

LESSONS LEARNED FOR ECOLOGICAL REHABILITATION FROM AN INVESTIGATION OF THE REGIONAL MUNICIPALITY OF WATERLOO, ONTARIO

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ABSTRACT

Ecological rehabilitation has a potential role in improving the ecological integrity of large areas through reconnecting and reintegrating landscapes fragmented by human use. The research aimed to find what factors, if any, pose obstacles to or opportunities for ecological rehabilitation activity, and consequently might hinder its contribution to environmental sustainability.

The Regional Municipality of Waterloo, having a goal of becoming a sustainable regional community, was investigated as a case study of potential obstacles and opportunities to rehabilitation practice. Local practitioners' experiences were compared with literature findings. This comparison highlighted that the literature and practitioners may focus on different scales for rehabilitation, and emphasize different aspects of the process. While the literature stressed a need to consider project context and proposed somewhat general guides to practice, practitioners emphasized a need for attention to project implementation, and voiced pragmatic and site-specific concerns, such as funding, access to sites, and the difficulties posed by a public preference for manicured landscapes.

The findings led to recommendations to aid planners and practitioners to facilitate, and the policy context to be altered, to facilitate future ecological rehabilitation in the Region of Waterloo.

Introduction

Ecological rehabilitation has taken root in the Regional Municipality of Waterloo. While the Region of Waterloo may be similar to other southwestern Ontario mixed rural/urban municipalities, there is a history of strong support for improvement of the natural environment in regional planning policy. The Region of Waterloo declares an aim to become a sustainable regional community, including environmental integrity (*Regional Official Policies Plan* 1996: s. 2.1), and explicitly supports ecological rehabilitation (described under various terms) of degraded areas. The many projects found in the Region of Waterloo, differing in size, involving different players, and arising from varied motivations, make this an interesting and appropriate place to examine opportunities and obstacles encountered in the practice of ecological rehabilitation.

This investigation of cases found in the Region of Waterloo sheds some light on how the practitioner, the planner and the politician (through the development of the policy context) might facilitate undertaking ecological rehabilitation. Therefore, this presentation concentrates on lessons learned and recommendations offered by rehabilitation practitioners.

The presentation will clarify use of the term “ecological rehabilitation,” and provide a brief overview of the research process and the findings forming the basis of recommendations and assertions, and, finally, present a summary of the key lessons and recommendations arising from the research.

Overview of the Research

The research was undertaken as part of the author’s Master of Environmental Studies degree in Planning, at the University of Waterloo. The author entered the research with an interest in ecological rehabilitation as a means to reconnect disrupted ecological patterns in inhabited landscapes. Rehabilitation was viewed as a means to relink remnant patches of native ecosystems; broadly, to increase a landscape’s “ecological function.” The research originated with a belief that taking a landscape or regional approach to the identification and coordination of rehabilitation efforts would present the wisest use of often scarce rehabilitation resources. However, the research uncovered more pragmatic challenges facing practitioners, challenges that hinder landscape or regional approaches to planning and management of rehabilitation activities.

The term “ecological rehabilitation” was adopted to describe those activities seeking to intentionally improve an area to an ecologically self-sustaining state. The term was favoured over the more common “ecological restoration,” because it does not exclude those projects not seeking to “restore” a site to an historic state. “Rehabilitation” seemed to better acknowledge the role of human values in shaping a project, and to encompass a wide range of projects with different degrees of intention/intervention. The author acknowledges continued debate about appropriate terminology for this activity (e.g., Cairns 1993).

Interviews with practitioners from eleven urban and rural rehabilitation projects in the Region of Waterloo formed the basis of the findings. These cases were selected from among some 57 projects in-progress or completed in the Region of Waterloo, from an inventory of 79 projects (not including urban, private lots) in various stages of completion. The experiences uncovered might be considered snapshots of the selected projects, rather than a comprehensive documentation of the state of rehabilitation practice in the Region of Waterloo. Even so, several key issues and concerns surfaced that likely reflect the experiences of other projects.

There is a great deal of prescriptive literature on ecological rehabilitation; many authors offered advice especially on the process or steps to take in organizing and implementing a rehabilitation project. The experiences of the practitioners were contrasted and compared with literature findings, highlighting concurrence of opinion, and apparent gaps in the literature where future research efforts might be concentrated.

Findings

While not all of the research can be presented, several of the key findings are discussed below:

Project selection and scope

Contrary to much of the prescriptive rehabilitation literature, which urges the use of landscape scale inventories and assessments as a basis for identifying, selecting (e.g., Hobbs et al. 1993, Riley and Mohr 1994, Forman 1995) and prioritizing rehabilitation sites (e.g., Schreckenberg et al. 1990, Dyer 1992), projects in the Region were selected without much consideration of their context, or of the location of other rehabilitation projects.

