are realistic?
- D: If they state a stewardship ethic, is it expressed in behaviour?

### 2. Property Rights Concerns

- A: Do they express a concern over a loss of control over their land?  
Do they fear loss of privacy?  
Do they fear restrictions on their use of the land?  
Do they express a lack of acknowledgement for the actions they undertake?

### 3. Bureaucracy

- A: Do they express a lack of information regarding conservation organizations or stewardship programs?  
Do they express a lack of technical information?

- B: Is information distributed through appropriate formats?  
Is information complicated?  
Is information targeted enough for their needs?
- C: Do they mistrust state programs?  
Do they support local/face-to-face organizations?  
Are they influenced by the actions of their neighbours?

As can be seen, the general themes and more specific sub-themes which have been found in the academic literature are listed, yet the questions by which to explore these themes are not. While this interview strategy requires an aptitude at question formulation, which was a disadvantage given the interviewer's inexperience, it provided a necessary degree of flexibility (Dunn 2000). As a result of studying multiple case study sites it was expected that landowner experience of stewardship would involve many types of landowners in a variety of contexts. Thus, developing predetermined question wording would be impractical as it might alienate landowners when questions were not specific to their situation, and it would likely hinder any flow of conversation meant to elicit personal or original opinions. In practice this was found to be true, as access to the personal opinions of landowners was most readily gained by discussing their specific area of interest or stewardship issue.

The order in which the themes were explored was also not predetermined. Instead the ordering followed what Dunn (2000) calls a hybrid approach, in which interviews begin with non-threatening questions in order to build rapport, gradually move to more reflective topics, and eventually explore more personal themes. A common approach for this study was to begin by asking landowners to talk about their land, its size, and the natural features it contains. It was only near the end of the interviews that questions would be asked about financial issues, or ethics regarding

nature. It was hoped that this conversational method (Longhurst 2003) might allow greater exploration of themes of a personal nature, and might explore themes not reflected in landowner support literature.

### 3.2.2 Recruitment Design

There were two conditions for the selection of interviewees. First, they needed to be owners of land within the case study sites. The purpose was not to exclude landowners based on participation/non-participation in stewardship programs, or to exclude those whose land contained few natural features yet existed in an area influenced by stewardship efforts. As such landowners could own property that either contained natural features, or was surrounded by land with natural features. They could therefore also be landowners of a farm, cottage, or permanent home. In practice an attempt was made to approach landowners who lived in landscapes with a large degree of natural features, so that they would likely have been involved with formal stewardship efforts, or would likely be affected by future stewardship efforts. The outcome of such flexibility was that all landowners interviewed lived within approximately five kilometres of PPNP, RPP, or LPPP.

Second, landowners needed to be willing to discuss their experiences of and opinions on stewardship. The interview format was not based on structured questions and thus landowners needed to be open to having a conversation about their land. In practice there were three instances in which interviewees were unwilling to give more than ‘yes’/‘no’ answers to the questions asked, and in such circumstances the interview was politely brought to a conclusion, and another interviewee was sought.

The method used to recruit landowners was that of snowball sampling (Patton 1990), an approach that builds a study sample by asking interviewees to identify others who might be of interest to the research. For this specific research initial contact was attempted with a variety of conservation organizations at each case study site, asking for their assistance in identifying landowners who might be willing to be interviewed. Roughly four-fifths of all organizations indicated they did not think they could be of assistance, or they did not return messages. From the organizations willing to be of assistance names of landowners were gathered or contact information for this study was given to landowners. Once contacted landowners were informed of the content and scope of the study and interview dates and times were set. All interviewees either signed a consent form, or verbally agreed to the consent form and then were mailed a hard copy for their signature and return. All landowners who were interviewed were asked to identify other landowners who may be of interest to the study. As this progression continued in each case study site a process occurred which Patton (1990) describes as divergence and convergence. Initially a wide variety of names were given, but as the process unfolded certain names began to appear more often. It was in this manner that the prime landowners and those who were involved with or affected by stewardship were identified.

### 3.2.3 Interviews

The specific number of interviews pursued was a matter which required revision. Initially it was assumed that 10-15 interviews from each case study site would be necessary, for a total of 30-45 interviews. Similar totals were also used by previous

literature on landowner support for stewardship (such as Rickenbach and Reed 2002). Once interviewing began it became apparent that predetermined interview maximums were not necessary. In all case study sites interviews began to reveal no significant additional information before the maximum goal of 15 was reached. Patton (1990) notes that it is the richness of interviews in terms of validity, meaningfulness, and insights that is important, not the exact number. Therefore it was decided to pursue interviews until this richness was no longer reflected in ideas and information (Dutcher et al. 2004). As a result a minimum number of interviews in total was set (as suggested by Patton 1990), rather than pursuing a maximum range of interviews which did not have richness. The revised goal became a minimum of 10 interviews per site.

Interviews were conducted with landowners in the Point Pelee, Rondeau, and Long Point areas of the Carolinian Life Zone over a six month period (January 2006 - June 2006). No significant events occurred during this timeframe which would have greatly influenced landowner perceptions of stewardship. In total 34 interviews were used for the purpose of this study: 12 at Point Pelee, 12 at Rondeau and 10 at Long Point. While an exact response rate was not recorded the estimated rate was likely 70% or higher, as landowners were recommended to be interviewed by people they knew. However, this number is likely artificially high due to recent privacy legislation in Ontario. Under the new legislation organizations cannot give customer names or phone numbers without express consent. The result for this study was that organizations had to first contact landowners and only those interested in the study were referred. As such this study is not aware, and cannot be aware, of the number of landowners who may have declined to participate. Of the landowners that are known to have declined



interview requests the main group were farmers. While the specific reasons for declining an interview likely varied, it was found that even farmers who agreed to be interviewed were quite busy with seasonal farm operations.

The length of interviews ranged from 20 minutes to over 1 hour and 20 minutes, with an average length of approximately 35 minutes. The preference was for interviews to be audio-recorded for accuracy and to allow the interviewer to concentrate on the conversation rather than note taking (Kitchin and Tate 2000). In practice only 17 of the interviews were audio-recorded. Some interviewees were uncomfortable being audio-recorded and asked not to be. In other instances interviews were conducted in the field, resulting in noise and movement which made audio-recording infeasible. For others it was simply sensed that a formal interview would not be welcome. In such instances landowners were approached in terms of 'asking a few questions about their land.' For the interviews that were not audio-recorded notes were taken by hand.

In all cases interviewees were given copies of the interview transcript, to check for accuracy, change aspects with which they were not comfortable, and to give final authorisation. The preference was for face-to-face interviews, to increase the personal nature of the interview and to gain insight through aspects of non-verbal communication. Approximately one third of the interviews were conducted over the telephone, as interviewees owned their year-round home in areas too far away from the interviewer to feasibly meet in person.

Specific characteristics of landowners were not sought, but several were readily apparent. Of the 34 landowners interviewed 22 owned non-farm residences. This land included seasonal cottages, cottages that served as year-round permanent residences

and rural homes. While all of these landowners lived in landscapes undergoing stewardship initiatives the number of natural features present on each specific property varied, with few for the cottagers, and greater numbers for those in rural homes. These landowners often participated in professional career sectors, such as engineering or business, or were retired from such employment. Approximately half likely had some degree of post-secondary education. The remaining 12 landowners were active farmers whose land tended to contain the greatest amount of natural features. These landowners often farmed a large area of land, including parcels of property throughout the region. The level of post-secondary education was difficult to surmise, although several did indicate attending agricultural courses at the University of Guelph. Average landowner age was likely 50 and older, with many stating they were semi-retired or retired.

### 3.3 Data Analysis

The content of the interview transcripts was analysed using coding (Cope 2003). Coding can be realized through a variety of methods, such as grounded theory (Strauss and Corban 1990) or the interpretive approach (Patton 1990). Regardless of the method used, all coding involves the tagging of key words or themes in order to identify categories and patterns in a text (Cope 2003). For the purpose of this research themes were tagged, as words were perceived as too limited in their ability to identify the experiences and opinions of landowners. In addition, while software programs exist that can analyse qualitative data by themes (Peace 2000) they often require considerable training. The relatively small number of interviews meant that coding could occur as accurately, though perhaps not as quickly, through hand-written means.

While there is no standard method for coding, and coding is an iterative process (Kitchin and Tate 2000), a general pattern was followed to ensure a rigorous analysis of the data content. This pattern followed the procedures of Dey (1993) and Strauss (1987), both of which contain considerable overlap. To begin, themes were identified, including those noted in the academic literature and which formed the content of the interview guide, and additional themes brought forth by landowners. Next, patterns within the themes were identified by categorizing the responses given to each theme. Finally, patterns across themes were identified with the aid of a matrix, as suggested by Patton (1990). Appendices A, B and C provide the matrixes used for each case study site, indicating the themes, sub-themes, and those indicating an agreement (indicated by an 'x'), or a disagreement (indicated by an 'n') with the presumptions found in the literature or noted by other interviewees.

### 3.4 Methodological Limitations

It is possible that errors exist in this study due to the semi-structured nature of the interviews. The freedom that interviewees were allowed when answering questions sometimes meant that certain questions were never directly answered. This error was likely due to the inexperience of the interviewer, rather than any limitations of the interviewees. Therefore while numbers and percentages are used in Section 4 of this study while presenting the interview findings, it cannot be said that unexplored themes are unimportant to landowners. All that can be known is that themes not discussed by landowners were not at the top of their concerns when the interview was taking place.

The semi-structured interviews also meant that some answers required a degree of interpretation. For instance, it was common that questions of internal motivations for stewardship were answered by recalling pleasant memories of enjoying nature, rather than by directly discussing stewardship ethics. While the meanings behind such memories seem obvious any interpretation on behalf of the interviewee brings about a possibility of error.

A certain amount of sample bias might also exist in this study. Throughout the interview process four people turned down the request for an interview stating that their relationships with their local conservation organizations, and their opinions of stewardship efforts, were quite congenial. Thus, landowners who had a source of grievance toward stewardship efforts were likely more willing to be interviewed. It was also evident that relationships of distrust and discontent existed more prevalently in areas where stewardship required re-naturalization, rather than protecting the nature that already existed. These findings likely explain why it was easier to locate interviewees in the Point Pelee and Rondeau case study areas than it was in the Long Point region.

It was also the case that non-farm landowners were more willing to be interviewed than were farm landowners. In many instances it seemed that farm landowners had considerable mistrust towards organizations that tried to influence how they used their land and thus they were leery of talking to somebody who wanted to explore their relationship with these organizations. It was also the case that most farm landowners were busy farming, while many non-farm landowners were retired and thus had more available time.

Finally, a degree of gender bias likely exists in the interview sample. Only five of the interviewees were women. In many instances this is simply a reflection of the landowners being men who did not live with a female partner. However, in circumstances where male landowners were in a relationship with a female it was rare for the woman to be interviewed. Often the woman showed no interest in the subject and would pass the interview request to their male partner who did have an interest. In a few cases the man would take control of the interview, providing the interviewee with no avenue to inquire about the opinions of their female partner.

## 4.0 Findings and Discussion

This chapter presents the findings of 34 interviews conducted in three case study sites: Point Pelee, Rondeau, and Long Point. All of the results are presented by theme as noted in the academic literature on landowner support for stewardship, and as organized in the interview guide (presented in Section 3.2.1). Matrix summaries of the interview responses for each case study site are provided in Appendices A, B, and C for reference. It should be noted that the following interview results avoid any direct quotations attributed to a specific case study site. As all case study sites remain enmeshed in the stewardship process the goal of such caution is to avoid any interference which may, in certain cases, exacerbate already strained relationships. To further increase anonymity each interview was numbered randomly, and it is this number that appears at the end of each quote rather than any reference to the case site or the specific landowner. It should also be noted that the majority of findings comparable between sites are expressed using percentages, as the number of interviews differed between sites and thus the use of strict numbers could be misleading.

### 4.1 Stewardship Ethic

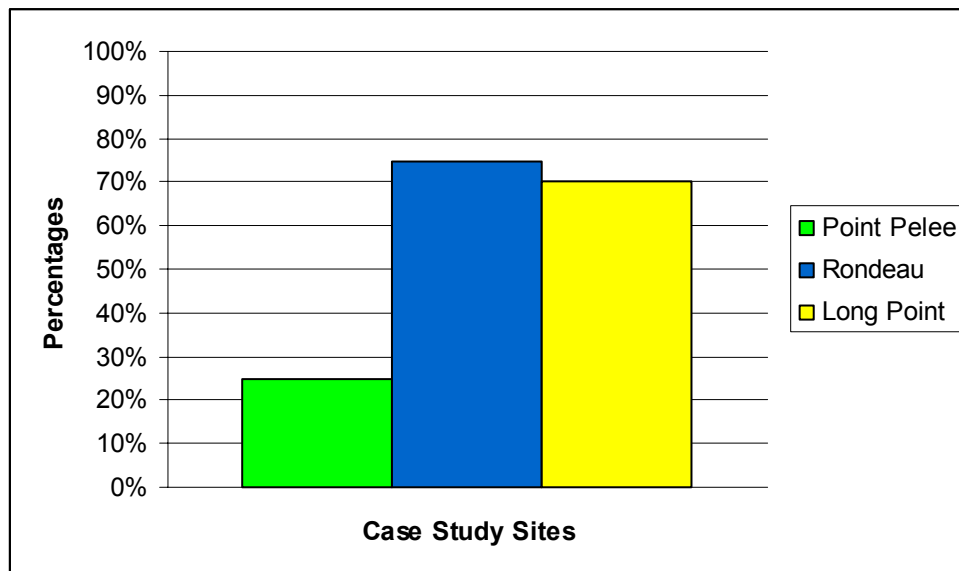
#### 4.1.1 Expression of a Stewardship Ethic

Previous research on landowner support for stewardship has determined that many landowners express a strong stewardship ethic and this study is no exception. Eighty-eight percent of landowners expressed a stewardship ethic, although the manner in which it was expressed varied greatly.

Seventy-five percent of farming landowners grew up in a household which valued nature and from which they learned about the importance of natural features. For a few this meant having a father who was active in a conservation organization. In other cases it was simply a matter of growing up in a household where natural features, most often woodlots, existed and were maintained. For all such cases it was not mentioned that an environmental ethic was actively taught in the family or that values were expressed in terms of ecology. Any learning about the proper way to interact with nature was done through observation, not through formal teaching. As one landowner expressed “I was raised on [my father’s] philosophy that you needed to keep trees, a certain percentage of your land you needed to keep in trees, for the good of the earth. And, so, he didn’t teach me any sophisticated scientific stuff. It was all just pretty basic stuff.”(37)

All non-farm landowners who discussed the role that nature played in their childhood spoke of the recreational role of nature. These landowners had pleasant memories of travelling to parks for day trips, or for camping, or of spending time at a cottage. It is interesting to note that all of these landowners eventually purchased property in the areas where their pleasant childhood memories occurred. One landowner explained that living in the region where you were raised is “like any other place where you grow up, if you have good memories of it you tend to gravitate back to it.”(9) Such a sentiment was expressed by most other non-farm landowners. Such a finding presents the possibility that an appreciation of nature learned in childhood has continued into adulthood by drawing people back to the natural landscape.

Few landowners who discussed enjoying and/or learning about nature in their childhood lived in the Point Pelee case study site (Figure 4.1). This finding reflects that other factors were at play, as 50% expressed an ethic through other means (to be discussed later in this section). This finding also reflects the nature of land ownership in the region. Seventy-five percent of interviewees in the Point Pelee area are non-farm landowners. For those who own cottages it was typical that the owning of property in the area was a retirement goal, with their prior residence being the City of Windsor. The majority of those who owned other types of non-farm rural properties lived in the area for employment. In both cases any childhood involvement with nature was not the most important factor in the landowners' decision to live in the region.



