Does Stewardship Work? Lessons from the Garry Oak Ecosystems Recovery Team

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Abstract: The current model for species recovery in Canada relies heavily upon voluntary stewardship. Definitions of stewardship vary. A lack of clarity about the relative importance of social vs. ecological goals of stewardship obscures our ability to think clearly about where and how to seek delivery of different components of recovery programs. Science and stewardship (defined in this paper as voluntary conservation-oriented activities undertaken by 'grassroots' and nonprofessional individuals and organizations) take different approaches to conservation. Most often these are complementary, and both contribute greatly to recovery. Stewardship has a relatively smaller contribution to make to recovery programs where the species and ecosystems (1) have little public appeal, (2) are poorly understood and face high risks from inappropriate action, and (3) require a large number of scientific and technical activities for recovery. Two-thirds of the more than 200 suggested activities in the *Recovery Strategy for Garry Oak and Associated Ecosystems in Canada, 2001-2006* require scientific or related technical expertise and resources for implementation. Most of the 117 species at risk in Garry oak and associated ecosystems are cryptic and/or difficult to identify, extremely rare, and poorly understood, which limits the applicability of non-expert stewardship to the overall recovery program. Some stewardship groups express reluctance to undertake careful planning, assessment, and expert consultation before embarking on invasive species removal programs, and stewards rarely have the resources, expertise, or interest to institute scientifically meaningful monitoring programs. The Garry Oak Ecosystems Recovery Team attempts to bridge the gap between science and stewardship through dialogue at the planning table, and by providing technically-based extension tools, active guidance in using the tools, and financial support for expert consultation and monitoring. A major obstacle to comprehensive recovery is the increasing reliance of decision makers on volunteer solutions to ecological problems. We must accept that volunteers are unlikely or unable to participate in activities they do not enjoy or understand and that are beyond their expertise and resources. We must ensure that institutional capacity to define, manage, and implement scientific and technical actions is in place, and that funding to support these projects is available.

Key Words: extension, Garry Oak Ecosystems Recovery Team, recovery, species at risk, stewardship, volunteer, British Columbia

Introduction

The current model for species recovery in Canada relies heavily upon voluntary stewardship initiatives undertaken by private landowners, nonprofit organizations, industry, local governments, and others. This is explicitly outlined in the three foundation 'pillars' of the species at risk program in Canada (Environment Canada 2003): the federal *Species at Risk Act* (Canada 2002), the federal-provincial-territorial *Accord for the Protection of Species at Risk* (Governments of Canada et al. 1996), and the Habitat Stewardship Program for Species at Risk (Canadian Wildlife Service 2004).

A stewardship approach is firmly embedded in the *Species at Risk Act*, as illustrated in the following passages from the Act:

> Recognizing that…stewardship activities contributing to the conservation of wildlife species and their habitat should be supported to prevent species from becoming at risk… (Canada 2002, Preamble, paragraph 30)

> The Minister…may establish a stewardship action plan that creates incentives and other measures to support voluntary stewardship actions taken by any government in Canada, organization or person… (Canada 2002, Section 10.1)

Similarly, the *Accord for the Protection of Species at Risk* (Governments of Canada et al. 1996), a 1996 agreement among Canadian federal, provincial, and territorial jurisdictions to develop programs and policies for species at risk, states the following:

> We recognize that…stewardship activities contributing to the conservation of species should be supported as an integral element in preventing species from becoming at risk….

> We agree to…recognize, foster and support effective and long term stewardship by resource users and managers, landowners, and other citizens…

The third pillar, the Habitat Stewardship Program for Species at Risk, is a funding program designed to support "Canadians from all walks of life" in activities contributing to the recovery of species at risk and the fostering of partnerships towards species recovery (Canadian Wildlife Service 2004). The web site for the program states "Under the *Species at Risk Act*, stewardship is the first step in protecting critical habitat".