Of those projects examined, project location was determined much more by factors such as how amenable a landowner (e.g., in the case of agricultural sites) or local governance agency was to the project, the visibility of the site, or other associated activities and land uses (e.g., projects initiated by students and school staff were most often confined to school property). Opportunities for ecological rehabilitation are rare and need to be seized when they present themselves. Practitioners either did not seem to consider useful an examination of a project's broader context, or did not have the resources to include this broader scope in the project. In any case, few projects examined included the subwatershed or broader landscape as part of a project.

Planning, goals and objectives, monitoring

In the literature, goal setting and planning were viewed as key stages in the rehabilitation process (e.g., Caldwell 1991, Hobbs and Norton 1993, Daigle and Havinga 1996). Clear goals were viewed as helpful in minimizing cross-boundary or jurisdictional conflict (Bowles and Whelan 1994). Goals should be flexible to allow for the dynamic change of ecosystems; different objectives need to be set to assess change in ecosystem structure, separate from function, or from the social function of the site (Westman 1991, Fitzgibbon 1992). For rehabilitation success to be gauged, project objectives must be measurable and scheduled (Westman 1991, Cairns 1993). Some authors discussed and proposed particular rehabilitation evaluation criteria (e.g., Berger 1991, Kondolf and Micheli 1995); in general, it was agreed that evaluation must be an ongoing process, as rehabilitation has no clear end point.

Planning, goal setting, and the development of specific objectives were inconsistent in the rehabilitation projects examined. Rehabilitation techniques tended to depend on available resources, and decisions were made in reaction to circumstances as they arose. Monitoring, or methodical tracking of changes to a site for the purposes of learning or modifying management, was rare, although generally viewed as a good idea by practitioners. Despite this, when questioned about project success, practitioners often felt confident in declaring a project a success based on qualitative and short term observations.

Challenges or hindrances

Rarely did the rehabilitation literature acknowledge or offer advice about the daily and common challenges described by practitioners. For example, practitioners cited a common challenge to projects as being the difficulty overcoming prejudices and preconceived ideas about what a "natural" space should look like; rehabilitated sites often lack the aesthetic appeal of landscaped sites. The widespread political and community support, resources and labour, that practitioners considered necessary for project realization were not as well acknowledged in the prescriptive literature. Practitioners also asserted the need for long term support (especially funding) and continued commitment to a project, without which a project can fail. The rehabilitation project can be used as a vehicle to instruct the community on the benefits of the specific project and on ecological rehabilitation in general. However, practitioners often failed to thoroughly investigate others' rehabilitation experiences in their own region prior to undertaking a project and tended to consider their own project as unique. The difficulties presented by a lack of knowledgeable and effective leadership and volunteers were also noted by practitioners.

Lessons Learned

What lessons might be synopsized for practitioners, for planners and for development of the policy context from the research and the comparison of the experiences of the practitioners with the literature findings?

First, opportunities for ecological rehabilitation, and recognition of the role of rehabilitation in achieving ecological sustainability, need to be increased in the policy context. The policy context of the Region of Waterloo was found to be generally supportive of ecological rehabilitation. However, policy context support might benefit from more explicit recognition of ecological rehabilitation through use of more consistent terminology, and the creation of more requirements for it to occur. Provincial land use policy naming and identifying opportunities for ecological rehabilitation should be reinstated. Incentives for land owners to become involved in ecological rehabilitation on their properties should be increased.

Second, those in a position to encourage and facilitate communication about ecological rehabilitation should do so. Municipal planners are situated to bring community attention to degraded areas and to get public opinion about the need for rehabilitation, and can help shape municipal land use policy. Planners have a strong role to play in encouraging ecological rehabilitation in association with new development. Planners and other municipal and regional staff are in a position to know of many disparate rehabilitation projects within their jurisdiction, and can help facilitate communication among practitioners.

Third, both the literature and the practitioners offer ideas about what needs to be included in a successful rehabilitation project. Qualities such as interconnection among projects, and consideration of the project's social, political and ecological context will highlight how individual projects contribute to a landscape vision. Setting goals and objectives, but being flexible in incorporating new information as it arises from project monitoring, is appropriate for ecological rehabilitation projects, that are still largely experimental. Above all, communication, both learning from others' experiences and sharing what has been learned with others, both to garner support for a project and to contribute to the growing knowledge about ecological rehabilitation in different ecoregions, needs to be encouraged. Practitioners are in a position to shape individual projects, seek out partners and colleagues in the community, and to record and share information about specific projects.

Conclusions

Understanding is growing about how the ecological integrity of the southwestern Ontario landscape might be improved in spite of threats from increased urbanization of rural lands, homogenization of agricultural tracts, and complex environmental change. Ecological rehabilitation is gaining profile as a means to reconnect and reestablish this landscape. Investigating, describing, and continually examining ecological rehabilitation projects needs to continue, and communication and coordination among projects needs to increase, to overcome both the long-term, and daily challenges to projects, and further our understanding of ecological rehabilitation practice.

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