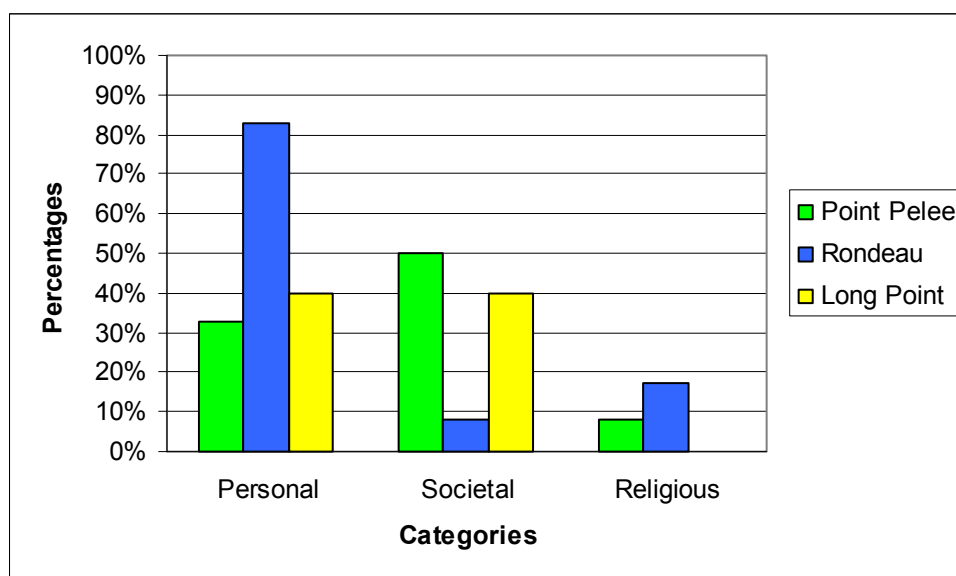
**Figure 4.1 Landowners Expressing a Childhood Connection to a Stewardship Ethic**

The expression of a stewardship ethic through personal, societal, or religious values was also prevalent (76% of landowners), just as research on landowner support



for stewardship has suggested. The exact number of interviewees indicating these values was more than those who indicated childhood influences (59% of landowners). This proportional difference reflects the diversity of values that influence a stewardship ethic besides childhood.

A majority of landowners (69%) who expressed an ethic through personal, societal or religious values expressed this ethic through personal values (Figure 4.2).



**Figure 4.2 Landowners Expressing Personal, Societal and/or Religious Ethics**

For 44% these values were the enjoyment that they could share with their children or grandchildren through exploring nature. For some this was expressed through their own personal enjoyment at sharing the nature found on their land. In other cases it was the enjoyment, and the importance, of teaching children about nature. One elderly farmer described his resistance to removing his hedgerows, when other farmers had taken them out in order to expand their cultivated land. His justification was not agricultural, but so “I could show them [my grandchildren] which tree was which. They didn’t have to go

to a park to see what a tree was.”(31) Another interviewee described the more passive learning that comes from children enjoying nature, explaining “we wanted them to be able to go out there, and enjoy it, and learn.”(49)

A slightly larger number of landowners expressing a personal ethic expressed it in terms of their own relationship with nature (56%). While in all such cases it seems that landowners are drawn to nature for the personal enjoyment it brings, the language used varied. Some mentioned the aesthetic enjoyment of nature, expressing such sentiments as “it’s a beautiful, beautiful place.”(9) Others described loving nature, and desiring to have nature as a part of their land and their life. One landowner who purchased his land to retire expressed a sentiment that “I mean I really love it out here, I really do. It’s the perfect place for me at my age, and I love nature.”(53) Others described the recreational role of nature. One landowner expressly stated the role that recreation played in her decision to purchase her property, saying that “we started going on a regular basis, and thoroughly loved ... the hiking trails and the biking.”(59)

It is also interesting to note that the expression of personal ethics for children, and for landowners themselves, is present at each case study site, and amongst both farmers and non-farmers. The equal presence of the value demonstrates the personal significance that landowners place on nature. This equal presence could be beneficial for stewardship, as it likely indicates a pre-existing disposition amongst landowners towards nature, and to valuing natural features as part of the landscape and part of everyday life. The only differences between the sites were that the numbers expressing personal ethics were much higher at Rondeau (see Figure 4.2). The greater presence of this ethic at Rondeau likely reflects the recreational aspect of nature in that area, in that

people move to the region specifically to include nature in their lives by living within, or near, the provincial park.

Slightly fewer landowners (42%) who expressed an ethic in personal, societal, or religious terms declared that ethic in terms of the societal benefits that nature contains. Thus stewardship can rely partially upon altruistic motivations for the conservation of nature, although less so than on the direct personal benefits of nature. The specific manner in which these values were described varied greatly. Some discussed the importance of nature for the future of humanity, implying that there are not enough natural areas protected and that the human race cannot survive without nature. As one landowner summarized, "I'll support anything to keep our environment safe, because that's our future."(59) Others described the more immediate benefits that protecting nature brings to their neighbours, the surrounding countryside, the country as a whole, and to the public in general. A landowner who was describing the need for more protected areas stated that "The more that is available to the public the better."(53) A similar sentiment was expressed regarding protected areas, that "We don't have enough of them."(21) One landowner even explicitly argued that ethics impel protection of natural features for the benefit of society. He described his protection of natural features as derived from "the ethical need for us to keep trees, to keep part of the land in forest as protection."(37)

An interesting contradiction can be seen in these findings on societal value. Sixty-four percent of those expressing a societal justification for a stewardship ethic are non-farmers. However, in Rondeau, the region in which all interviewees are non-farmers, only one landowner indicated societal values as being of importance. The

explanation for this seeming contradiction likely has to do with property right concerns. Farmers may be more hesitant to declare the societal value of nature for fear that it opens the door to greater interference on their land. Similarly, many of the non-farmers interviewed in the Rondeau area owned cottages within the actual park boundary, and there is much concern from these landowners regarding the possibility of park officials allowing their current property leases to expire. In both cases it seems that concerns over outside influences on land override any predisposition which may exist towards acknowledging societal claims to nature.

As a final value, only 11% of landowners expressing an ethic through personal, societal, or religious values expressed the ethic in religious terms (Figure 4.2). One quite religious landowner described exploring nature as entering “a beautiful place where I can go and immerse myself in the beautiful church that God built.”(86) A different landowner expressed a similar sentiment regarding where he lives, stating that “This is God’s country down here.”(2) Thus in both instances nature is equated with the realm of God. From a slightly different perspective one landowner described being in nature as bringing him closer to God, stating that in nature he is “at one with God.”(86)

It is difficult to assess such religious comments. Specific questions were never asked about stewardship ethics, but rather the subject was broached in broad terms. Thus the fact that more landowners did not mention religion may be a result of not specifically being asked. It could also be the case that the other landowners were not as religious, or not religious at all. On the other hand, for many landowners religion could have been expressed in a spiritual manner, and thus come across as comments about loving nature, or wanting to be near nature. All that is certain is that overt expressions

of religious values were not prevalent amongst landowners at any of the three case study sites.

Finally, while 88% of landowners expressed a stewardship ethic through some manner, that also means that 12% expressed no stewardship ethic at all. It is interesting that 75% of those who did not express an ethic both live in the Point Pelee area and are non-farmers. Such a finding seems unlikely, as non-farmers who move to the Point Pelee area seem to have moved to some degree due to the closeness of PPNP. A possible explanation is simply the nature of the interview. All three interviewees approached the interview in a very professional manner, and thus the interviewer found it difficult to get them to discuss more personal aspects of stewardship. As such it seems likely that an ethic may exist, but that it was simply not expressed to the interviewer.

#### 4.1.2 Understanding Nature

Existing research on stewardship support indicates that while a stewardship ethic might be prevalent, many of those same landowners believe they know the land, and most specifically their own land, better than anybody else. This finding was generally supported by evidence from the interviews, although the expression of this enhanced understanding of nature was not straightforward.

At Point Pelee and Rondeau 75% of landowners expressed doubt regarding the knowledge that conservation organizations have of local ecology and landowner impacts on the environment. One cottager summarized the shared view of most, that his actions have “minimal damage to the environment, despite what you might hear about

or read from various people.”(13) Another landowner expressed a similar sentiment, that organizations “might assume that that’s the way it is, but it’s not.”(31) Thus the finding that landowners think they know the land better than others appears to be supported in this research.

In both of these case study areas landowners face pressure to restore the natural landscape, rather than pressure to maintain what already exists (as discussed in Section 1.3.2). Therefore, in such areas of active re-naturalization there appears to be a higher degree of mistrust of conservation organizations regarding their knowledge of the local environment and the role that local landowners play. Such an analysis is supported by examining the Long Point case study site. Long Point contains the greatest amount of natural area, such as woodlots and wetlands, of the three case study sites and only 20% of the interviewees there expressed the opinion that they know their land better than others. In fact, even in those few cases the greater understanding was expressed through refusals to attend workshops to learn about the ecology of their land, rather than by overtly declaring that others knowledge of the land was not at the same level.

By this measure it seems likely that landowners at Point Pelee and Rondeau are influenced by their specific contexts. It once again appears that landowners faced with re-naturalization pressure may be unable to separate their own personal interests from their analysis of the state of the environment. It also demonstrates that in such situations landowners are more willing to accept their own interpretations regarding the environment than to trust the findings of local conservation organizations.

Along with the belief that landowners understand their land better than others, the academic literature has further determined that landowners may be incorrect and

their understanding may include ecological gaps of varying degrees. This study found such a claim difficult to substantiate. Only 35% of all interviewees showed any evidence of having formal ecological knowledge through attending workshops, belonging to environmental organizations, undertaking hands-on restoration, or being professionally involved with the environment. The fact that 88% of all interviewees, with few having formal ecological training, questioned the findings of organizations that employ trained ecologists certainly suggests that gaps may exist in landowner understandings of nature. Indeed, several landowners in the Long Point area clearly failed to see how their land was connected to the surrounding landscape, declaring that because their natural features do not cover large areas they are not very important. Similarly, several cottagers inside RPP lamented the decaying state of many physical amenities such as tennis courts, elements which are clearly not compatible with the ecological integrity of an area.

On the other hand, landowners in the three case study sites may be more ecologically knowledgeable than the rest of the population in the Carolinian Life Zone. This possibility is supported by the fact that Long Point, the case study with the most remaining natural area, contained the most interviewees with formal ecological knowledge (60%), whereas the other two case study sites combined only had 25% of interviewees demonstrating formal ecological knowledge. Therefore it would seem possible that ecological knowledge is related to the naturalness of the landscape in which one lives, whether by drawing such people to the area, or educating people who already live there, or a combination of the two. Furthermore, as the three case study sites are more natural than most other areas of the Carolinian Life Zone it is possible

that landowner ecological knowledge, while possibly containing gaps, is greater than that of the population at large.

In addition, landowners were quick to point out that the understanding which conservation organizations have of ecology has changed over time. For example, the most elderly interviewee, a retired farmer, described a program that existed when he was younger which was funded by the Ontario Ministry of Agriculture. He indicated that he was actually given some funding at the time to expand his productive land and remove his hedgerows, stating that “when we got rid of the hedgerow there was a bit of a grant.”(31) Several other interviewees described participating in more recent programs to actively plant hedgerows, and thus in this respect policy has changed completely. Another landowner at Rondeau discussed the changing understanding that park officials have of the environment. She indicated that at one time the park was to be kept as a deciduous forest, and later as a Carolinian forest, and now it is to be black oak savannah.

Besides changes in agricultural and protected areas policy, landowners at Rondeau and Point Pelee frequently mentioned changes in settlement policy. Interviewees at Rondeau expressed that cottages within RPP were at one time actively encouraged, whereas today the policy is to grant no new cottages, and possibly to remove the cottages that exist. At Point Pelee the interviewees expressed that agricultural expansion through marsh drainage was at one time encouraged, whereas now there are efforts to re-naturalize the landscape. Therefore, regardless of the accuracy of such perceptions, landowners frequently recalled past changes in government policy to cast doubt on the legitimacy of present-day ecological assertions.



A possibility is that organizations and landowners could be speaking at different levels, and thus could be arguing past one another. When conservation organizations discuss the land it is often in regards to ecology. The landowners interviewed talked about ecology in non-technical terms, more often mentioning human interaction with the landscape. For example, many interviewees at Rondeau spoke about the community that had developed where they live. At Point Pelee many landowners discussed their history in the area, and the settlement changes they have seen over time. Thus conservation organizations which express an understanding of the land in terms that exclude humans may be inherently at odds with landowner perceptions of the landscape, regardless of understanding accuracy.

It was also evident that despite gaps which may exist in ecological understanding, 24% of interviewees agreed with conservation organizations that existing levels of environmental protection were inadequate. As one landowner expressed, “I don’t want to lose my house ...but they do need to expand....the ecological integrity is being destroyed.”(58) Such expressions were certainly more prevalent at Point Pelee than Long Point, the case study site with the greatest degree of existing landscape protection.

Interestingly, similar declarations were non-existent at Rondeau, where landowners did not support the need to expand natural protection, even those living beyond the park boundary. This may reflect the degree to which Rondeau landowners expressed a stewardship ethic in personal terms (83%), versus for the benefit of society (8%), or as a place of religion (17%). It may also reflect their lack of involvement in conservation organizations or stewardship programs (discussed in Section 4.1.4). What

this finding certainly demonstrates is that in certain circumstances landowners overcame any personal interests in order to support the environment, even if it could mean losing their property, whereas in other cases personal interests overrode any disposition towards the expanded protection of nature.

Another interesting finding was that only one farmer indicated an opinion that existing environmental protection was inadequate. Even this statement was hedged, declaring “I don’t disagree with them [wanting to expand protection] (31)”, which is much different than expressing outright agreement. Certainly this seems to reinforce the finding that farmers are concerned about the implications of supporting environmental values.

While the literature found additional consequences of having a gap in knowledge regarding the environment these consequences were generally not supported by the study findings. A knowledge gap was not found to exist in understanding the societal value of land, other than the few landowners previously mentioned who did not understand their land’s connection to the broader landscape. In fact, as discussed, many landowners expressed a stewardship ethic in terms of the benefits nature brings to society. Landowners also did not talk explicitly about the results of inaction for conservation, even when asked outright, but rather spoke about the current level of environmental protection in their areas.

Finally, a knowledge gap leading to inappropriate landowner action was also difficult to prove. On the one hand this could be related to landowners not wanting to disclose the ways in which they acted environmentally harmfully. Indeed, only one interviewee described something he did which was not ecologically beneficial, which

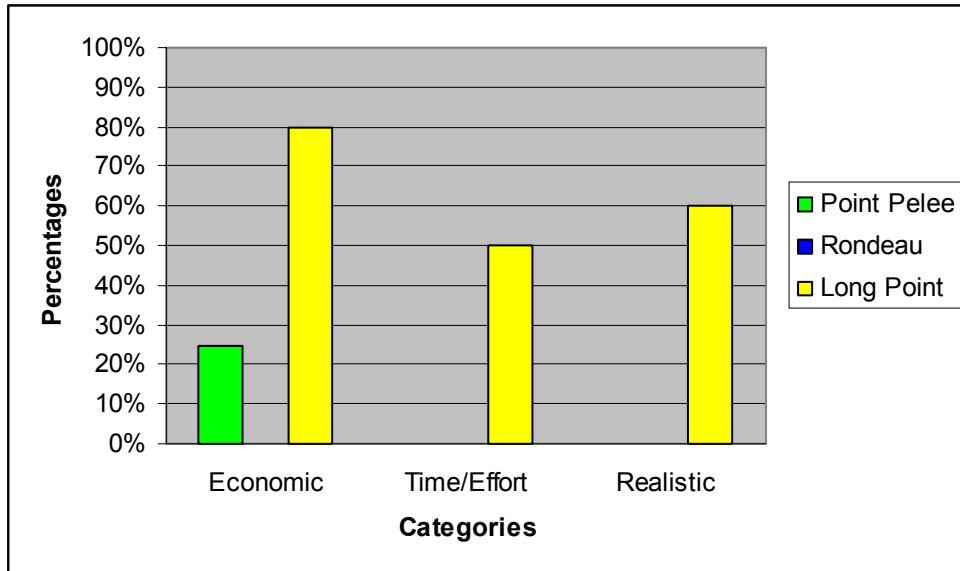
was planting a non-native species. On the other hand, it is difficult to prove that improper actions are related to lack of ecological knowledge. Many landowners might undertake harmful practices simply because they are routines in everyday life (such as gardening with non-indigenous plants for aesthetic purposes), or it is costly to change such practices (such as ploughing too close to riparian areas), not because they are inherently unaware of the harmful nature of such practices.

#### 4.1.3 Stewardship Constraints

The majority of the literature on landowner support for stewardship has found that while a stewardship ethic may exist, the expression of this ethic is hindered by the constraints of economics, time and effort, and programs being viewed by landowners as unrealistic. This study found all three factors mentioned by landowners to varying degrees.

Economic constraints were certainly the most frequently discussed impediment, being discussed by 32% of all interviewed landowners (Figure 4.3). This constraint was mentioned by landowners at Point Pelee and Long Point. For some the constraint was having the necessary farming income, or income from other means, to set aside land as natural space. One landowner who had retired to the countryside and taken up farming declared that his stewardship efforts were made much easier by the fact that he was not trying to support them through his farming income. For others it was mentioned that the cost of joining re-naturalization programs required upfront costs which were only later reimbursed. Such programs also tended to have grant ceilings above which all costs

were the landowners. Additionally, a few landowners discussed the supplies they needed to buy in order to establish their re-naturalized area.