Given the pivotal role that stewardship plays in the national approach to recovery of species at risk, it is important to examine some of the implications of this approach. Towards this end, I address the following topics:

1. The meaning of the term stewardship, and the implications of some of the different definitions of the term

2. Inherent differences between science-based (or expert-based) and stewardship-based approaches to recovery
3. The scope of applicability of stewardship approaches to recovery, using the recovery strategy (Garry Oak Ecosystems Recovery Team 2002) and associated recovery program developed and coordinated by the Garry Oak Ecosystems Recovery Team as a case study
4. How to fill potential gaps in recovery programs and help ensure that the full range of recovery activities are implemented

It must be emphasized that I do not present a rigorous examination of the literature, programs, or practices pertaining to the application of stewardship approaches to recovery. I have limited the scope of this paper to presenting reflections and insights, based upon a review of a few relevant documents, and upon experiences within the recovery program for Garry oak ecosystems and their associated species at risk. My intent is to highlight a few key issues for recovery policy makers and practitioners, and hopefully to contribute to the improvement of policies and practices. It is also important to clarify at the outset that I do not question the crucial importance of incorporating both science-based and stewardship-based approaches into recovery programs. I provide a critical analysis of the limits of applying stewardship approaches to the broad scope of recovery needs, but the fact that I do not provide a complementary analysis of the benefits of stewardship should not be interpreted to mean that I do not recognize that, indeed, such benefits exist.

Stewardship is a Slippery Concept

Limited investigation revealed that, although many governments and nongovernmental organizations incorporate the term stewardship into documents outlining organizational vision, goals, objectives, or programs (e.g., Environment Canada 1995; Governments of Canada et al. 1996; Sandborn 1998; Nature Conservancy of Canada 2000; Federal-Provincial-Territorial Stewardship Working Group 2002, 2003; Wildlife Habitat Canada 2002; Environment Canada 2003; Canadian Wildlife Service 2004; National Recovery Working Group 2004), few of these documents define what stewardship means, either in a general sense or within their own particular context. Surprisingly, an environmental application of the word is absent from at least one standard dictionary (Barber 2001). The *Dictionary of Natural Resource Management* (Dunster and Dunster 1996) defines stewardship as "caring for the land and associated resources so that healthy ecosystems can be passed on to future generations." Additional Canadian definitions of stewardship include the following:

> Stewardship is a conservation tool that aims to involve all Canadians in the effort to preserve biodiversity and recover endangered species and their habitats. (Biodiversity Convention Office 2004)

> Stewardship, simply stated, means Canadians—including landowners and other individual citizens, private companies and volunteers—are caring for our land, air and water, and sustaining the natural processes on which life depends. (Federal-Provincial-Territorial Stewardship Working Group 2002)

> Stewardship: voluntary action by landowners and others in a landscape that is of conservation benefit (particularly with respect to species at risk habitat). (National Recovery Working Group 2004)

> Stewardship refers to the wide range of voluntary actions that Canadians take to care for the environment, ranging from conserving wild species and their habitat directly, to improving the quality of habitat by mitigating human impact. (Canadian Wildlife Service 2004)

> Stewardship…is defined as a land ethic where people care for our land, water and air as parts of a natural system, and in a way that sustains and enhances it for generations to come. (Wildlife Habitat Canada 2002)

Two primary concepts are embodied, to a greater or lesser extent, in the above definitions: the *goals of the activities* (healthy ecosystems, sustaining natural processes, preserving biodiversity, recovering endangered species and their habitats), and a *particular type of process to achieve the goals* (various actions by different sectors of society).

Contextual use of the term stewardship in these and a number of other documents (Environment Canada 1995; Governments of Canada et al. 1996; Sandborn 1998; Nature Conservancy of Canada 2000; Environment Canada 2003; Federal-Provincial-Territorial Stewardship Working Group 2003; Canadian Wildlife Service 2004) reveals many additional embedded concepts, some of which are contradictory. For example, stewardship is sometimes used in the broadest context to mean *all* conservation activities employed by the widest range of governmental and nongovernmental entities, while in other cases, it has a more restricted meaning in terms of

- type of participant (e.g., everyone except federal, provincial, or territorial governments; ordinary Canadians; private landowners; community-based partnerships; nonprofessionals),
- motivation for activity (e.g., based on a land-use ethic, voluntary, nonregulatory), or
- type of activity (e.g., habitat- or ecosystem-based; activities outside of protected areas; proactive initiatives that preclude or forestall the need for habitat restoration or reintroductions; long-term management to protect natural values following site acquisition, including habitat restoration and reintroductions where ecologically appropriate).

