THE INFLUENCE OF SCIENCE ON CONSERVATION PLANNING IN THE LONG POINT REGION: HOW CHARACTERIZATIONS OF SCIENCE AFFECT CONSERVATION APPLICATIONS

by

Sarah Ellen Ramey

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Abstract

This research explored the role of science and civil society environmental organizations in conservation planning, using a case study of Ontario's Long Point region. Science is a dynamic field that is constantly adapting and evolving (Bocking 2001; Kohler 2006; Loo 2007), and is increasingly relied on as a basis for decision-making in conservation planning, policy and management (Bocking 2001; Loo 2006; Theberge & Theberge 2009). The role of civil society in conservation planning has also grown and organizations that operate outside of government now play an important role in acquiring land, conducting monitoring activities, and promoting local stewardship (Merenlender et al. 2004; Whitelaw 2005; Reed 2007; Conrad & Daoust 2008; Dempsey & Dearden 2009). Considering the activities of these organizations, and the underlying science that informs them, is essential given the increasing prevalence of this type of work and the increasing ability of civil society organizations to affect conservation planning outcomes.

Through a literature review, document analysis, and semi-structured interviews, this research considered how characterizations of science, applications of science, and recent trends in science have influenced conservation plans, policies, and actions in the Long Point region. The results illustrate how different forms of information were considered and applied when prioritizing, justifying, and implementing conservation projects and provide a location-specific example of how the modern features of conservation planning and management are influencing environmental outcomes. Specifically, the results suggest how place-based knowledge can potentially be disseminated through policy and planning initiatives and also suggest how different forms of information may interact to influence overall project credibility. These findings have implications for both planning theory and practice by contributing to our understanding of the role of science in shaping conservation practices, the role of civil society in driving conservation innovation, and the importance of local knowledge in supporting effective conservation actions.

Chapter 1: Introduction

1.1 CONTEXT

The interactions between science, society, and stewardship activities have changed through time, as have their influence on conservation planning. Although science was once used unquestioningly, new concerns and activities have drawn attention to the values that shape science and the interactions between science and society that produce knowledge (Bocking 2007; Skogstad & Hartley 2007). This has resulted in the identification of alternate forms of knowledge and a recent understanding of how different types of information may interact to influence conservation planning and management (Callon 1999; Berkes et al. 2000; Olsson & Folke 2001; Yil-Pelkonen & Kohl 2005; Fazey et al. 2006).

Recently a new paradigm of conservation planning and management has emerged, which embeds the principles of sustainability, collaboration, and science to pursue conservation objectives (Phillips 2003; Francis 2008). The role of civil society in conservation planning has also grown and organizations that operate outside of government now play an important role in acquiring land, conducting monitoring activities, and promoting local stewardship (Merenlender et al. 2004; Whitelaw 2005; Reed 2007; Conrad & Daoust 2008; Dempsey & Dearden 2009).

This research considers these conservation planning activities (particularly land acquisition, habitat restoration, and monitoring projects) from a collaborative planning perspective, and specifically examines how civil society environmental organizations use science to prioritize, justify, and implement projects and initiatives. Considering these conservation activities, and their underlying science, is essential given the increasing prevalence of this type of work and the increasing ability of civil society organizations to shape the current and future conservation landscape.

1.2 OBJECTIVES

This research was based on the ideas of modern conservation planning (Phillips 2003; Francis 2008) and collaborative planning theory (Healey 1998) and asked the question "*How are modern trends in stewardship science influencing the conservation planning and management activities of civil society environmental organizations?* " Conceptually, it was guided by the idea that landscapes, culture, technology, economics and politics shape the creation of science and subsequently affect its application (Callon 1999; Bocking 2007). To explore these interactions within modern conservation planning, I investigated the following three areas:

- *Characterizations of science* : what types of science were being used;
- *Applications of science* : how, why, and where science was used;
- *Trends in science* : how the use of science has changed and evolved.

Specifically, I illustrate how recent trends in stewardship science have been applied in a specific geographic setting, explore the interactions between scientific and other forms of information in the decision-making process, and examine the dissemination of knowledge through planning. This study supports collaborative planning theory by suggesting how local knowledge can be integrated in decision-making (Healey 1998) and by demonstrating the role of civil society in promoting conservation innovation (Whitelaw 2005).

1.3 METHODS

The research was conducted using a case study of seven civil society environmental organizations that operate in the Long Point region, which is located in southern Ontario on the north shore of Lake Erie (see figure 1.1). This region is considered one of the best examples of Canada's remaining Carolinian forest (Craig et al. 2003) and has Canada's highest number of endangered and threatened species (Craig et al. 2003; McCarthy et al. 2006). It is also home to a wide variety of local, regional, and national environmental organizations and agencies.