**Figure 4.3 Landowners Expressing Constraints to Stewardship**

It should be noted that despite landowners mentioning the cost of program participation it was never stated that such costs necessarily constrained any of their efforts. Instead costs were merely noted as a factor involved in undertaking stewardship work. In addition, some landowners mentioned that they already owned the supplies needed to maintain their re-naturalized area, such as a water tank to irrigate newly planted trees. Therefore in such instances landowners were not mentioning actual constraints, but rather constraints that might exist for others who did not have the necessary supplies.

Two other findings were interesting in regards to economic constraints. First, four landowners mentioned keeping woodlots, which could have been cleared and

farmed, with no help from tax incentive programs. One landowner described how his father kept some of his land in bush “in spite of government” which was charging him “more [in taxes] than the person next door that had cleared land.”(37) Second, while 32% of landowners described issues of economic constraints, 26% expressly stated that economics were not a constraint to stewardship. At Point Pelee, landowners discussed having spent thousands of dollars to protect their property from flood damage. At Rondeau landowners mentioned spending money to purchase native plants, and those within the park stated that they support park efforts through their lease payments. Most described a situation where they are already spending money and thus they do not see finances as a limiting factor. One landowner who was asked about his willingness to contribute financially to stewardship remarked that “we’re all doing it anyway.”(3) Another, discussing his own efforts, said that he had “done a hell of a lot to maintain the integrity of the environment...[including having] supported it financially.”(13)

It is interesting that all of the landowners who expressed that economics are not a constraint are non-farm landowners who live in the Point Pelee or Rondeau case study sites. This may indicate a greater degree of affluence than compared to farming landowners, or landowners in other areas of the Carolinian Life Zone. In this case the movement of retired urbanites to the countryside noted in these two areas could increase the ease of implementing stewardship efforts. It might also reflect the previously discussed stewardship pressures at both sites, where landowners are trying to convince others that they are good stewards of the land. As such it is difficult to know the degree to which such financial support would be forthcoming if issues of insecure land tenure did not exist.

Such a cleavage between farmers and non-farmers was also witnessed when analysing time and effort constraints. Landowners in the Point Pelee and Rondeau areas, where 88% of interviewees were non-farm landowners, did not mention such factors as constraining their ability to undertake stewardship. All interviewees indicated they have given time and effort to stewardship activities in the past, and that they would be willing to do more. For example, when asked about his willingness to participate in stewardship efforts one landowner replied “For me, I would guarantee that.”(92) While this finding appears straightforward, it is also possible that the context of both areas, in which landowners are facing pressure to re-naturalize the landscape, has once again led to the denial of constraints that might naturally exist. Finally, the lack of time and effort as stewardship constraints is not entirely surprising when considering the relatively small size of stewardship efforts that non-farmers undertake, versus the large areas of land that farmers have available to undertake stewardship efforts.

At Long Point 50% of interviewees cited time and effort as constraints to the undertaking of stewardship, and all of these were farmers. All mentioned that they are the ones who have to maintain the re-naturalized areas, such as watering newly planted trees, and that stewardship programs do not provide any help for this on-going maintenance. Only two landowners discussed any level of post-implementation involvement from the programs they joined. In both cases this involvement was program administrators returning the subsequent year to check on plant growth, and replace plants that had died. It would be interesting to determine whether or not this lack of maintenance is a negative factor in landowner participation in stewardship

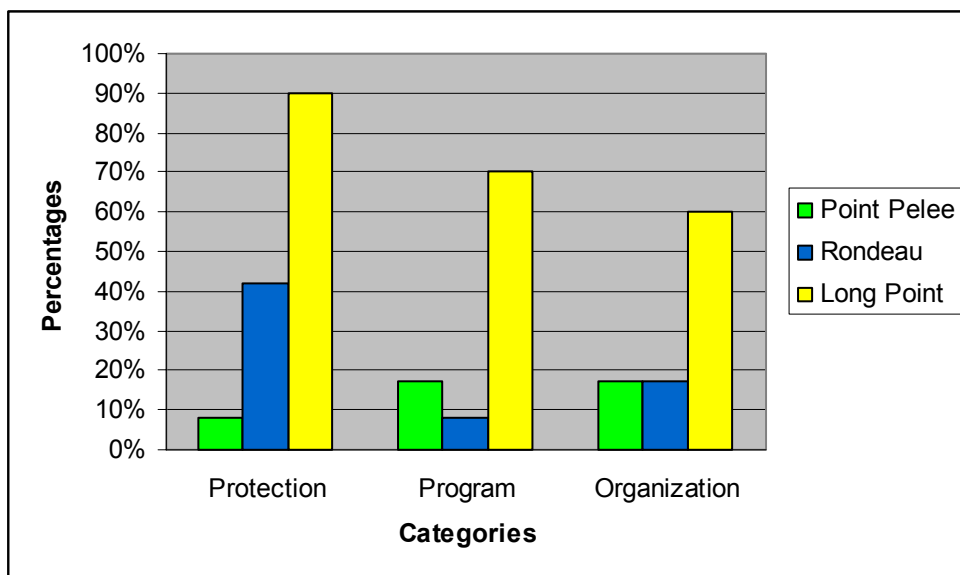
programs, and the degree to which providing on-going maintenance would increase involvement.

A similar variance among farmers and non-farmers was reflected in the findings of how realistic programs are. None of the non-farmers interviewed mentioned the realism of programs. This may be a reflection of their low participation rate in formal stewardship programs (to be discussed in Section 4.1.4). On the other hand, many farming landowners in the Long Point area remarked that stewardship programs are simply not realistic for their needs. One interviewee stated that program resources are not appropriate to what landowners need to commit. By this he intimated that programs and organizations do not provide the necessary support to landowners for whom farming has become a complex business operation. Another interviewee expressed a similar sentiment, that programs tend to forget they are farmers who have work to do. In all cases the prime concern was one of lack of support and follow-up from programs, leaving the landowners to do all of the work. Indeed, two landowners even mentioned that the stewardship programs in which they initially participated were short-lived and have since been cancelled. Therefore it seems clear that to gain landowner support, programs and organizations must provide resources, and remain in existence, on timeframes which make sense to landowners.

#### 4.1.4 Stewardship Behaviour

The literature on landowner support for stewardship indicates that the translation of a stewardship ethic into behaviour occurs in some instances, but not in others. In this study 62% of all interviewees exhibited some type of stewardship

behaviour, whether on-the-ground protection (44%), participating in a program (29%), or belonging to a conservation organization (29%). It is also noteworthy that such behaviour varied by case study site (Figure 4.4).



**Figure 4.4 Landowners Exhibiting Stewardship Behaviour**

The most prominent form of stewardship behaviour among interviewees was on-the-ground stewardship. The most active study area was Long Point, where 90% of landowners took the initiative to participate in stewardship activities. In all such cases this involved the planting and/or maintaining of natural features such as woodlots or wetlands. Quite a few landowners in Rondeau (42%) also translated an ethic into action through the planting of native species, naturescaping their yard, or re-naturalizing areas of their property. It is interesting that 71% of these Rondeau landowners expressed a stewardship ethic in terms of their own personal enjoyment of nature. As such, to the degree that landowner behaviour is influenced by ethics any stewardship action may be undertaken for their own personal benefit.



Point Pelee demonstrated the least amount of stewardship behaviour, with only one interviewee (a farmer) undertaking a stewardship initiative. In this case the effort involved the protecting and monitoring of a woodlot. This finding may reflect a farmer/non-farmer dichotomy in terms of on-the-ground stewardship. In all case study sites, of the interviewees who had undertaken stewardship behaviour 67% were farmers. As previously mentioned, the majority of farmers lived in the Long Point case study area, with many fewer at Point Pelee and Rondeau. Reasons for a greater degree of action by farmers could be many. Certainly farmers tended to have larger properties on which stewardship action could occur. Farmers may also be more comfortable with hands-on protection than other landowners. It could also be that non-farmers had undertaken initiatives which were simply not as apparent to the interviewer, or the interviewee, as the maintaining of a woodlot.

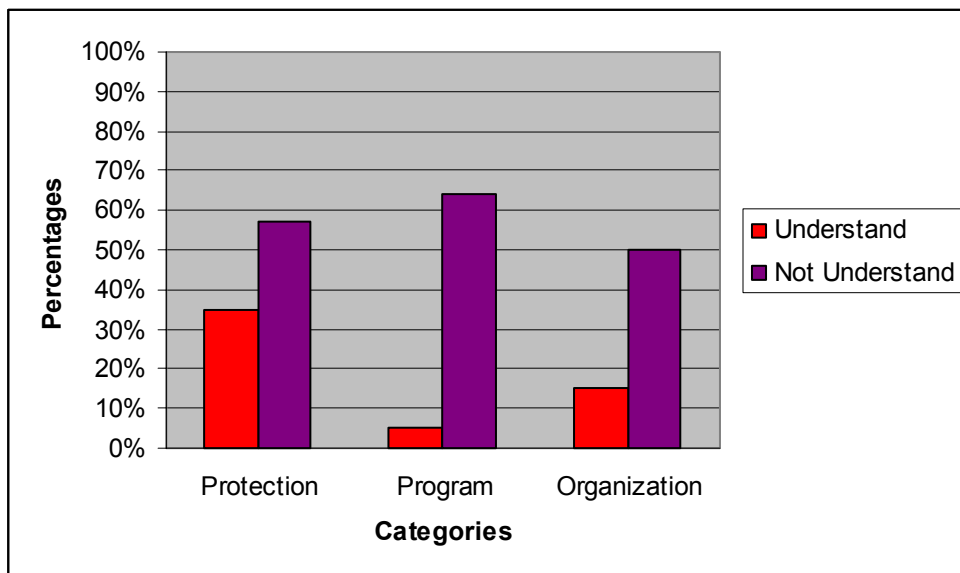
In regards to participation in stewardship programs once again the highest numbers were at Long Point where 70% of all interviewees had been involved in at least one program. At Point Pelee and Rondeau only 3 interviewees had participated in a stewardship program, and one was a farmer. This could reflect many factors. It may indicate the degree to which programs are designed with farmers in mind. It may also indicate that farmers are simply more aware of programs that exist, or that they are more comfortable with hands-on initiatives, or that they are willing to put their ethics into action.

As with program participation, only 29% of landowners belonged to a conservation organization. This finding contained two unexpected results. First, the landowners in Long Point, where the majority of interviewees were farmers, had the

highest degree of conservation organization membership at 60% (Figure 4.4). This was not anticipated, as it was assumed that farmers would be turned off by organizations promoting stewardship for fear that it could lead to greater societal interference on their land. Second, the interviewees at Point Pelee and Rondeau had very low levels of organization membership (17% each). It was assumed that non-farm membership would be high, as many landowners were retired and had moved to the areas to enjoy nature. Also, while the number of organizations are not as large as in the Long Point case study area, there are still many opportunities for local people to involve themselves in a variety of groups. It is possible that landowners may support such organizations through means which do not involve membership, such as financial.

It is interesting to note that the behaviour that was exhibited by interviewees, regardless of the type, was often correlated to stewardship ethics. For example, at Long Point every landowner who developed a stewardship ethic in their childhood also undertook stewardship initiatives on their own land. Such a possible correlation was not evident at Point Pelee or Rondeau, and therefore could be a reflection of the fact that the landowners were farmers. Also, 67% of landowners in the Long Point study area who expressed a stewardship ethic based on the benefits to society also belonged to a stewardship organization, indicating a possible connection between the two factors. Finally, evidence of a relationship between ethics and action can be seen at Point Pelee, where 3 out of 4 landowners demonstrating some form of stewardship behaviour also expressed a stewardship ethic, and of the 3 landowners who failed to express an ethic 2 did not exhibit any stewardship behaviour.

Behaviour is also related in many situations to understanding nature. Of the 20 interviewees who claimed to have a superior knowledge of their land, 35% gave on-the-ground protection, 5% participated in programs and 15% belonged to organizations. In contrast, of the 14 interviewees who did not claim to understand nature better than others, 57% gave on-the-ground protection, 64% participated in programs and 50% belonged to organizations (summarized in Figure 4.5). As such, it appears that those who put stewardship into action exhibit humility in their understanding of nature.



**Figure 4.5 Comparison of Landowners Exhibiting Stewardship Behaviour and Claiming to Understand Nature Better than Others**

Another interesting connection with understanding nature is that 48% of those who belonged to a group expressed the opinion that current levels of environmental protection were inadequate. Conversely, of the landowners at Long Point who claimed that current environmental protection is adequate and the landowners at Rondeau who expressed similar sentiments, only 15% belonged to stewardship organizations. This finding likely exhibits some connection between organization membership and

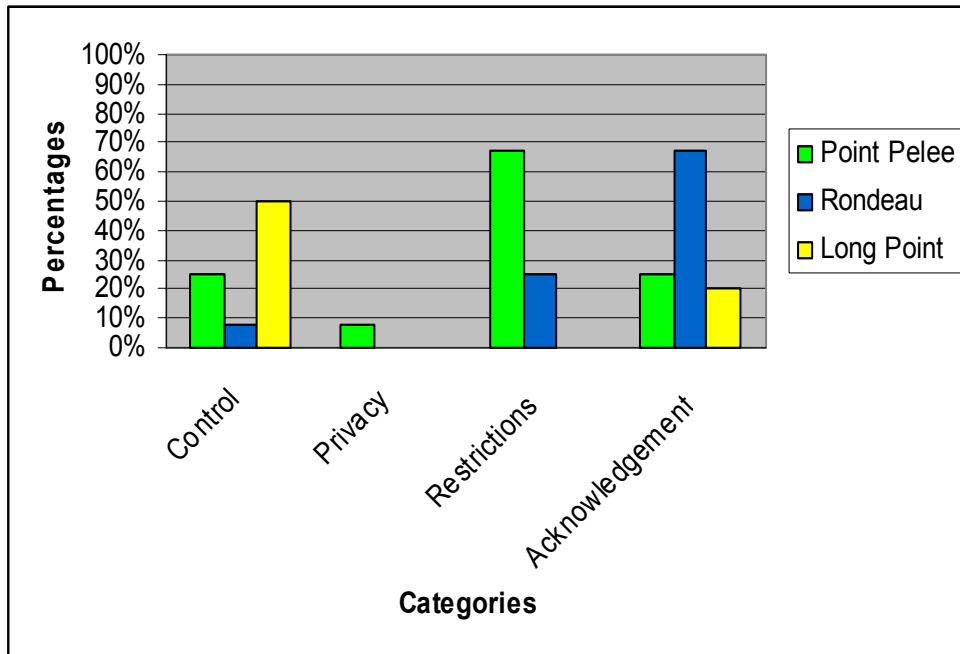
ecological understanding, whether organizations educate their members, or educated citizens gravitate to organizations, or a combination of the two.

Behaviour is further related in varying ways to stewardship constraints. At Point Pelee only one landowner who expressed stewardship through behaviour described constraints to his actions, and two landowners even claimed that constraints did not exist. In contrast, all landowners exhibiting stewardship behaviour at Long Point described constraints of finances, time and effort. The differences between the two sites may have several explanations. To begin, those at Point Pelee could be responding to their specific context of re-naturalization pressure, rather than any realistic lack of constraints. It does seem likely that more stewardship behaviour (found in only 33% of Point Pelee interviewees) would be expected if constraints were truly as non-existent as landowners claim. At Long Point it may be that constraints do not influence behaviour as strongly as landowners may claim. Certainly this study supports that constraints need not necessarily stand in the way of stewardship action.

#### 4.2 Property Rights Concerns

One of the main obstacles to landowner support for stewardship that has been documented in the academic literature is property rights concerns. These concerns have been manifested in several ways. First, many landowners are apprehensive about environmental initiatives leading to a loss of control over their land. Second, a few landowners also worry about a resultant loss of privacy. Third, there is concern that restrictions will be put into place that dictate what landowners can or cannot do. Finally, it has been expressed that landowners feel their stewardship efforts are not

acknowledged. While the findings of this study did support the importance of property rights among landowners, the specific aspect of concern varied by case study site (Figure 4.6).



**Figure 4.6 Landowners Expressing Various Property Rights Concerns**

Concern over loss of control was expressed by 26% of all landowners. All expressed the similar sentiment that they did not want others making decisions for them. One landowner, in discussing an environmental initiative which affected his property, remarked, “So it’s a big decision they made on our part, without ever involving us in that decision.”(53) As one landowner succinctly stated, “leave us alone.”(86) These findings were expected and likely reflect that landowners support voluntary stewardship over regulated conservation.