Amidst this general confusion about the meaning of the term is a lack of clarity about the relative importance of social vs. ecological goals and objectives. In a number of relevant documents, the social aspects of stewardship are granted equal or higher prominence, if not higher priority, than the ecological aspects. For example, of the eight "Principles of Canadian Stewardship" outlined in Canada's Stewardship Agenda (Federal-Provincial-Territorial Stewardship Working Group 2002), only two contain any reference to ecology, ecosystems, or actions based on knowledge. The remaining six address social aspects of how programs are organized and how they relate to Canadian society and values. Goals and objectives in this document follow suit. Although social goals and objectives clearly embody their own intrinsic values, it is perhaps self-evident to state that, within a recovery context, ecological goals and objectives must be the primary focus. Social goals and objectives, such as partnership- and community-building, and enjoyable or educational experiences, must be viewed as valuable side benefits and/or means to ecological ends. I suggest that lack of clarity about the concept of stewardship has obscured our ability to think clearly about where and how to seek delivery of different components of recovery programs.

Science and Stewardship

Assuming that science provides an appropriate and fundamental (although not exclusive) basis for understanding ecosystems and their many components, and hence a basis for defining recovery goals and objectives and identifying ecologically appropriate stewardship actions, it is useful to compare some of the intrinsic attributes of the scientific and stewardship domains. The concepts of science and stewardship may or may not be mutually exclusive depending on how stewardship is defined. For illustrative purposes, I define stewardship as voluntary conservation-oriented activities undertaken by 'grassroots' and nonprofessional individuals and nongovernmental organizations that are motivated by a desire to experience nature, a passion for natural values, and a concern for sustaining ecological integrity into the future. I recognize that some volunteer stewards do have scientific or related expertise, but I assume for the sake of this discussion that most do not. Although I use this relatively limited definition (in terms of type of participant) in this paper, many of the issues raised in this discussion will also apply to broader definitions of stewardship to some degree.

Conservation-oriented science and stewardship both address ecological issues, but they embody distinct approaches and attitudes within their respective missions. Science is characterized by being

- research oriented;
- dependent on rigorous, precise methodologies, and often on highly technical tools;
- reductive in nature, often addressing fine details and minutiae and often based on methodical and repetitive tasks;
- conservative and cautious; and

- focused on complexity and explicit acknowledgment of, and attempts to reduce, uncertainty.

In contrast, stewardship approaches tend to be

- action oriented;
- dependent on tasks that can be carried out by individuals with no or minimal training, and usually with limited access to technical tools and other resources;
- focused on issues and activities with high public appeal;
- activist in nature;
- based on assumed, common sense, and/or scientifically-grounded but relatively straightforward ecological benefits; and
- reluctant to be constrained by uncertainty.

Ideally, scientific and stewardship approaches to conservation and recovery should be complementary. Science should inform stewardship practice by helping define ecological goals and objectives, and by helping identify appropriate and effective actions to meet those goals. Stewardship, in turn, should be one component of the implementation arm of recovery as guided by science. In addition, stewardship should inform science by illuminating gaps or flaws in knowledge and data interpretation that become apparent through implementation, as well as the real-world applicability of scientifically-driven management recommendations.

In practice, this relationship works well and provides tremendous benefit to recovery in many circumstances; however, the relative contribution of stewardship to an overall recovery program may comprise a greater or lesser contribution to the total effort, depending in large part on the nature, state of knowledge about, and recovery requirements of the relevant species or ecosystems. Stewardship contributions will likely be proportionally smaller where the species and ecosystems (1) have relatively little public appeal, (2) are poorly understood and face high risks from inappropriate action, and (3) require a large number of research and other scientific and technical activities for their recovery.

Stewardship and the Garry Oak Ecosystems Recovery Program

The Garry Oak Ecosystems Recovery Team (GOERT) was founded in 1999 to address recovery of imperiled Garry oak ecosystems and the many species at risk that inhabit those ecosystems. Garry oak ecosystems in Canada have been reduced to less than 5% of their former extent since European settlement (Fuchs 2001; Lea 2002). Currently, 117 species that either occur, or formerly occurred, in Garry oak or associated ecosystems are on the British Columbia Red and Blue Lists of species at risk (Garry Oak Ecosystems Recovery Team 2002: species list updated February 2004). Twenty-eight of these species are at risk on a global scale, 31 have also been nationally listed by the Committee on the Status of Endangered Wildlife in Canada, and

many more are likely candidates for national listing upon assessment. Major threats to Garry oak ecosystems and most of the associated species at risk include habitat loss and fragmentation, invasive exotic species, and the consequences of fire exclusion following European settlement (Fuchs 2001; Garry Oak Ecosystems Recovery Team 2002). Until very recently, very little research had been conducted in Garry oak ecosystems in Canada; hence, knowledge gaps are immense.