Within the case study, I used a triangulated research method consisting of a literature review, document analysis, and semi-structured interviews. During the research each environmental organization was assessed independently for diverging patterns but the

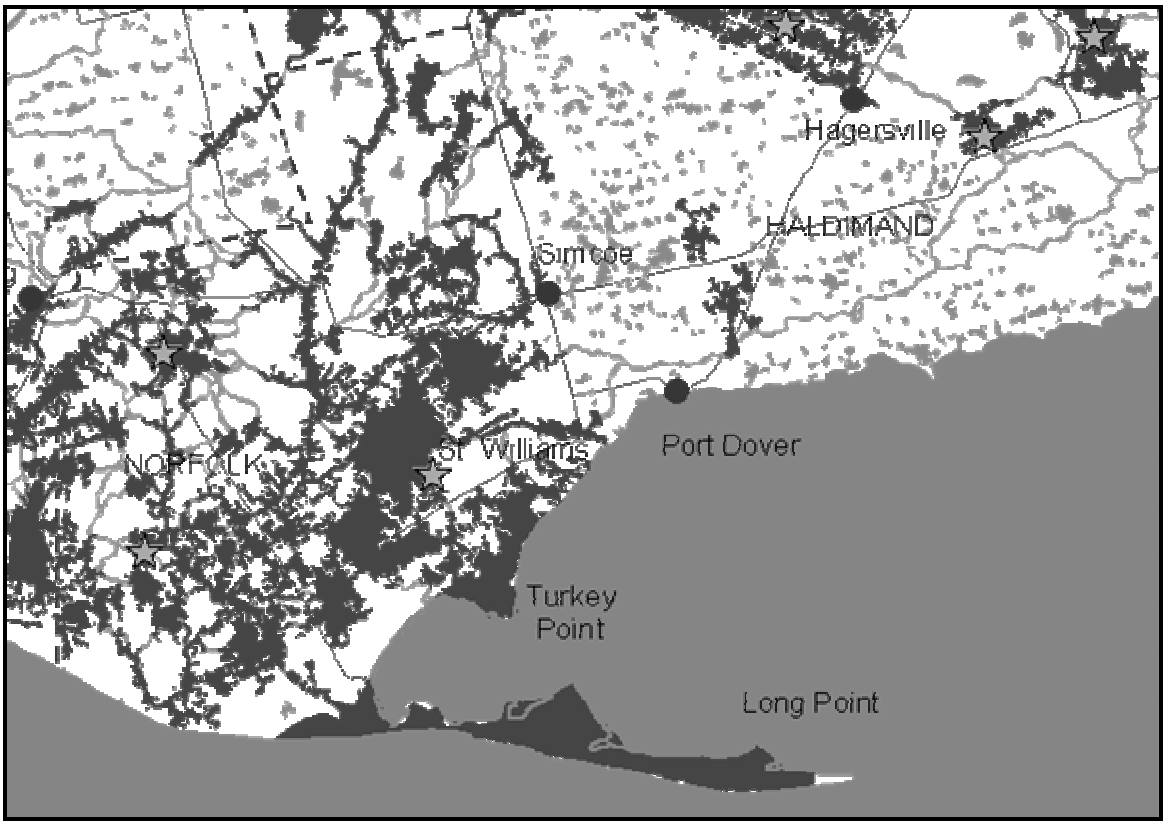

Figure 1.1 The Long Point region; shaded areas represent protected natural areas (from Carolinian Canada 2004).

individual findings were integrated during the results and analysis (Berg 2007). Methods are discussed in greater detail in Chapter 2.

1.4 STRUCTURE

This report is divided into seven chapters. Chapter 2 describes the research approach and methods in further detail and also provides background information on the Long Point region and the environmental organizations studied. Chapter 3 consists of a literature review that illustrates the characteristics of different forms of stewardship science, summarizes the history of interaction between science and planning in

Canada, and describes how these interactions have produced certain trends in modern conservation planning. Chapter 3 also contains a conceptual framework based on these ideas that guided the remainder of the research and analysis.

Chapter 4 presents the results of the interviews and document analysis, and describes how Long Point environmental organizations characterized and applied stewardship science. It also describes modern trends in stewardship science that were expressed by the respondents and revealed in the reviewed documents. Chapter 5 builds on Chapter 4 by tying the results to the conceptual framework outlined in Chapter 3, while discussing the broader implications of the research with respect to collaborative and conservation planning theory and practice.

Chapter 6 concludes with a summary of the contributions of this research and suggests areas for further study. Ultimately, I hope that my examination of the role of science in planning will help planners to effectively incorporate stewardship knowledge into planning decisions and to apply science to achieve conservation goals. Additionally, I believe that considering the role of civil society environmental organizations in these activities will help to illustrate their contributions to conservation planning and allow them to better engage in planning and policy discussions.

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