The degree to which loss of control concerns were expressed varied by case study site (see Figure 4.6). Such feelings were most prevalent at Long Point (50% of

interviewees). This was unexpected, as it is the most natural of the study areas and all conservation thus far has been on a voluntary basis. It is possible that such feelings reflect the landowner composition, in that most interviewees in this area were farmers. This possibility is supported by making comparisons with Point Pelee, an area mainly composed of non-farm interviewees, but where two of the three landowners stating a concern over property rights were farmers. It is also supported by the Rondeau case study, an area mainly of non-farm interviewees where only one landowner indicated a property rights concern. In fact, three interviewees at Rondeau stated that they would be agreeable to increased regulation on their land. Certainly it can be surmised that a degree of this support for regulation derives from concerns over cottage leases expiring at the provincial park. Many landowners who live within RPP stated that they would gladly accept stricter environmental controls if it meant they could stay in the park. However, the findings from all three case study sites also support the belief that farmers are generally more concerned with loss of control over their land than are non-farmers.

While certain literature (Morris, Mills, and Crawford 2000; Shogren 2000) has noted that property rights concerns are manifested in anxiety over loss of privacy such a finding was not apparent in this study. Only one landowner expressed such a view, while four landowners expressly stated that organizations respect their privacy. The one landowner expressing this view described conservation professionals who have come onto his land without prior permission, and therefore he felt violated his right to privacy and freedom. This same landowner was also uneasy about organizations which use aerial photographs for their research, as such photographs, often showing his property, are taken without his permission.

While privacy is therefore not a major factor in landowner support for stewardship, it should not be dismissed. It may be that other landowners did not express similar sentiments because organizations are respectful of their privacy, and that if this respect diminished so too would landowner support. As such, all stewardship efforts would be wise to continue this respect for privacy. It could also indicate that landowners in such natural environments accept a certain degree of loss of privacy for conservation purposes. One landowner who owned property on the Long Point spit described a property agreement which was in place before he owned the land, by which Canadian Wildlife Service personnel can enter private property for conservation purposes without prior notification. In addition, it seems likely that by engaging landowners in the stewardship process they would regain a degree of control over how their land is accessed, and thus feelings of privacy invasion would be diminished.

Many other landowners (32%) expressed property right concerns in terms of regulations. For some of the interviewees it was a concern over the existence of regulations at all. One landowner, speaking about conservationists placing regulations upon his land derided “no-good doers”(78) telling him what to do. Another landowner expressed a similar sentiment, that “I have a lot of problems with somebody...telling me what [I can do].”(31)

Great concern also existed over the application of regulations. All 32% of landowners concerned about regulations described the inconsistent nature by which they felt restrictions were enforced. Several described this enforcement as being on a whim, rather than being applied on a consistent basis. In a certain sense a fear of the unknown is the greatest concern, rather than any regulations which may exist. In

addition, the interviewer noted a general apprehension towards organizations and their employees who enforced regulations. It is interesting that all such misgivings occurred in the Point Pelee and Rondeau areas, where government conservation organizations both deliver stewardship initiatives and regulate aspects of land-use. In the Long Point region it appears that conservation organizations are much less regulatory in their pursuit of environmental objectives.

The academic literature on stewardship also notes that property rights concerns occur when the inherent stewardship of landowners goes unacknowledged. This study found evidence of this concern present at all three case study sites (see Figure 4.6) and among 38% of all interviewees. As the prevalence of a stewardship ethic indicates, many landowners care for the nature on their property and in their community. Many described their actions in terms of being protectors and stewards undertaking appropriate actions to maintain the environment. One landowner, discussing the role that landowners play in environmental protection, talked about how landowners are already doing appropriate things for the environment. Another described landowners as “the best stewards...that you are going to find.”(49) A similar sentiment was expressed by a different landowner, stating that landowners are not “detrimental to the ...environment, if anything I think that we add to the ...environment.”(53) Landowners also expressed that they were becoming more aware of environmental issues. One landowner discussed the increased environmental awareness of himself and his neighbours, stating that “I do try to minimize my impact on the environment down here, and I think you’re seeing a lot more of that with other people down there.”(86) Whenever landowners were directly asked if their stewardship was acknowledged by



conservation organizations the typical response was “I have never heard anything from them.”(25)

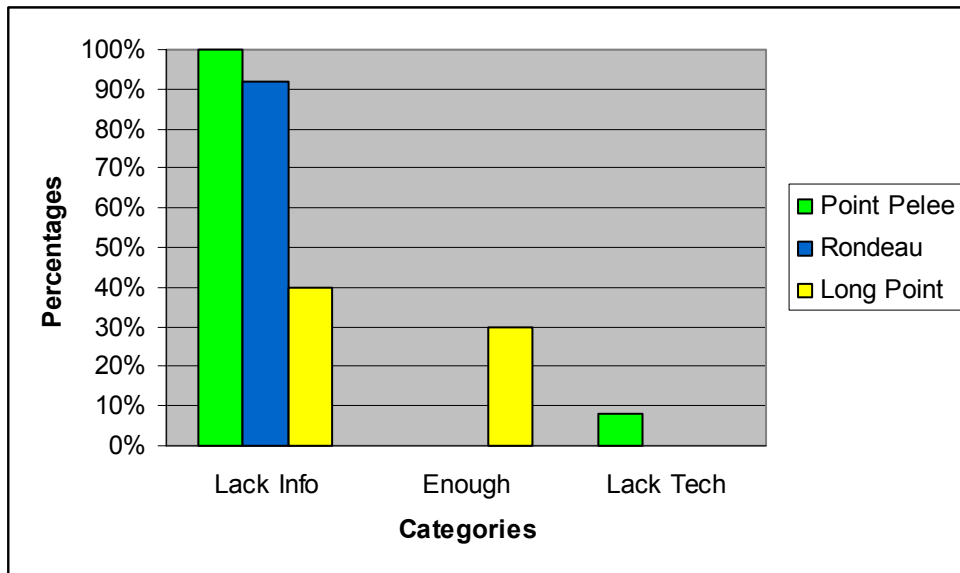
Differences in who expressed such concerns are evident. Nearly every single person articulating this issue was a non-farmer. In fact, at Long Point, the area with the most farmers, there were only two interviewees who mentioned a lack of acknowledgment, and one was a non-farmer. Why do non-farmers feel so under-appreciated? It may be that they recognize the lack of programs specific to their situation, and the lack of organizations approaching them about their land. It could also be the nature of their stewardship work, which is much less visible because it is at such a smaller scale. Finally, it may reflect animosity between landowners and government conservation organizations in the Point Pelee and Rondeau case study sites. This possibility is supported by the fact that the majority of interviewees expressing this belief were located in the Rondeau region (67%), an area where many landowners are struggling to maintain their leases within the provincial park. At Point Pelee (25%) and Long Point (20%) no such direct relations exist between property owners and an organization.

### 4.3 Bureaucracy

#### 4.3.1 Information

The stewardship literature has argued that landowners are not receiving adequate information regarding organizations and programs in their area and that there is a lack of ecological and geological information specific to landowner property. For

the case studies with the most altered landscapes, Point Pelee and Rondeau, lack of information was found to exist, but at Long Point this situation was much less evident (Figure 4.7).



**Figure 4.7 Landowners Expressing Various Opinions on Information Availability**

At Point Pelee and Rondeau all but one interviewee stated that information was lacking from stewardship organizations and programs. All mentioned at least one of three means by which information is insufficient. To begin, when asked about receiving information from organizations, such as flyers or newsletters, the typical response was either “No”(58), or something similar to “we did get some minor bits of information, but it was very minor.”(62) Typically this involved a lack of information mailed to a landowner, although it could be that information is mailed and simply goes unnoticed. As for the availability of information on-line only one landowner made a comment, that “their website doesn’t hold much. There’s very little info on it. Most of the info is two years old, there’s nothing updated.”(58) It was found by the interviewer that many

websites of local organizations were not up-to-date, as the landowner claimed. It is possible that landowners may not use the internet for such informational purposes, which seems likely as approximately 30% of the interviewees did not have email accounts by which to communicate with the interviewer. On the other hand, no landowner discussed a lack of information in brochure form, and one landowner at Long Point expressly mentioned the availability of brochures at local government offices and community events.

Several landowners also mentioned that they had never been approached by a stewardship organization, seeming to intimate that they wish they had been. For example, one landowner was asked about contact with local organizations, and said “No, we don’t have any of that.”(79) This suggests that landowner contact is desired and that such direct contact is not currently occurring for certain landowners. Only one landowner, a farmer, stated outright that he was not interested in being approached by any organization.

Finally, by far the greatest number of interviewees (71%) discussed a lack of communication and relationship with conservation organizations. The response given by one landowner was that “if there has been communication it’s been scant and poor”(92), which accurately reflects the sentiments of many others. It cannot be ignored that both Point Pelee and Rondeau are areas with a high level of strain between certain landowners and local conservation organizations. One landowner described the communication provided by a local organization as “BS and lip service.”(86) Another landowner, when asked about a partnership between local organizations and landowners, declared that “No, we don’t have any of that, that I’m aware of.”(79) This

lack of communication indicates that the current strain is likely to persist into the future. Finally, in both case study sites this lack of a partnership is possibly a contributing factor for the lack of landowner stewardship behaviour by means of involvement in programs or membership in organizations.

The Long Point case study area exhibited different findings. Only 40% of landowners remarked that information was lacking, several because they had not been approached by conservation organizations, and one in terms of information regarding local programs and groups. On the other hand, 30% of landowners declared that they were content with the information they had received and with the level of contact by local organizations.

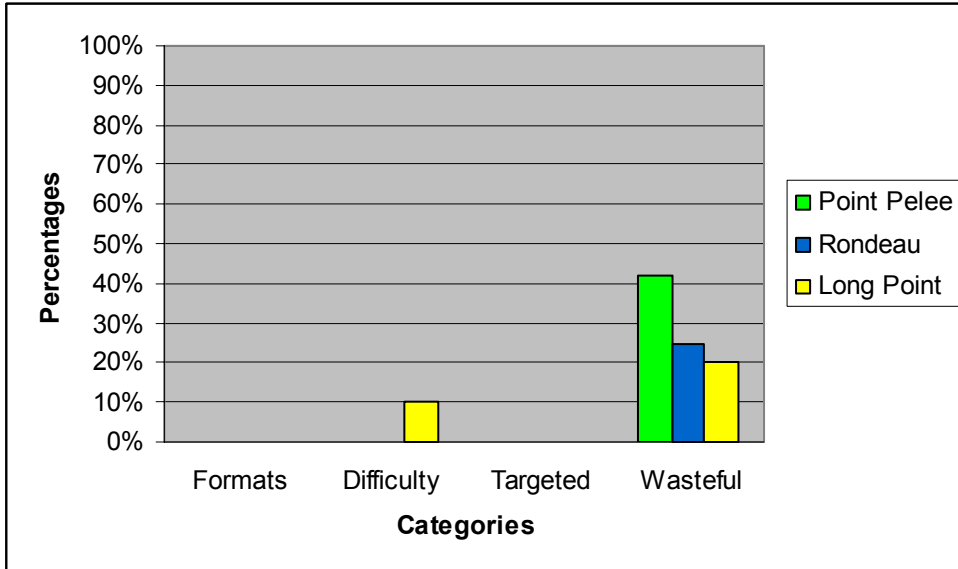
There exists a variety of possible explanations for these results. Due to the large degree of natural features in existence this area has more local stewardship organizations than Point Pelee and Rondeau. As such there is simply more opportunity for landowners to be approached and to gain information. It is also probable that interviewees involved in programs and groups, which is the situation in Long Point, would be more aware of stewardship in their area, a presumption which was found to be true. Of the landowners who expressed a lack of information half had not been involved in any stewardship programs and none were members of conservation organizations. On the other side, every landowner who expressed approval of the level of information distribution was involved in both stewardship programs and conservation organizations. Even the sole landowner in Rondeau who did not indicate a lack of information was a member of a local conservation group. It might be that certain landowners do not wish to be involved in stewardship, and thus lack of information is a result of landowner

choices, not a lack of communication. For such landowners it is possible that no level of communication would be sufficient to gain their support. In their cases it might be more efficient to treat such landowners as unreachable, and concentrate efforts towards those open to stewardship.

Regarding technical information, the conclusion in the academic literature that there is a lack of information specific to landowner property was not supported by this study. Only one interviewee criticized the generic nature of the information he received, hoping to obtain communications that were more in-depth. Despite this lack of corroboration it remains difficult to discount the need for technical information. Perhaps many landowners simply assume that stewardship organizations will provide technical information during program involvement. In addition, many landowners may already have technical information through education, or through hands-on experience with their land. It is also true that many interviewees in Point Pelee and Rondeau have never participated in a stewardship program, and thus were never at a stage where specific information about their land was needed.

#### 4.3.2 How Implemented

Stewardship support research stresses the importance of appropriate mechanisms to implement stewardship, such as proper formats, level of difficulty and targeting information. This study found that none of these factors were high among landowner concerns. The only factor which was mentioned with any frequency was the perceived financial mismanagement of local conservation organizations (Figure 4.8).



**Figure 4.8 Landowners Expressing Various Opinions on How Programs are Implemented**

None of the interviewees mentioned discontent with program information formats. This does not mean that this factor is unimportant. Specific questions were rarely asked about this issue, and therefore it simply seems that this is not the most vital factor influencing landowner support of stewardship. As previously discussed, it was also found that many landowners did not own computers, and therefore providing information through the internet would likely not reach this audience. In addition, others admitted that information might have come in the mail and gone unnoticed, and one landowner indicated enjoying the information in brochure form.

In regards to the difficulty of stewardship information only two comments were voiced. One landowner discussed the large amount of paperwork involved for the program in which he participated. The other had an opposing perspective that program information was straightforward. Once again specific information was not asked about this stewardship factor, and therefore it remains likely that highly bureaucratic

programs would lessen landowner support. It is certainly the case that program paperwork tends to be created for organizational recordkeeping, not for the needs of program participants. Perhaps the most important factor, therefore, is the degree to which landowners are aided in the program participation process.

In regards to targeting information, once again no interviewees commented on this issue, indicating a general lack of importance for stewardship support. Nonetheless, the degree to which the findings in this study have noted landowner differences by broad categories (such as farmer/non-farmer, natural landscape/altered landscape, personal ethics/social ethics, and ethics expressed in action/ethics not expressed in action) indicates the probable importance of targeting stewardship information. Certainly a program targeting the needs of a farmer in a natural landscape will have, and has proven to have in Point Pelee and Rondeau, little relevance to a non-farmer in a more altered landscape. It is also likely that examining mechanisms by which stewardship is implemented is more appropriate for program specific research, rather than the broad approach which this study is undertaking.

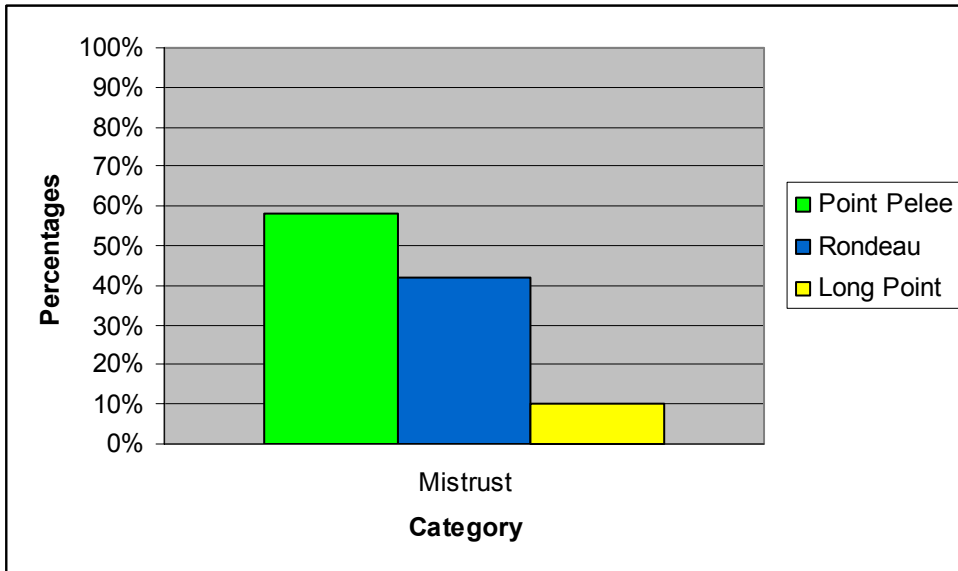
A perception that local conservation organizations are wasteful of money is an aspect of stewardship implementation which was prevalent, although it has not been highlighted in the academic stewardship literature. This alleged waste was discussed by 29% of all interviewees. Such comments were found across all case study sites regardless of the local context, and regardless of the characteristics of the landowner. Many interviewees volunteered examples of this financial waste. Some talked about spending that appeared frivolous. One landowner, describing the spending of a local organization, said that “it is hard to describe the inconvenience and the waste.”(13)

Another landowner talked about the need for environmental protection while at the same time commenting on government waste, saying that “government blows money on worse things than making things green.”(12) Others mentioned re-naturalization projects which never achieved their desired outcomes. One landowner described the planting of trees by his local Conservation Authority as “a joke”(21), noting that trees planted in rows are not a forest. Another landowner described a program to eradicate an invasive plant species which was not successful, and wondered if “maybe they don’t research things perhaps as much as they should.”(73) Still others talked about money donated to certain projects, without those projects ever materializing. It was also true that talk of financial waste was more centered on government organizations involved in stewardship efforts than on NGOs. Highlighting the level of mistrust, one landowner discussed the apparent wastefulness of his local Conservation Authority, by commenting that “a whole other study... would be to study the growth of Conservation Authority budgets, personnel, and stuff over the last twenty-five years, province wide.”(P6)

#### 4.3.3 Who Implements

While the stewardship support literature has determined there is a general mistrust of state actors amongst landowners, this study found that such mistrust is context dependent (Figure 4.9). At Point Pelee and Rondeau, areas where landowners find themselves in the midst of landscapes requiring re-naturalization, a general lack of trust was common. However, at Long Point such mistrust was virtually non-existent.