GOERT consists of a strong and diverse partnership of 24 committed and talented individuals, including representatives from 1 First Nation, 3 federal agencies, 2 provincial agencies, 4 local governments or local government agencies, 1 academic institution, and 15 nongovernmental organizations. A number of members are also consultants in the environmental and communications fields. While the recovery team serves as the coordinating body, GOERT's recovery program is implemented primarily by a number of associated Recovery Implementation Groups and Steering Committees (consisting of approximately 80 individuals from about 30 governmental and nongovernmental agencies), as well as dozens of other partners throughout the range of Garry oak ecosystems in Canada. This broad base of support underlines the fact that the program reflects a wide range of views on recovery needs, not only those of scientists and other professional experts.

GOERT's Recovery Program is guided by the *Recovery Strategy for Garry Oak and Associated Ecosystems and their Associated Species at Risk in Canada, 2001-2006, Draft 20 February 2002* (Garry Oak Ecosystems Recovery Team 2002). The scope and scale of the program is enormous, and entails inventory and mapping, conservation planning and site securement, restoration and management of protected areas as well as linkages and buffers, protection and recovery of species at risk, research, and public education and extension. This diverse program requires the contributions of a wide range of resources and personnel for delivery. The recovery team is extremely fortunate for the investments of time, money, and other resources that continue to be made.

Out of more than 200 suggested activities listed in GOERT's recovery strategy, approximately two-thirds of them require scientific or related technical expertise and resources for their implementation. The remaining one-third are potentially appropriate for implementation within non-expert and/or volunteer-based initiatives. The vast majority of these pertain to communications, public education, and organizational development, including distribution of various types of publications and other information (to be developed primarily by scientists and other experts) to different target audiences, building links and partnerships among agencies, and supporting the organizational structure of the recovery program. Additional key activities pertain to landowner contact and site securement. There is also an important role for stewardship related to site restoration and management, but GOERT's recovery strategy emphasizes that such programs should be designed and implemented within an adaptive management context, hence requiring some degree of expert leadership and involvement. This consideration becomes increasingly important at more sensitive sites, and is critically important where species at risk

may be present, given the potentially grave consequences of inappropriate management. Similarly, because of the many uncertainties and knowledge gaps pertaining to management of sites and species at risk, appropriately designed and rigorous monitoring is essential for tracking the efficacy of management actions in reaching recovery objectives, which highlights the requirement for expert participation.

The very nature of the species at risk in Garry oak and associated ecosystems limits the applicability of non-expert stewardship to the overall recovery program. The 117 species include 3 mosses, 71 vascular plants, 1 earthworm, 3 dragonflies, 5 bugs, 2 flies, 13 butterflies, 2 reptiles, 14 birds, and 3 mammals. Two-thirds or more of these species are cryptic and/or extremely difficult to identify in the field; consequently, taxonomic experts are required to provide reliable identification. The sheer number of species at risk that could potentially inhabit a given site demands that highly experienced and discerning eyes, coupled with extensive knowledge of habitat associations, phenology, and other biological and ecological attributes of those species, are required for conducting inventories and designing site- and species-specific management strategies. Most of the species are extremely rare; hence, the consequences of inappropriate actions are potentially extremely serious. At the same time, most of the species are very poorly understood, so caution is essential, and research and rigorous monitoring are key components of the recovery program. Additionally, cryptic, non-showy species are unlikely to attract much public interest in their protection or active participation in initiatives targeting their recovery.

The requirements for expert contributions to recovery, or conversely the limits of applicability of voluntary, 'grassroots' stewardship, need not be problematic. Given the broad scope of GOERT's recovery program, there is more than enough to do, necessitating the participation of many and diverse contributors. Problems arise when policy makers and practitioners are not cognizant of the potential pitfalls of expecting program delivery by unsuitable partners, and seek seemingly expedient but inappropriate solutions to complex recovery problems.