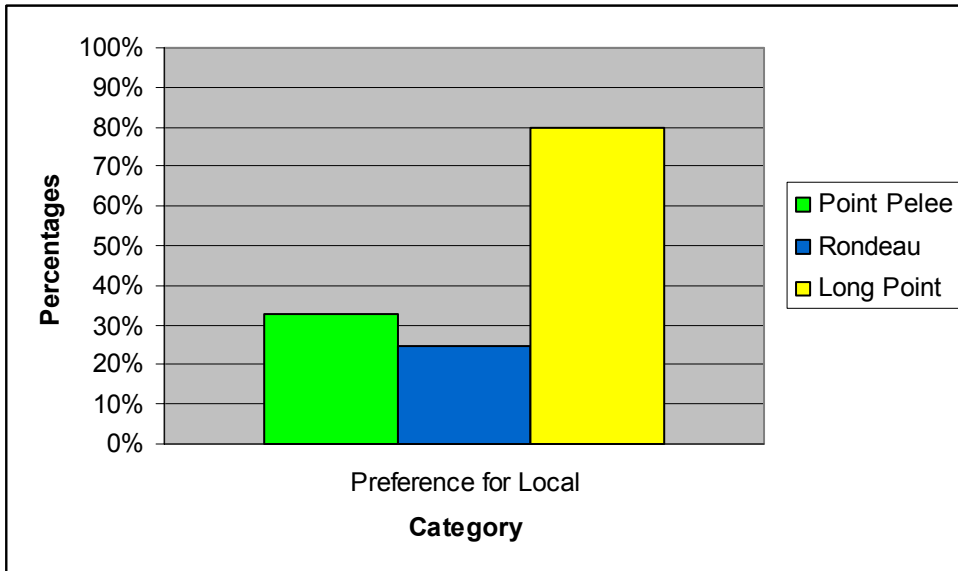
**Figure 4.9 Landowners Expressing Mistrust of Government Actors**

The mistrust of government found at Point Pelee and Rondeau likely reflects landowner mistrust of government in general, rather than a mistrust of government organizations involved in stewardship. Several landowners talked in disparaging tones about bureaucrats. One landowner, while discussing the changing policies of government, stated that “This is what happens where you’re dealing with civil servants.”(31) Some landowners even blamed the current state of tension between landowners and conservation organizations on civil servants, arguing that “I think they...the bureaucrats know they can outlive any minister.”(7) Another stated that “I don’t think the people in Toronto really understand.”(65) Similarly, one landowner provided the opinion that “the decision making is not often done by the people who are actually involved there...that’s proven in government. Not always the best decisions are made.”(59) The general feeling was that such actors are dishonest. As one interviewee claimed “they’re all in cahoots.”(21) Such mistrust was not unexpected, given the

context of the two locations, as well as the fact that many landowners in the two areas (75%) previously expressed mistrust through their questioning of government understandings of local ecology.

At Long Point landowners did not express that they mistrust government, and the one landowner who mentioned anything on the topic simply speculated that other landowners might mistrust government. This situation coincides with previous findings in the area regarding government actors. For example interviewees were heavily involved in conservation organizations (60%) and stewardship programs (70%), many of which are government-run. In addition, few interviewees (20%) expressed that they have a better understanding of the environment than their local conservation organizations. These results illustrate that landowner mistrust of government may not be inherent, as previous literature has indicated, but rather it depends upon the local context. At the very least it indicates that any inherent mistrust need not be an impediment to stewardship support and action.

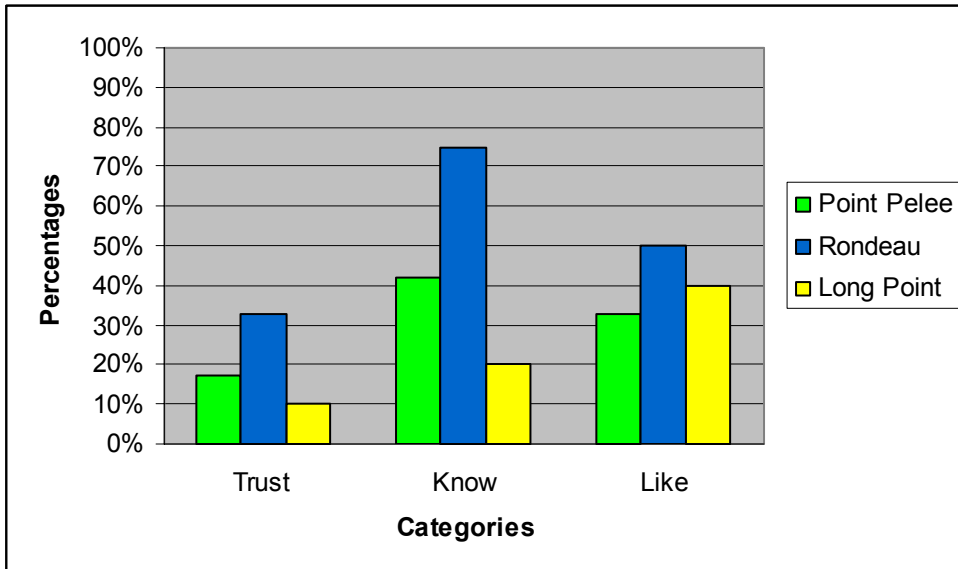
The academic literature has conversely noted a preference for local organizations acting close to the land and interacting closely with landowners. This study found no exception. Many landowners, especially those in Long Point, prefer to work with local organizations (Figure 4.10). As one landowner explained, he liked people with “dirty hands.”(57) This researcher came to a similar conclusion while conducting interviews, as interviewees were generally more receptive when clothing and appearance reflected a working relationship with the land. In Point Pelee and Rondeau 38% of landowners who did not belong to conservation organizations or



**Figure 4.10 Landowners Expressing a Preference for Local Actors**

participate in stewardship programs expressed a desire to interact with local organizations rather than governmental bodies, whereas only 18% of those who did belong or participate stated a desire for local organizations. Therefore it seems that for those who are not currently involved in environmental initiatives the presence of government actors may be a deterrent to action.

This study also found, however, that there is not blind acceptance of local organizations (Figure 4.11). Many landowners (47%) commented that they know the employees of their local organizations. This was especially apparent at Rondeau (75%), where many landowners interact with park employees. Landowners also claimed (41%) to be on a friendly basis with many of the employees. Only one landowner expressed a dislike for local actors, and this seemed to be due to a conflict of a personal nature.



**Figure 4.11 Landowners Expressing Opinions of Local Actors**

However, even those who knew and liked their local representatives did not always trust them. Only 21% of landowners expressed trusting these local actors, and even these comments were often qualified. One landowner’s statement that “I’ve not had a problem with the people on the ground at all”(27) summarizes the feelings of many others. As such, trust appears to be borne from a lack of reasons to mistrust, rather than a range of reasons to trust. Furthermore 18% of landowners, and at least one at each case study site, mentioned that they do not trust their local stewardship actors. As one landowner bluntly stated about a local official, “you’re a nice guy, you’re just an idiot.”(9) Several interviewees mentioned the lack of support that they have received from what one landowner referred to as “the conservation people.”(58) Two interviewees mentioned that these organizations were not competent, questioning the apparently fluid nature of their mission statements and their ability to act in a broader interest.

The stewardship literature additionally documents that the actions of landowners may not only be affected by the organizations implementing stewardship initiatives, but by the stewardship actions of their neighbours. Such a claim was not confirmed by the findings in this study. While it seems likely that landowners may learn from their neighbours about stewardship programs, or about environmental actions they can undertake upon their land, no interviewee mentioned this as a factor. Thus it is likely that the role of more formal organizations is more important for stewardship support. The only two landowners who discussed their neighbours lived in the Long Point area. The comments of these landowners both revolved around undesirable activities occurring in their private woodlot by outsiders. In these situations neighbours were useful through helping to monitor the woodlots and report trespassers, not through encouraging any stewardship actions.

## 5.0 Research Summary and Conclusions

This chapter begins with an analysis of the interview findings as they relate to the four thesis objectives. The next section lists seven recommendations for the on-the-ground practice of stewardship. This is followed by a discussion of the limitations inherent in the research undertaken. Finally, recommendations are made regarding the research of stewardship, ending with a conclusion of the study findings.

### 5.1 Summary and Conclusions

The purpose of this research was to explore the factors influencing landowner support for stewardship. The hope was that a more complete understanding of these factors would lead to stewardship implementation featuring greater landowner support. By focusing on three case study sites within the Carolinian Life Zone of Southern Ontario, Point Pelee, Rondeau and Long Point, four objectives were considered:

1. To assess the extent that landowner comments regarding stewardship are congruent with what the academic literature states about landowner support for stewardship.
2. To explore whether factors not identified in the literature are involved in landowner support for stewardship.
3. To compare and contrast the factors affecting landowner support for stewardship initiatives amongst multiple geographical sites, highlighting similarities and differences and exploring implications.
4. To suggest ways that the practice of stewardship could be improved to increase landowner support.

The degree to which landowner comments regarding stewardship were consistent with findings in the academic literature fluctuated. The themes researched exhibited varying levels of importance amongst the interviewees. The most frequently

noted themes were that landowners expressed a stewardship ethic (88%), described a lack of information regarding stewardship (79%), exhibited stewardship behaviour through some means (62%) and claimed to understand nature better than others (59%). Thus it seems that the majority of landowners are interested in conservation and do have a predisposition towards the stewardship message. Landowners also desire to receive this message through active communication from groups, even though they may distrust the knowledge that others have of their land. However, this distrust should not be interpreted too broadly; it did appear that mistrusting the ecological knowledge of conservation organizations was a broader mistrust than environmental concepts, but related directly to the amount of time that conservation organizations and their staff spent outside in nature.

The majority of themes were mentioned by between 32 to 47% of landowners, such as economic constraints, property rights concerns, concerns over restrictions, a lack of acknowledgment of landowner stewardship efforts, mistrusting state actors, desiring face-to-face communication, and knowing and liking local conservation officials. Due to the numbers expressing these themes it is difficult to judge their importance. All that can be known for certain about these themes is that they should not be ignored by conservation organizations or stewardship programs. It appears that economic constraints are an issue but that their significance should not be overstated, especially for non-farm landowners. The issue of property rights concerns was also not as prevalent as expected. While it seems that stewardship affecting farm land should remain voluntary in order to gain landowner support, stewardship in non-farm areas can more readily partner with mechanisms which regulate land-use. If some degree of

regulation does occur in conjunction with stewardship it should be consistent and transparent. To address the feeling of efforts not being acknowledged the stewardship tool of recognition should continue to be used, and be expanded where feasible. Organizations would also be wise to learn about the role that landowners feel they play in their local area, and attempt to respect and build on this role through their interactions. Finally, in regards to desiring local interaction it seems that local action does not guarantee trust, especially of government actors. This mistrust highlights the need for increased communication with landowners, and the inclusion of landowners in local stewardship decision-making.

There were also many themes for which evidence was much more difficult to find, such as constraints of time and effort, constraints of programs being unrealistic, concern over privacy, expressing a lack of technical information, concern over information formats, concern that information was complicated, concern that information was not targeted and being influenced by the actions of neighbours. Therefore it seems that landowners are not as interested in how stewardship is implemented or what their neighbours do. They are also not as constrained in their stewardship efforts as previously believed. The result is that these factors, while they should not be ignored, should not be issues of major concern for those trying to support stewardship initiatives.

In regards to landowner support factors not highlighted in the academic literature the landowners interviewed mentioned two main themes. Twenty-nine percent stated that local conservation organizations are wasteful when they spend money. It seems likely that this perception is exacerbated in regions where governments play a



role in stewardship programs, due to the number of interviewees expressing a distrust of state actors. The implication for conservation organizations is the need to be transparent in their actions and in the spending of financial resources. It also reaffirms the need for increased communication with landowners so they are aware of the financial decisions being made.

The second theme is that 35% of interviewees showed evidence of formal ecological knowledge through such aspects as education, belonging to environmental organizations, undertaking stewardship actions or being professionally involved with the environment. As such it is difficult to categorize negative landowner reactions to conservation initiatives as uneducated. Certainly there appeared to be few landowners who did not understand the concepts and motivations behind stewardship initiatives. It seems likely that if landowners were involved more closely in the conservation process they would be able to make useful and intelligent contributions.

It is also interesting to note a theme which does not appear in either the academic literature on stewardship support or the findings of this study. While it was assumed that landowners would be turned off by descriptions of the environment which focus on science and ignore any social aspects this was not the case. It might be the case that landowners too think about their land in ecological terms. It could also be that landowners do not expect conservation organizations to understand their non-scientific connection with the land, and thus are not bothered when such an understanding is absent. Regardless of the reason, it seems likely that conservation organizations which express some level of a social understanding of the environment will be better received than those that do not.

In regards to the third thesis objective, comparing landowner support between multiple geographical areas, the three chosen case study sites had several notable differences. These differences underscore the importance of understanding the local context before attempting to implement stewardship efforts through formal programs or organizations. Ignoring differences would likely result in stewardship implementation whose effect would be reduced landowner support. One of the main differences between the sites was the protected landscape. While all three areas had similar geological and biological aspects the amount of remaining and protected natural features was substantially more at Long Point. The main result from this was a difference in the nature of stewardship, where the focus was more on protection at Long Point but more on re-naturalization at Point Pelee and Rondeau. Such a difference has affected the amount of regulation that has been proposed. Thus the relationship that landowners have with conservation organizations in Point Pelee and Rondeau, where there is a greater amount of regulation, is more acrimonious than the relationship found in the Long Point region.

Another difference that existed between sites was the amount of stewardship activity. At Long Point there was a large degree of formal and informal stewardship occurring, whereas Point Pelee and Rondeau exhibited less activity. This difference related directly to the varying support available for landowners. At Long Point stewardship was supported through a variety of government and NGO organizations, whereas stewardship at Point Pelee and Rondeau was mainly supported by the local Conservation Authority. Landowners in these two areas therefore had many fewer stewardship tools available to them. They also had only one main choice for an

organization delivering these tools, and if there was animosity they had few alternatives. The fact that Conservation Authorities are pseudo-government organizations also meant that animosity from landowners was likely.

The final main difference between the sites involved landowner types, with a far greater number of non-farm landowners residing in the Point Pelee and Rondeau areas. This difference is significant because farmers and non-farmers approach stewardship from diverse perspectives. In regard to motivations for stewardship, farming landowners most often discussed the influence of their family when they were children, and the importance of nature for their children now. On the other hand non-farm landowners were more apt to discuss the recreational aspects of nature, and the benefits that nature brings to society. A difference also existed with on-the-ground needs, where farmers own larger properties, and may already own some of the equipment necessary for re-naturalization projects. Non-farm landowners tended to own much smaller properties, to have few pieces of equipment for stewardship, but to have more financial resources available for stewardship efforts. There also existed different perspectives on the role that outsiders have regarding private land-use decisions, with non-farm landowners much more willing to accept regulations on the ability to use their land. In the context of land increasingly being owned by non-farm landowners (Wilson and Hart 2001) these differences can play a significant role for conservation organizations and stewardship programs.

## 5.2 Recommendations

From the findings of this study there are several recommendations which can aid the practice of stewardship through changes to stewardship programs, organizations involved in stewardship efforts, the role of landowners and land-use regulations. The recommendations are to:

### **1) Design stewardship programs to be more landowner-friendly**

The study findings indicate three issues of program design which could be improved to make landowner participation more user-friendly. First, program length needs to be addressed. Many interviewees had long histories on their land and as such could recall stewardship programs that have come and gone. A few even mentioned programs that lasted only one year. Second, program follow-up needs to change. At the present few programs provide on-going involvement or support beyond the initial implementation phase. Third, programs can sometimes have stringent conditions for qualification which end up excluding certain landowners. For example, tax incentive programs can have minimum sizes for woodlots, ignoring that small woodlots can have a degree of environmental significance.