Although the many partners and contributors to the GOERT program continue to make appropriate and effective contributions to recovery, there are also obstacles and occasional tensions. For example, community interest in invasive species removal in local parks and protected areas is growing. Increasing numbers of individuals are stepping forward and dedicating countless hours of labour to the cause. Unfortunately, volunteer participation typically drops off after the large exotic shrubs have been removed and ongoing management entails the tedious task of removing a multitude of tiny recruits, year after year after year. A paid workforce is often required to supplement the work of volunteers at this stage of the process. Some volunteer-based groups tend to be reluctant to take on ecological assessment and careful planning prior to embarking on invasive species removal, such as is recommended in GOERT's *Decision Support Tool for Invasive Species* (Murray and Jones 2002). Although this tool provides clear, step-by-step, user-friendly instructions for assessment and planning, some stewards are deterred by the length of the document and the need to do 'paperwork' prior to 'getting on with the job'.

Stewardship groups rarely have funding for consulting with professional experts, and indeed some individuals have expressed resentment at the suggestion that such consultation, particularly pertaining to species at risk, may be required in planning invasive species removal programs. Similarly, volunteer stewards rarely have the resources, expertise, or interest to institute scientifically meaningful monitoring programs. There is often a strong impetus to proceed without such planning and monitoring, which may be due, in part, to two factors: (1) the assumption that well-intentioned invasive species removal activities provide ecological benefit, even in the absence of evidence. This can be reflected in the desire to move ahead despite uncertainty, and/or the focus on visually apparent attributes such as the absence of exotic shrubs rather than on ecological complexity such as the potential negative impacts of soil disturbance or population decline of a cryptic endangered plant; and (2) the position that the activities have intrinsic value regardless of ecological benefit because they provide opportunities for community stewardship (i.e., the emphasis is placed on social values).

Perhaps most importantly, a major obstacle to comprehensive recovery pertains to the increasing reliance of decision makers (and associated government funding programs) on volunteer solutions to ecological problems. It is critical that adequate resources also be directed to scientific and technical contributions throughout the recovery process. In many cases, scientific and technical activities must not only be financially supported, but also initiated and managed by government or other agencies with appropriate expertise and resources. GOERT's recovery program continues to be seriously constrained by a shortage of agency and expert personnel to develop and manage recovery projects. If local nongovernmental organizations and community-based stewardship groups lack the capacity, expertise, awareness, or interest in conducting such activities, they will not get done. In other words, species and ecosystem recovery will be successful only if those responsible ensure that the full range of recovery activities is implemented, and that adequate and appropriate resources are provided.

Conclusions

The GOERT program addresses the issues discussed in this paper in a number of ways. First, solutions are grounded in GOERT's organizational structure. Professional and nonprofessional, scientist and non-scientist, expert and non-expert, and government and nongovernment representatives sit at the same planning and implementation tables. GOERT members share a remarkably unified vision of recovery, and participants generally recognize, respect, and value the different kinds of contributions made by different groups and individuals. When tensions and differences of perspectives arise, members are most often able to learn from the differences.

Second, GOERT has placed considerable emphasis on the development of extension tools (e.g., *Decision Support Tool for Invasive Species* (Murray and Jones 2002), *Invasive Species Stewardship Manual* (Garry Oak Ecosystems Recovery Team 2003a), and *Species at Risk Stewardship Manua*l (Garry Oak Ecosystems Recovery Team 2003b) to assist stewards and other

target audiences to apply ecologically appropriate management, and hence to help bridge the gap between science and stewardship. Although these tools are prerequisites for effective extension, their development is only a beginning. All of the tools emphasize that on-site expert consultation is often required, and that monitoring is important. We have financially supported a few of our partners who have undertaken such activities. We will continue this in the future, if possible, and will also continue to encourage and support our partners in seeking funding directly for these activities. We have also actively guided a few of our partners through the use of the Decision Support Tool. It is clear that this kind of direct, person-to-person communication is an integral part of an effective extension program. We recognize that we need to continue to improve our extension tools in response to user feedback, and to refine how we deliver our information. However, when we are faced with reluctance to accept the complexities of assessment and planning by our stewardship partners, we must also continue to emphasize that there are few shortcuts to ecologically responsible management.