To overcome these issues several recommendations are given. To begin, all stewardship programs should set a minimum number of years for which they will operate. When comparing this to a landowners' timeframe the minimum would be at least a ten-year commitment. Funding for these programs should also be guaranteed for the program length, to overcome programs being altered with changes in political agendas. Programs should set follow-up dates, and have funds available if more work is

necessary. Programs should also allow for flexibility in who qualifies, leaving the decision to conservation professionals rather than rigid guidelines. Finally, in regards to the feasibility of these recommendations government organizations may not be the best mechanism by which to implement stewardship. Rather, NGOs might better be able to provide programs which operate on the basis of a long-term, flexible commitment to the land and landowner.

## **2) Target stewardship programs**

The results of this study found significant differences between landowner responses based on stewardship context and landowner composition. Landowners who lived in the Point Pelee and Rondeau areas, facing pressures to re-naturalize the landscape, often gave very different answers from landowners in the more natural Long Point area. For example, programs in areas facing re-naturalization pressure face a greater need to overcome landowner: doubts regarding the understanding that conservation organizations have of the environment, mistrust of government actors, claims that organizations are financially wasteful, accusations that stewardship regulations are not applied consistently and contentions that not enough information is being provided about stewardship. It was also common that a difference was found, regardless of case study site, between landowners who were farmers and those who were non-farmers. As such, organizations should ensure that they know the differences in landowner composition that exist in their area. In regards to non-farmers programs should focus on efforts that can occur on small landholdings, that may involve some amount of regulation, and that may require less funding than programs for farmed land.

### **3) Involve landowners in the stewardship process**

As noted in the research findings, landowners at all three case study sites expressed mistrust of stewardship actors, and some even felt great anxiety and anger towards these organizations. It has been commented that such feelings are at the crux of most natural resource conflicts (Frankie, Mata, and Vinson 2004). One solution to this situation is to involve landowners in the stewardship process. While landowners are generally involved with the management of local NGOs, they are largely absent from the decision-making processes of government conservation organizations such as Parks Canada, Ontario Parks and Conservation Authorities. Such inclusion would aid in gaining landowner support for environmental initiatives and would aid communication with landowners. Involving landowners would also contribute to a broader voice for decisions regarding protecting nature.

### **4) Recognize the sacrifice of private landowners**

It has been argued that landowner rights are not under attack by environmental movements, but rather it is now recognized that landowner rights should depend upon the natural features on the land (Freyfogle 1999). However, such an argument overlooks one important fact: natural features generally exist because landowners have allowed them to exist. The majority of natural features that remain on private land do so because of the stewardship of landowners. As such it becomes difficult to criticize landowners for their environmental records.

Landowners also have a close connection with their property. During this study many landowners in Point Pelee and Rondeau hinted that if they do lose their property

not many outsiders would be upset, as it is hard to feel sorry for people who own lakefront cottages. While this may be true, it does ignore the reality on-the-ground. Several of the cottage owners interviewed did not appear to be well-off financially. In addition, for many these areas are where their childhood memories occurred, where they have raised their families, and where a sense of community has been built. If it is correct that a major obstacle to conservation is undervaluing the relationship between people and their landscape (Diamont, Eugester, and Mitchell 2003) then this is certainly such a case.

Taken together it can be seen that landowners are largely responsible for the remaining presence of nature that exists on their land, and they often have a close relationship with this land. As such if they are being made to bear the burden of stewardship efforts, or even to lose their land for environmental purposes, the least that could be done is to recognize and respect this sacrifice. Recognition could take such forms as naming stewardship protected areas after prominent landowners, recognizing landowners through commemorative exhibits at stewardship protected areas, or simply having conservation professionals respect the role that landowners play in stewardship efforts.

##### **5) Create land-use legislation for the Carolinian Life Zone**

Two conditions were apparent when examining landowners in the Point Pelee and Rondeau case study sites. First, the condition of uncertainty regarding land tenure in both sites was the prime source for a tremendous amount of landowner anxiety, mistrust and anger. Second, both locations faced threats to land tenure which actually

increased landowner acceptance of regulations. At Rondeau the threat was having cottage leases expire within RPP. At Point Pelee the threat was having a construction freeze artificially lower property values, making properties much easier to purchase and/or expropriate. In both instances it was found that landowners would rather comply with strict environmental regulations than lose their land. Comprehensive land-use legislation, such as exists in Ontario for the Niagara Escarpment and the Oak Ridges Moraine, may actually increase landowner support for stewardship. Such legislation would lay bare land-use planning, and thus remove any fear of the unknown. Legislation would also zone certain lands according to strict environmental standards. From an environmental perspective such a recommendation would focus the attention of many conservation organizations in the Carolinian Life Zone upon one set goal. From a political perspective it would involve the government more systematically in the protection of the Carolinian area, and thus implicate them in the success or failure of its environmental protection.

## **6) Create a private reserve system for all of Canada**

In many other countries, including those less developed than Canada, governments support stewardship through national private reserve systems (examples noted in Brown and Mitchell 1991). For example, Brazil has a system known as the Reserva Particular do Patrimônio Natural which, as of December 2005, includes 425 private protected areas covering over 442,000 hectares of land (Natural Reserva Particular Do Patrimônio 2005). This system directs government support to these areas by providing financial incentives, by creating regulations and management plans for



their proper ecological functioning, and by providing periodic reports on their status. For Canada such a system would have two major advantages. First, it would provide financial assistance to stewardship efforts. Second, government support would provide money to assess the protected areas, and thus it would be better known how much land stewardship actually protects.

#### **7) Use the findings of this study when promoting stewardship efforts**

The findings of this study indicate many areas which are useful when promoting stewardship efforts. For example, the study found that while stewardship ethics are found among 88% of all interviewees, only 11% of landowners indicated being influenced by religious ethics. Therefore trying to espouse the stewardship message through this theme would likely not be the most effective strategy. On the other hand, approximately 70% of landowners indicated being influenced by experiences in their childhood, by the recreational aspect of nature, or by the personal benefits that nature brings to their children and themselves. Therefore promoting stewardship through such personal messages will likely find a greater deal of success. Such useful findings also exist in regards to property rights, information distribution, and how programs are implemented.

### 5.3 Study Limitations

Several limitations of this study exist due to constraints of time and resources. The research involves only one region in Ontario, and it seems logical that landowners in different areas of the country, under different pressures, might provide different answers regarding their support for stewardship. For example, many of the landowners interviewed in Point Pelee and Rondeau had land that required active re-naturalization, which is typical of the highly altered Carolinian Life Zone. If, instead, the land already existed in a natural state, and stewardship pressure was simply to formalize this natural state, a different relationship dynamic would likely have developed between landowners and stewardship initiatives.

In addition, all landowner interviews took place at the case study sites between January 2006 and June 2006. Since all three areas remain involved in stewardship initiatives it seems likely that landowner thoughts on stewardship will change through time. While it is suspected that many of the themes would remain the same, there is no doubt that the levels of support and/or animosity towards stewardship have changed over time, and will likely continue to change into the future. Indeed, a limitation of this study was the inability to fully report on landowner comments, for fear of identifying landowners and thus adversely affecting current and future stewardship relationship.

Finally, the scope of stewardship being studied should not be forgotten. Questions about protected areas stewardship are quite different from questions about other types of stewardship, such as volunteers donating their time to a conservation organization and/or cause. This study does not attempt to explore support for those types of stewardship.

## 5.4 Future Research

The literature review undertaken for this research, and a study of on-the-ground conservation in Ontario, found gaps in the knowledge and delivery of stewardship. In addition the findings of this specific research are only a first step in understanding landowner support for stewardship. Therefore future research is needed to:

### **1) Determine the amount of nature protected on private land**

The basis for the definition of stewardship is landowners protecting nature (Brown and Mitchell 1991). However, it is not known how much nature private land protects. In Canada private land protection numbers can only be guessed at, and the best that can be said is that the amount of land is likely significant (Dempsey, Dearden, and Nelson 2002). Worldwide the IUCN has a broad sense of the amount of formal private land protection, but it has no numbers on the amount of land informally protected on private land (Chape et al. 2003). This ignorance is likely a great loss for stewardship. If private land numbers are as significant as is assumed stewardship is missing out on a tremendous degree of political and financial clout that may be gained by knowing its' true significance. Therefore it would be useful to quantify the amount of nature on private land through appropriate mapping techniques.

### **2) Recommend methods to overcome gaps in stewardship services**

A large number of conservation organizations undertake stewardship initiatives, such as government bodies, NGOs, and membership-based organizations. The sizeable number of actors is likely a bonus for stewardship, as it allows landowners to choose

between multiple organizations, and between programs that are active at very local levels or at international scales. Unfortunately, because the delivery of stewardship is not organized certain gaps exist in stewardship services. For example, by examining the location of land trusts belonging to the Ontario Land Trust Alliance (OLTA 2006) it is obvious that in many areas of Ontario land trusts do not exist. As such there is a likely a latent demand amongst landowners for land trust services such as conservation easements. Research on stewardship services could determine the best method by which to overcome such gaps, and therefore to encourage and increase stewardship.

### **3) Explore stewardship implementation from an institutional perspective**

The purpose of this research was to examine landowner perceptions of stewardship. The belief was that the accuracy of landowner perceptions was not as significant as understanding the perceptions, and that stewardship initiatives would be wise to base their delivery around these perceptions. However, this is not meant to dismiss research which stresses how institutional aspects affect stewardship implementation (Ack et al. 2001). Certainly conservation organizations can better deliver stewardship initiatives regardless of landowner perceptions. As such it would be useful to explore stewardship implementation within Ontario from this institutional perspective.

### **4) Determine whether the findings of this study are representative**

This research attempted to get beyond participation/non-participation in stewardship initiatives by realising that landowners can be involved in multiple

stewardship programs, or they may be involved in no programs yet still be affected by stewardship efforts. As such the research methodology attempted to understand landowner experience with, and opinions of, stewardship in an in-depth manner. The drawback to such qualitative research is that it is difficult to determine to what extent the findings are representative of a larger sample (Patton 1990). As such it would be useful to analyse the findings of this study by using quantitative research methods, and by focusing on a large sample. The result would be to provide conclusions regarding the significance of the findings of this study, and therefore to further understand which landowner support factors are important for stewardship initiatives.

### 5.5 Study Conclusion

The goal of this research was to determine what factors influence landowner support for stewardship in the Carolinian Life Zone, and analyse how this knowledge can improve stewardship implementation. From the interview findings it appears that certain factors stressed in the academic literature are not the most vital, notably economic constraints and land-use regulations. The main factors influencing support for landowners in the Point Pelee, Rondeau and Long Point case study sites are a landowner pre-disposition towards stewardship action and information, which is tempered by a lack of trust towards stewardship actors. As such the recommendations suggest concrete ways in which landowners can be included in stewardship work and recognized for their actions, as well as changes to the institutional system of stewardship which may ease landowner mistrust.

It was also found that the stewardship context cannot be over-stressed, with differences in support factors based upon the level of existing regulation, the number of stewardship actors, the remaining nature found in the landscape and the type of landowner being targeted. From this perspective recommendations are made for future research to focus upon the gaps in stewardship knowledge, such as the level of service available in these different contexts, and the practice of stewardship from a more institutional perspective. In conclusion, while stewardship implementation does face many challenges related to landowner support in the Carolinian Life Zone, a focus upon the role of the landowner in the stewardship process can provide concrete recommendations to increase future landowner support.

Appendix A: Point Pelee Interview Summary Matrix

<b>THEMES/SUBTHEMES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>STEWARDSHIP ETHIC</b>												
- expressed through childhood						x				x	x	
- personal ethics				x		x		x			x	
- social ethics	x	x	x	x			x	x				
- religiousness/spirituality										x		
<b>Understanding</b>												
- claim to understand better	x	x	x		x						x	x
- gaps (landscape connection)												
- not as beneficial as claim												
- miss the societal value												
- existing protection enough	n	n	n			n		n	n		n	
- results of inaction												
<b>Constraints</b>												
- economic	n		n	x	x	n		n	n	x		
- time/effort	n	n	n									
- realistic												
<b>Behaviour</b>												
- evident in behaviour		x					x		x	x		
- stewardship on their land										x		
- participated in a program							x			x		
- belong to a group		x							x			
<b>PROPERTY RIGHTS CONCERNS</b>												
- property rights concern				x				x			x	
- loss of privacy						x						
- fear restrictions on land	x	x	x		x	x	x	x				x
- lack acknowledgement					x	x						x
<b>BUREAUCRACY</b>												
- lack of information	x	x	x	x	x	x	x	x	x	x	x	x
- happy with information												
- lack of technical information		x										
<b>How Implemented</b>												
- formats												
- information complicated										n		
- information targeted												
<b>Who Implements</b>												
- mistrust state	x	x	x	x		x					x	x
- prefer face-to-face	x		x						x		x	
- trust local			x		n	n		n	n			x
- know local	x		x			x		x	x			
- like local	x					x		x		x		
- influenced by action of neighbours												
Ecologically Knowledgeable	x	x					x		x			
Financially Wasteful	x	x		x	x	x						

Appendix B: Rondeau Interview Summary Matrix

THEMES/SUBTHEMES	1	2	3	4	5	6	7	8	9	10	11	12
<b>STEWARDSHIP ETHIC</b>												
- expressed through childhood	x	x	x	x	x	x	x		x		x	x
- personal ethics	x	x	x	x		x	x	x	x	x		x
- social ethics										x		
- religiousness/spirituality					x	x						
<b>Understanding</b>												
- claim to understand better	x	x	x	x	x	x	x	x	x	x	x	x
- gaps (landscape connection)	?	?	?	?	?	?	?	?	?	?	?	?
- not as beneficial as claim	x											
- miss the societal value												
- existing protection enough	?	?	?	?	?	?	?	?	?	?	?	?
- results of inaction												
<b>Constraints</b>												
- economic	n	n			n		n					
- time/effort	n	n			n		n					
- realistic												
<b>Behaviour</b>												
- evident in behaviour				x		x	x	x	x		x	x
- stewardship on their land				x		x	x				x	x
- participated in a program							x					
- belong to a group								x	x			
<b>PROPERTY RIGHTS CONCERNS</b>												
- property rights concern	n					x	n					n
- loss of privacy				n			n			n	n	
- fear restrictions on land	x	x			x							
- lack acknowledgement			x		x	x	x	x		x	x	x
<b>BUREAUCRACY</b>												
- lack of information	x	x	x	x	x	x	x	x		x	x	x
- happy with information												
- lack of technical information												
<b>How Implemented</b>												
- formats												
- information complicated												
- information targeted												
<b>Who Implements</b>												
- mistrust state	x			n		x	x	x		x		
- prefer face-to-face			x		x		x					
- trust local		n	x	x			x			x		
- know local	x	x	x		x		x	x	x	x	x	
- like local					x		x	x	x	x	n	x
- influenced by action of neighbours												
Ecologically Knowledgeable				x				x				
Financially Wasteful		x				x					x	



Appendix C: Long Point Interview Summary Matrix

<b>THEMES/SUBTHEMES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>STEWARDSHIP ETHIC</b>										
- expressed through childhood	x	x	x		x	x	x	x		
- personal ethics		x			x				x	x
- social ethics	x							x	x	x
- religiousness/spirituality										
<b>Understanding</b>										
- claim to understand better						x	x			
- gaps (landscape connection)				x			x		x	
- not as beneficial as claim										
- miss the societal value										
- existing protection enough	n					x				
- results of inaction										
<b>Constraints</b>										
- economic	x	x	x	x	x			x	x	x
- time/effort	x		x	x	x					x
- realistic		x	x	x	x	x				x
<b>Behaviour</b>										
- evident in behaviour	x	x	x	x	x	x	x	x	x	x
- stewardship on their land	x	x	x	x	x	x	x	x		x
- participated in a program	x	x	x	x	x			x		x
- belong to a group	x	x		x				x	x	x
<b>PROPERTY RIGHTS CONCERNS</b>										
- property rights concern	x	x		x		x			x	
- loss of privacy										
- fear restrictions on land										
- lack acknowledgement				x					x	
<b>BUREAUCRACY</b>										
- lack of information			x		x	x	x			
- happy with information		x		x						x
- lack of technical information										
<b>How Implemented</b>										
- formats										
- information complicated					x					
- information targeted										
<b>Who Implements</b>										
- mistrust state	x									
- prefer face-to-face	x	x	x	x	x			x	x	x
- trust local	x								n	
- know local			x							x
- like local		x		x	x			x		
- influenced by action of neighbours	x							x		
Ecologically Knowledgeable	x	x		x	x			x		x
Financially Wasteful							x		x	