Rarely will volunteer stewards offer their time to do activities they do not enjoy, nor is it likely they will undertake activities they do not understand. After all, who would? In addition, volunteers cannot implement recovery actions that are beyond their expertise and resources. We should accept these facts. We must recognize that volunteer stewards can and will accomplish what they want, and what they are able, to contribute. These contributions continue to be enormous, invaluable, and essential for recovery. At the same time, we must acknowledge that recovery also requires many other types of activities. We need to ensure that these other activities are undertaken by those able to do so. Assuming that volunteer stewardship is going to cover this ground is unrealistic, and ultimately may prove extremely costly for the survival of species and ecosystems at risk. It is incumbent on decision makers to ensure that institutional capacity to define, manage, and/or directly implement such recovery actions is in place, be it within or without government, and that direct funding to support these projects is available. The future of our ecosystems and species at risk depends on it.

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References

Barber, K., editor. 2001. The Canadian Oxford dictionary. Oxford University Press Canada, Don Mills, Ontario.

Biodiversity Convention Office. 2004. Stewardship. Available from http://www.bco.ec.gc.ca/en/primers/stewardship.cfm (accessed 20 February 2004).

Canada. 2002. Bill C-5. An Act Respecting the Protection of Wildlife Species at Risk in Canada. Statutes of Canada. Public Works and Government Services Canada–Publishing, Ottawa, Ontario.

Canadian Wildlife Service. 2004. Habitat Stewardship Program. Available from http://www.cws-scf.ec.gc.ca/hsp-pih/intor_e.cfm (accessed 20 February 2004).

Dunster, J., and K. Dunster. 1996. Dictionary of natural resource management. UBC Press, Vancouver, British Columbia.

Environment Canada. 1995. Canadian biodiversity strategy. Canada's response to the Convention on Biological Diversity. Minister of Supply and Services, Ottawa, Ontario.

Environment Canada. 2003. Environment Canada 2003-2004 estimates. Part III—report on plans and priorities. Environment Canada, Ottawa, Ontario.

Federal-Provincial-Territorial Stewardship Working Group. 2002. Canada's stewardship agenda. Naturally connecting Canadians. Stewardship Division, Canadian Wildlife Service, Environment Canada, Ottawa, Ontario.

Federal-Provincial-Territorial Stewardship Working Group. 2003. Canada's stewardship agenda. Implementation of priority actions. Stewardship Division, Canadian Wildlife Service, Environment Canada, Ottawa, Ontario.

Fuchs, M.A. 2001. Towards a recovery strategy for Garry oak and associated ecosystems in Canada: ecological assessment and literature review. Technical report GBEI/EC-00-030. Environment Canada, Canadian Wildlife Service, Pacific and Yukon Region, Delta, British Columbia.

Garry Oak Ecosystems Recovery Team. 2002. Recovery strategy for Garry oak and associated ecosystems and their associated species at risk in Canada, 2001–2006. Draft 20 February 2002. Garry Oak Ecosystems Recovery Team, Victoria, British Columbia.

Garry Oak Ecosystems Recovery Team. 2003a. Invasive species in Garry oak and associated ecosystems in British Columbia. Garry Oak Ecosystems Recovery Team, Victoria, British Columbia.

Garry Oak Ecosystems Recovery Team. 2003b. Species at risk in Garry oak and associated ecosystems in British Columbia. Garry Oak Ecosystems Recovery Team, Victoria, British Columbia.

Governments of Canada, Provinces and Territories. 1996. Accord for the Protection of Species at Risk. Unpublished document.

Lea, T. 2002. Historical Garry oak ecosystems of Greater Victoria and Saanich Peninsula. 1:20,000 map. British Columbia Ministry of Sustainable Resource Management, Terrestrial Information Branch, Victoria, British Columbia.

Murray, C., and R.K. Jones. 2002. Decision support tool for invasive species in Garry oak ecosystems. Prepared by ESSA Technologies Ltd. Garry Oak Ecosystems Recovery Team, Victoria, British Columbia.

National Recovery Working Group. 2004. Recovery handbook. February 2004. Working draft. Recovery of Nationally Endangered Wildlife, Ottawa, Ontario.

Nature Conservancy of Canada. 2000. Stewardship manual. Draft December 2000. Nature Conservancy of Canada, Toronto, Ontario.

Sandborn. C. 1998. Towards a "full service" stewardship centre in British Columbia. Draft. Abridged 1999. Greenways Technical Committee, Victoria, British Columbia.

Wildlife Habitat Canada. 2002. Volunteer sector stewardship in Canada. Wildlife Habitat Canada, Ottawa, Ontario.