## Bibliography

- Ack, Bradley L., Carol Daly, Yvonne Everett, Juan Mendoza, Mary Mitsos, and Ron Ochs. 2001. The Practice of Stewardship: Caring for and Healing Ecosystems and Communities. *Journal of Sustainable Forestry* 12 (3-4):117-141.
- Agrawal, Arun, and Clark C. Gibson. 1999. Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development* 27 (4):629-649.
- Allen, Gary M., Paul F.J. Eagles, and Steven D. Price. 1990. *Conserving Carolinian Canada*. Waterloo: University of Waterloo Press.
- Bakowsky, W., and J.L. Riley. 1994. A Survey of the Prairie and Savannas of Southwestern Ontario. In *In Spirit of the Land: Our Prairie Legacy - Proceedings of the 13th North American Prairie Conference, August, 1992.*, edited by R. G. Wickett, P. D. Lewis, A. Woodliffe and P. Pratt. Windsor: City of Windsor, Department of Parks and Recreation.
- Beechey, Tom J., Paul A. Gray, Sheila Boyd, and Sylvia Roskiewicz. 1999. Southern Ontario's Natural Heritage Estate: Ecological Perspectives and Information, Research and Science Needs. In *Parks and Protected Areas Research in Ontario: Proceedings of the PRFO Annual Meeting*, edited by N. Pollock-Ellwand, K. Van Osch and J. G. Nelson. Waterloo: PRFO/Heritage Resources Centre.
- Bell, C.D., R.K. Roberts, and B.C. English. 1994. A Logit Analysis of Participation in Tennessee's Forest Stewardship Program. *Journal of Agricultural and Applied Economics* 26 (2):463-472.
- Bennett, Graham, and Piet Wit. 2001. The Development and Application of Ecological Networks: A Review of Proposal, Plans, and Programme: IUCN.
- Borrini-Feyerabend, Grazia, Ashish Kothari, and Gonzalo Oviedo. 2004. In *Indigenous and Local Communities and Protected Areas: Toward Equity and Enhanced Conservation*. Gland, Switzerland: IUCN.
- Bourke, L., and A.E. Luloff. 1994. Attitudes Toward the Management of Non-industrial Private Forest Land. *Society and Natural Resources* 7:445-457.
- Brandon, Katrina, Kent H. Redford, and Stuart E. Sanderson. 1998. *Parks in peril: People, Politics, and Protected Areas*. Washington, D.C.: Island Press.
- Brown, Jessica. 1998. Stewardship: An International Perspective. *Environments* 26 (1):1-7.
- Brown, Jessica, and B. Mitchell. 1991. Private Initiatives for Protected Areas in South America. In *Partnership For Protection: New Strategies for Planning and Management for Protected Areas*, edited by S. Stolton and N. Dudley. London: Earthscan Publications Limited.
- . 1997. Extending the Reach of National Parks and Protected Areas: Local Stewardship Initiatives. In *National Parks and Protected Areas: keystones to Conservation and Sustainable Development*, edited by J. G. Nelson and R. Serafin. Berlin: Springer-Verlag.
- . 2000. The Stewardship Approach and its Relevance for Protected Landscapes. *George Wright Forum* 17 (1):70-79.

- Brown, Jessica, Nora Mitchell, and Jacquelyn Tuxill. 2003. Partnership and Lived-in Landscapes. *Parks* 13 (2):31-41.
- Brown, Rebecca, and Glenn Harris. 2005. Comanagement of Wildlife Corridors: The Case for Citizen Participation in the Algonquin to Adirondack Proposal. *Journal of Environmental Management* 74:97-106.
- Brunson, M.W., D.T. Yarrow, D.S. Roberts, D.C. Guynn Jr., and M.R. Kuhns. 1996. Nonindustrial Private Forest Owners and Ecosystem Management: Can They Work Together? *Journal of Forestry* 94 (6):14-21.
- Bultena, G.L., and E.O. Hoiberg. 1983. Factors Affecting Farmers Adoption of Conservation Tillage. *Journal of Soil and Water Conservation* 38:281-284.
- Canadian Environmental Advisory Council, The. 1991. A Protected Areas Vision for Canada: Ministry of Supply and Services.
- Carolinian Canada Coalition. 2004. The Big Picture. [Cited October 1, 2005] Available from <http://www.carolinian.org>.
- Centre for Land and Water Stewardship, The. 1994. Carolinian Canada Factsheet. In *Appreciating the Uniqueness of Carolinian Canada*. Guelph, ON: The Centre for Land and Water Stewardship.
- Chape, Stuart, Simon Blyth, Lucy Fish, Phillip Fox, and Mark Spalding. 2003. UN List of Protected Areas: IUCN and UNEP.
- Clark, T.W. 2002. *The Policy Process: A Practical Guide for Natural Resource Professionals*. New Haven, and London: Yale University Press.
- Clark, T.W., and A.H. Harvey. 1990. The Greater Yellowstone Ecosystem Policy Area. *Society and Natural Resources* 3 (3):281-284.
- Clark, T.W., and S.C. Minta. 1994. *Yellowstone's Future: Prospects for Ecosystem Science, Management and Policy*. Moose, Wyoming: Honested Publishing.
- Cope, Meghan. 2003. Coding Transcripts and Diaries. In *Key Methods in Geography*, edited by N. Clifford and G. Valentine. London, U.K.: Sage Publications.
- Cox, Kenneth W. 1995. Stewardship: Landowners as Partners in Conservation. In *Expanding Partnerships in Conservation*, edited by J. A. McNeely. Washington, D.C.: Island Press.
- Cutting, Marjorie, and Chris Cocklin. 1992. Planning for Forest Conservation in the Auckland Region, New Zealand. *Landscape and Urban Planning* 23:55-69.
- Daley, Salinda S., David T. Cobb, Peter T. Bromley, and Clyde E. Sorenson. 2004. Landowner Attitudes Regarding Wildlife Management on Private Land in North Carolina. *Wildlife Society Bulletin* 32 (1):209-219.
- Dearden, Philip, and Bruce Mitchell. 1998. *Environmental Change and Challenge: A Canadian Perspective*. Toronto: Oxford University Press.
- Dearden, Philip, and Rick Rollins. 2002. The Times They are Still A-Changin'. In *Parks and Protected Areas in Canada - Planning and Management*, edited by P. Dearden and R. Rollins. Toronto: Oxford University Press.
- Dedrick, J.P., T.E. Hall, R.B. Hull IV, and J.E. Johnson. 2000. The Forest Bank: An Experiment in Managing Fragmented Forests. *Journal of Forestry* 98 (3):22-25.
- Dempsey, Jessica, Philip Dearden, and J. Gordon Nelson. 2002. Stewardship: Expanding Ecosystem Protection. In *Parks and Protected Areas in Canada: Planning and Management*, edited by P. Dearden and R. Rollins. Toronto, Canada: Oxford University Press.

- Dey, I. 1993. *Qualitative Research Analysis: A User Friendly Guide for Social Scientists*. London, U.K.: Routledge.
- DeYoung, R. 1993. Changing Behaviour and Making it Stick: The Conceptualization and Management of Conservation Behaviour. *Environment and Behaviour* 25:485-505.
- Diamond, J.M. 1975. The Island Dilemma: Lessons of Modern Biogeographic Studies for the Design of Nature Reserves. *Biological Conservation* (7):129-146.
- Diamont, Rolf, J. Glenn Eugester, and Nora J. Mitchell. 2003. Reinventing Conservation: A Practitioners View. In *Reconstructing Conservation: Finding Common Ground*, edited by B. A. Minter and R. E. Manning. Washington, D.C.: Island Press.
- Dudley, Nigel, Biksham Gujja, Bill Jackson, Jean-Paul Jeanrenaud, Gonzalo Oriedo, Adrian Phillips, Pedro Rosabel, Sue Stolton, and Sue Wells. 1991. Challenges for Protected Areas in the Twenty-First Century. In *Partnerships for Protection: New Strategies for Planning and Management for Protected Areas*, edited by S. Stolton and N. Dudley. London: Earthscan.
- Dugelby, Barbara, and Michelle Libby. 1998. Analyzing the Social Context at Parks in Peril Sites. In *Parks in Peril: People, Politics, and Protected Areas*, edited by K. Brandon, K. H. Redford and S. Sanderson. Washington, D.C.: Island Press.
- Dunn, Kevin. 2000. Interviewing. In *Qualitative Research Methods in Human Geography*, edited by I. Hay. Victoria, Australia: Oxford University Press.
- Dutcher, Daniel D., Jamers C. Finley, A.E. Luloff, and J.E. Johnson. 2004. Landowner Perceptions of Protecting and Establishing Riparian Forests: A Qualitative Analysis. *Society and Natural Resources* 17:319-332.
- Egan, Andrew, David Gibson, and Robert Whipkey. 2001. Evaluating the Effectiveness of the Forest Stewardship Program in West Virginia. *Journal of Forestry* 99 (3):31-36.
- Egan, Andrew, and S. Jones. 1993. Do Landowner Practices Reflect Beliefs? Implications for an Extension-research Partnership. *Journal of Forestry* 91 (10):39-45.
- Endicott, Eve, ed. 1993. *Land Conservation Through Public/Private Partnerships*. Washington, D.C.: Island Press.
- Environics. 2000. Survey of Farmers, Ranchers and Rural Landowners: Attitudes and Behaviours Regarding Land Stewardship.
- . 2001. Survey of Rural Landowners in Ontario: Attitudes and Behaviours Regarding Land Stewardship.
- Environment, Canada. 2005. *Forest Regions of Ontario* [cited November 10th 2005]. Available from <http://wildspace.ec.gc.ca/maps-e.html>.
- Erickson, Donna L., Robert L. Ryan, and Raymond De Young. 2002. Woodlots in the Rural Landscape: Landowner Motivations and Management Attitudes in a Michigan (USA) Case Study. *Landscape and Urban Planning* 58:101-112.
- Flader, Susan. 2003. Building Conservation On The Land: Aldo Leopold and the Tensions of Professionalism and Citizenship. In *Reconstructing Conservation: Finding Common Ground*, edited by B. A. Minter and R. E. Manning. Washington, D.C.: Island Press.
- Flannery, Timothy F. 1999. Debating Extinction. *Science* 283 (5399):182-183.

- Forman, R.T.T., and M. Godron. 1986. *Landscape Ecology*. Toronto, Canada: John Wiley and Sons.
- Fortwangler, Crystal L. 2003. The Winding Road. In *Contested Nature: Promoting International Biodiversity with Social Justice in the Twenty-First Century*, edited by S. R. Brechin, P. R. Wilhusen and C. L. Fortwanger. Albany, New York: State University of New York Press.
- Frankie, Gordon W., Alfonso Mata, and S. Bradleigh Vinson. 2004. Conclusions and Recommendations. In *Biodiversity Conservation in Costa Rica: Learning the Lessons in a Seasonal Dry Forest*, edited by G. W. Frankie, A. Mata and S. B. Vinson. London, England: University of Calgary Press.
- Freyfogle, Eric T. 1999. Land Ownership and the Level of Regulation: The Particulars of Owning. *Ecology Law Quarterly* 25:574-579.
- Ghimire, K.B., and Michel P. Pimbert. 1997. *Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas*. London, U.K.: Earthscan Publications.
- Goble, David D. 2002. The Problem of Unraveling: Biodiversity and Private Property in Land. *Idaho Law Review* (38):291.
- Gosselin, Chris. 2003. Natural Areas Policies, Regional Municipality of Waterloo, 1973 to 2001 and Beyond. In *Protected Areas and the Regional Imperative*, edited by J. G. Nelson, J. C. Day, L. M. Sportza, J. Loucky and C. Vasquez. Calgary: University of Calgary Press.
- Gustanski, Julie Ann. 2000. Protecting the Land: Conservation Easements, Voluntary Actions, and Private Lands. In *Protecting the Land: Conservation Easements Past, Present, and Future*, edited by J. A. Gustanski and R. H. Squires. Washington, D.C.: Island Press.
- Hardie, E.W., and P.J. Parks. 1996. Program Enrollment and Acreage Response to Reforestation Cost-sharing Programs. *Land Economics* 72 (2):248-260.
- Hilts, Stewart. 1993. Natural Heritage Stewardship Program. In *Environmental Stewardship: Studies in Active Earthkeeping*, edited by S. Lerner. Waterloo, Canada: University of Waterloo Publications.
- . 1994. The Natural Heritage Stewardship Program. In *Environmental stewardship: history, theory, and practice - workshop proceedings*, edited by M. A. Beavis. Winnipeg: University of Winnipeg, Institute of Urban Studies.
- Hilts, Stewart, M. Kirk, and R. Reid. 1986. *Islands of Green: Natural Heritage Protection in Ontario*. Toronto, Canada: The Ontario Heritage Federation.
- Hilts, Stewart, and P. Mitchell. 1998. *Caring For Your Land: A Stewardship Handbook for Carolinian Canada Landowners*. Guelph, ON: University of Guelph.
- Hilts, Stewart, and Tom Moull. 1990. The Natural Heritage Stewardship Program. In *Conserving Carolinian Canada*, edited by G. M. Allen, P. F. J. Eagles and S. D. Price. Waterloo: University of Waterloo Press.
- Hilts, Stewart, and R. Reid. 1993. *Creative Conservation: A Handbook for Ontario Land Trusts*. Don Mills: Federation of Ontario Naturalists.
- Hummel, Monte. 1995. *Protecting Canada's Endangered Spaces*. Toronto, ON: Key Porter Books.
- Inforesults. 1993. An Evaluation of the Environmental Farm Plan Pilot Project. Brampton, Ontario: Agriculture Canada.

- IUCN. 1994. Guidelines for the Protected Area Management Categories. Gland, Switzerland, and Cambridge, U.K.
- Jacobson, Michael G. 2002. Factors Affecting Private Forest Landowner Interest in Ecosystem Management: Linking Spatial and Survey Data. *Environmental Management* 30 (4):577-583.
- Jacobson, Michael G., Robert C. Abt, and Douglas R. Carter. 2000. Attitudes Toward Joint Forest Planning Among Private Landowners. *Journal of Sustainable Forestry* 11 (3):95-112.
- Janzen, D.H. 1989. The Evolutionary Biology of National Parks. *Conservation Biology* (3):109-112.
- Killan, Gerald. 1993. *Protected Places: A History of Ontario's Provincial Parks System*. Toronto: Dundurn Press Limited.
- Kitchin, R., and N. Tate. 2000. *Conducting Research in Human Geography: Theory, Methodology and Practice*. London, England: Longman.
- Klupfel, Ellen J. 2000. Achievements and Opportunities in Promoting the Ontario Environmental Farm Plan. *Environments* 28 (1):21-36.
- Knight, Mark. 2005. Personal Photos.
- Kramer, Randall, Carel van Schaik, and Julie Johnson. 1997. *Last Stand: Protected Areas and the Defense of Tropical Biodiversity*. New York, New York: Oxford University Press.
- Kreuter, Urs P., Mark R. Tays, and J. Richard Conner. 2004. Landowner Willingness to Participate in a Texas Brush Reduction Program. *Journal of Range Management* 57 (May):230-237.
- Langholz, Jeffrey. 2002. Privately Owned Parks. In *Making Parks Work: Strategies for Preserving Tropical Nature*, edited by J. Terborgh, et al. Washington D.C.: Island Press.
- Larson, B.M., J.L. Riley, E. Snell, and H.G. Godschalk. 1999. The Woodland Heritage of Southern Ontario: A Study of Ecological Change, Distribution and Significance.
- Lawrence, Patrick, and J. Gordon Nelson. 1999. Great Lakes and Lake Erie Floods: A Life Cycle and Civics Perspective. *Environments* 27 (1):1-22.
- Lerner, Sally. 1993. The Importance of Active Earthkeeping. In *Environmental Stewardship: Studies in Active Earthkeeping*, edited by S. Lerner. Waterloo: University of Waterloo Press.
- LeRoy, Sylvia. 2005. Beyond the Public Park Paradigm. *George Wright Forum* 22 (2):33-42.
- Line, Jennifer M., Madeline J. Austen, Michael J. Oldham, and Peter J. Sorrill. 2000. Representation and Conservation of Rare Plants in Ontario's Carolinian Zone Provincial and National Parks. In *Parks and Protected Areas Research in Ontario, Proceedings of the PRFO Annual Meeting, April 22nd and 23rd, 1999*, edited by N. Pollock-Ellwand, K. Van Osch and J. G. Nelson. Waterloo, ON: Heritage Resources Centre.
- Long Point World Biosphere Reserve Foundation. 2005. *Long Point World Biosphere Reserve 2004* [cited October 11th 2005]. Available from <http://www.kwic.com/~longpointbio/bio.htm>.

- Longhurst, Robyn. 2003. Semi-structured Interviews and Focus Groups. In *Key Methods in Geography*, edited by N. Clifford and G. Valentine. London, England: Sage Publications.
- Lovejoy, S.B., and T.L. Napier. 1986. Conserving Soil: Sociological Insights. *Journal of Soil and Water Conservation* 41:304-308.
- Lowenthal, David. 2003. Conservation Stewardship: Legacies from Vermont's Marsh. In *Reconstructing Conservation: Finding Common Ground*, edited by B. A. Minter and R. E. Manning. Washington, D.C.: Island Press.
- Lynne, Gary D., J.S. Shonkwiler, and Leandro R. Rola. 1988. Attitudes and Farmer Conservation Behaviour. *American Journal of Agricultural Economics* 70 (1):12-19.
- MacKinnon, Kathy. 1997. The Ecological Foundations of Biodiversity Protection. In *Last Stand: Protected Areas and the Defense of Tropical Biodiversity*, edited by R. Kramer, C. Van Schaik and J. Johnson. New York, New York: Oxford University Press.
- McLachlan, S. M., and D.R. Bazely. 2003. Outcomes of Longterm Deciduous Forest Restoration in Southwestern Ontario, Canada. *Biological Conservation* 113 (2003):156-169.
- McNamee, Kevin. 2002. From Wild Places to Endangered Spaces. In *Parks and Protected Areas in Canada: Planning and Management*, edited by P. Dearden and R. Rollins. Toronto: Oxford University Press.
- McNeely, Jeffrey A. 1995. Indigenous People and National Parks in South America. In *National Parks without People? The South American Experience*, edited by S. Amend and T. Amend. Gland, Switzerland: IUCN.
- , ed. 1992. *Parks For Life: Report of the IVth World Congress on National Parks and Protected Areas*. Gland, Switzerland: IUCN.
- Meffe, G.K., and C.R. Carroll, eds. 1997. *Principles of Conservation Biology*. Sunderland, Massachusetts: Sinauer Associates.
- Mehta, Jai N., and Joel T. Heinen. 2001. Does Community-Based Conservation Shape Favourable Attitudes Among Locals? An Empirical Study from Nepal. *Environmental Management* 28 (2):165-177.
- Miller, K. 1996. *Balancing the Scales: Guidelines for Increasing Biodiversity's Chances through Bioregional Management*. Washington, D.C.: World Resources Institute.
- Miranada, Marie Lynn, and Sharon LaPalme. 1997. User Rights and Biodiversity Conservation. In *Last Stand: Protected Areas and the Defense of Tropical Biodiversity*, edited by R. Kramer, C. Van Schaik and J. Johnson. New York, New York: Oxford University Press.
- Mitchell, B., and Jessica Brown. 1998. Stewardship: A Working Definition. *Environments* 26 (1):8-17.
- . 2003. Stewardship and Protected Areas in a Global Context: Coping with Change and Fostering Civil Society. In *Reconstructing Conservation: Finding Common Ground*, edited by B. A. Minter and R. E. Manning. Washington, D.C.: Island Press.

- Molnar, Augusta, Sara J. Scherr, and Arvind Khare. 2004. Who Conserves the World's Forests? Community-driven Strategies to Protect Forests and Respect Rights. Washington, D.C.: Forest Trends and Ecoagricultural Partners.
- Morris, J., J. Mills, and I.M. Crawford. 2000. Promoting Farmer Uptake of Agri-environment Schemes: The Countryside Stewardship Arable Options Scheme. *Land Use Policy* 17:241-254.
- Moull, Tom, and Stewart Hilts. Date Unknown. *Protecting Ontario's Natural Heritage through Private Stewardship*: The Natural Heritage League.
- Murray, Will. 1995. Lessons From 35 Years of Private Preserve Management in the USA: The Preserve System of The Nature Conservancy. In *Expanding Partnerships in Conservation*, edited by J. A. McNeely. Washington, D.C.: Island Press.
- Myers, N., R.A. Mittermeier, C.G. Mittermeier, B. Da Fonesca, and J. Kent. 2000. Biodiversity Hotspots for Conservation Priorities. *Nature* 403:853-858.
- Nabhan, Gary Paul. 1995. Cultural Parallax in Viewing North American Habitats. In *Reinventing Nature? Responses to Postmodern Deconstruction*, edited by M. Soule and G. Lease. Washington, D.C.: Island Press.
- Nagubadi, V., K. McNamara, W. Hoover, and W. Mills Jr. 1996. Program Participation Behaviour of Nonindustrial Forest Landowners: A Probit Analysis. *Journal of Agricultural and Applied Economics* 28 (2):323-336.
- Napier, T.L., Sam E. McCarter, and Julia R. McCarter. 1995. Willingness of Ohio Land Owner-operators to Participate in a Wetlands Trading System. *Journal of Soil and Water Conservation* 50 (6):648-656.
- Napier, T.L., Cameron S. Thraen, and Silvana M. Camboni. 1988. Willingness of Land Operators to Participate in Government-sponsored Soil Erosion Control Programs. *Journal of Rural Studies* 4 (4):339-347.
- Napier, T.L., M. Tucker, and Sam E. McCarter. 2000. Adoption of Conservation Production Systems in Three Midwest Watersheds. *Journal of Soil and Water Conservation* 55 (2):123-134.
- Natural Reserva Particular Do Patrimônio. 2005. [cited March 6, 2006]. Available from [http://www.ibama.gov.br/siucweb/rppn/relatorio\\_por\\_bioma.rtf](http://www.ibama.gov.br/siucweb/rppn/relatorio_por_bioma.rtf).
- Nelson, J. Gordon, and R. Serafin. 1997. Keys to Life: Contributions of National Parks and Protected Areas to Heritage Conservation, Tourism and Sustainable Development. In *National Parks and Protected Areas: keystones to Conservation and Sustainable Development*, edited by J. G. Nelson and R. Serafin. Berlin and Heidelberg: Springer-Verlag.
- Nelson, J. Gordon, and L.M. Sportza. 2000. Evolving Protected Areas Thought and Practice. *George Wright Forum* 17 (2):59-69.
- Noss, Reed F. 1987a. Corridors in Real Landscapes: a Reply to Simberloff and Cox. *Conservation Biology* (1):159-164.
- . 1987b. Protected Areas: How Much is Enough? In *National Parks and Protected Areas: Their Role in Environmental Protection*, edited by R. G. Wright. Cambridge, Massachusetts: Blackwell Science Inc.
- . 1987c. Protecting Natural Areas in Fragmented Landscapes. *Natural Areas Journal* (7):2-13.



- Noss, Reed F., and Allen Y. Cooperrider. 1994. *Saving Nature's Legacy: Protecting and Restoring Biodiversity*. Washington, D.C.: Island Press.
- OMMA and OMNR. 1992. Wetlands Policy Statement: A Statement of the Ontario Government Policy issued under the Authority of S.3 of the Planning Act. Toronto.
- OMNR. 2004. Working Towards a Stewardship Strategy for Ontario: A Discussion Paper.
- OLTA. 2006. *OLTA Members 2006* [cited March 5th 2006]. Available from <http://www.ontariolandtrustalliance.org/members.htm>.
- Ontario Ministry of Finance. 2006. Ontario Population Projections Update: 2005-2031. Toronto, ON: Queen's Printer for Ontario.
- Patton, M.Q. 1990. *Qualitative Evaluation and Research Methods*. 2nd ed. Newbury Park, California: Sage Publications.
- Peace, Robin. 2000. Computers, Qualitative Data and Geographic Research. In *Qualitative Research Methods in Human Geography*, edited by I. Hay. Victoria, Australia: Oxford University Press.
- Phillips, Adrian. 1998. Preface. *Environments* 26 (1):v-vii.
- Pimbert, Michel P., and Jules N. Pretty. 1995. Parks, People, and Professionals: Putting 'Participation' into Protected Areas Management, edited by U. N. R. I. f. S. Development.
- Porterfield, R.L., and J.E. Moak. 1977. Timber Management for Nonindustrial Forest Owners. *Journal of Applied Forestry* 1 (3):2-6.
- Porterie, Gaston L., Norman B. Gartley and Alan J. Horton. 1985. Stewardship Contracts. *Journal of Forestry* 1(3):2-6.
- Prato, Tony, and Dan Fagre. 2005. *National Parks and Protected Areas*. Ames, Iowa: Blackwell Publishers.
- Preston, F.W. 1960. Time and Space and the Variation of Species. *Ecology* (41):611-627.
- Primack, Richard B. 1993. *Essentials of Conservation Biology*. Cambridge, Massachusetts: Harvard University Press.
- Purvis, Amy, John P. Hoehn, Vernon L. Sorenson, and Francis J. Pierce. 1989. Farmers' Response to a Filter Strip Program: Results from a Contingent Valuation Survey. *Journal of Soil and Water Conservation* 44 (5):501-504.
- Reading, R.P., T.W. Clark, and S. Kellert. 1994. Attitudes and Knowledge of People Living in the Greater Yellowstone Ecosystem. *Society and Natural Resources* 7:349-365.
- Redford, Kent H., Katrina Brandon, and Steven Sanderson. 1998. Holding Ground. In *Parks in Peril: People, Politics, and Protected Areas*, edited by K. Brandon, K. H. Redford and S. Sanderson. Washington, D.C.: Island Press.
- Reznicek, A.A., and P.M. Catling. 1989. Flora of Long Point, Regional Municipality of Haldimand-Norfolk, Ontario. *The Michigan Botanist* 28 (3):99-175.
- Rickenbach, M.G., and A. Scott Reed. 2002. Cross-Boundary Cooperation in a Watershed Context: The Sentiments of Private Forest Landowners. *Environmental Management* 30 (4):584-594.

- Rondeau Cottagers Association. 2006. *Facts: Rondeau Cottagers Association History, and Local Community Involvement* 2002 [cited March 2nd 2006]. Available from <http://www.rondeaucottagers.ca/facts.htm>.
- Russell, Ronald W., Stephen J. Hecnar, Gary Mouland, and G. Douglas Haffner. 2000. Pesticide Accumulation in Point Pelee Amphibians. In *Parks and Protected Areas Research in Ontario, 1999, Proceedings of the PRFO Annual Meeting, April 22nd and 23rd, 1999, Guelph, ON*, edited by N. Pollock-Ellwand, K. Van Osch and J. G. Nelson. Waterloo: Heritage Resources Centre.
- Ryan, Robert L., Donna L. Erickson, and Raymond De Young. 2003. Farmers' Motivations for Adopting Conservation Practices Along Riparian Zones in a Mid-western Agricultural Watershed. *Journal of Environmental Planning and Management* 46 (1):19-37.
- Ryan, Robert L., and Juliet T. Hansel Walker. 2003. Protecting and Managing Private Farmland and Public Greenways in the Urban Fringe. *Landscape and Urban Planning* (68):183-198.
- Schelhas, John, Terry Jantzi, Caleb Kleppner, Kim O'Connor, and Tom Thacher. 1997. Meeting Farmer's Needs Through Forest Stewardship. *Journal of Forestry* 95 (2):33-38.
- Scott, Dan, and Roger Suffling. 2000. *Climate Change and Canada's National Parks*. Toronto: Environment Canada.
- Searle, Rick. 2000. *Phantom Parks: The Struggle to Save Canada's National Parks*. Toronto: Key Porter.
- Shafer, Craig L. 1990. *Nature Reserves: Island Theory and Conservation Practice*. Washington, D.C.: The Smithsonian Institute.
- Shogren, Jason F. 2000. The Western Experience. In *Beyond Backyard Environmentalism*, edited by C. Sabel, A. Fung and B. Karkkainen. Boston: Boston Press.
- Simberloff, D.S. 1974. Equilibrium Theory of Island Biogeography and Ecology. *Annual Review of Ecology and Systematics*:161-182.
- Skibicki, Andrew, and J. Gordon Nelson. 1993. *A Human Ecological Approach to Biodiversity Planning and Management: Point Pelee, Rondeau, and Long Point Peninsulas, Lake Erie, Canada*. Waterloo: Heritage Resources Centre.
- Slater, Tom. 1994. The Landowner in a Stewardship Program. In *Stewardship '94 - Revisiting the Land Ethic, Caring for the Land*, edited by N. Layard and L. Delbrouck. Vancouver, B.C.: Ministry of Environment, Parks and Lands.
- Slocombe, D.S. 1998. Lessons From Experience with Ecosystem-Based Management. *Landscape and Urban Planning* (40):31-39.
- Squires, Roderick H. 2000. Preface. In *Protecting the Land: Conservation Easements Past, Present, and Future*, edited by J. A. Gustanski and R. H. Squires. Washington, D.C.: Island Press.
- Statistics Canada. 2002. *2001 Community Profiles* [cited June 11<sup>th</sup>]. Available from <http://www12.statcan.ca/english/Profil01/CP01/Index.cfm?Lang=E>.
- Stevens, Stan. 1997. The Legacy of Yellowstone. In *Conservation Through Cultural Survival: Indigenous Peoples and Protected Areas*, edited by S. Stevens. Washington, D.C.: Island Press.

- Stevens, Thomas H., Sarah White, David B. Kittredge, and Donald Dennis. 2002. Factors Affecting Nipf Landowner Participation in Management Programs: A Massachusetts Case Study. *Journal of Forest Economics* 8:169-184.
- Stewardship Working Group, The. Federal-Provincial-Territorial. 2002. Canada's Stewardship Agenda: Naturally Connecting Canadians. Ottawa.
- Stokowski, Patricia A. 2003. Community Values in Conservation. In *Reconstructing Conservation: Finding Common Ground*, edited by B. A. Minter and R. E. Manning. Washington, D.C.: Island Press.
- Strauss, A. 1987. *Qualitative Analysis for Social Scientists*. Cambridge, U.K.: Cambridge University Press.
- Strauss, A., and J. Corban. 1990. *Basics of Qualitative Research: Grounded Theory, Procedures and Techniques*. Newbury Park: Sage Publications.
- Terborgh, John, and B. Winter. 1980. Some Cases of Extinction. In *Conservation Biology: An Evolutionary-Ecological Perspective*, edited by M. Soule and B. A. Wilcox. Sunderland, Massachusetts: Sinauer.
- Theberge, Jeanette, and John B. Theberge. 2002. Application of Ecological Concepts to the Management of Protected Areas. In *Parks and Protected Areas in Canada - Planning and Management*, edited by P. Dearden and R. Rollins. Toronto: Oxford University Press.
- UNESCO. 1971. Convention on Wetlands of International Importance Especially as Waterfowl Habitat. In *The Ramsar Convention on Wetlands*. Ramsar, Iran.
- . 1974. Task Force On: Criteria and Guidelines for the Choice and Establishment of Biosphere Reserves, Final Report. In *MAB Report Series #22*. Paris, France: UNESCO.
- Van Schaik, Carel, John Terborgh, and Barbara Dugelby. 1997. The Silent Crisis: The State of Rain Forest Nature Preserves. In *Last Stand: Protected Areas and the Defense of Tropical Biodiversity*, edited by R. Kramer, C. Van Schaik and J. Johnson. New York, New York: Oxford University Press.
- VanOsch, K. 1996. Planning for Agriculture in the Countryside through Farmer Plans, University of Waterloo, Waterloo, Ontario.
- Waldron, G. 2003. *Trees of the Carolinian Forest: A Guide to Species, Their Ecology, and Uses*. Erin, ON: Boston Mills Press.
- Weber, Edward P. 2003. *Bringing Society Back In: Grassroots Ecosystem Management, Accountability, and Sustainable Communities*. Cambridge, Massachusetts: The MIT Press.
- West, Patrick C., and Steven R. Brechin. 1991. *Resident Peoples and National Parks: Social Dilemmas and Strategies in Conservation*. Tuscon: University of Arizona Press.
- Western, David, and R. Michael Wright. 1994. *Natural Connections: Perspectives in Community-Based Conservation*. Washington, D.C.: Island Press.
- Wilson, E.O., and Robert H. MacArthur. 1967. *The Theory of Island Biogeography*. Princeton, N.J.: Princeton University Press.
- Wilson, G.A. 1996. Farmer Environmental Attitudes and Esa Participation. *Geoforum* 27 (2):115-131.

- Wilson, G.A., and Kaley Hart. 2001. Farmer Participation in Agri-environmental Schemes: Toward Conservation-oriented Thinking? *Sociologia Ruralis* 41 (2):254-274.
- Yin, R.K. 1989. *Case Study Research: Design and Methods*. Newbury Park, California: Sage Publications.