

Parks and Protected Areas Research in Ontario

1999

Proceedings of the
Parks Research Forum of Ontario (PRFO)
Annual General Meeting
April 22 and 23, 1999, Guelph, Ontario

Including Special Theme Session on:
Challenges to Parks and Protected Areas
in Southern Ontario

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Published by:

Parks Research Forum of Ontario (PRFO)
c/o Heritage Resources Centre
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Waterloo, Ontario
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Canadian Cataloguing in Publication Data

Parks Research Forum of Ontario. Meeting (1999 : Guelph, Ont.)

Parks and protected areas research in Ontario, 1999 : proceedings of the Parks Research Forum of Ontario (PRFO) annual general meeting, April 22 and 23, 1999, Guelph, Ontario

"Including special theme session on: Challenges to Parks and protected areas in Southern Ontario."

ISBN 0-9684655-1-X

1. Parks — Research - Ontario - Congresses. 2. Natural areas — Research — Ontario — Congresses. I. Pollock-Ellwand, N. (Nancy). II. Van Osch, Kenneth. III. Nelson, J. G. (James Gordon), 1932- . IV. Title.

QH77.C3P374 1999

333.78'3 '0720713

C00-930842-3

Evaluating the Success of Deciduous Forest Restoration in Southwestern Ontario, Canada

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*Forest fragmentation has resulted in reduced richness of native species in northeastern North America. Despite recent large-scale increases in forest cover, studies indicate that understorey herbaceous plant communities may take decades to recover. In 1994 and 1995, we assessed the effectiveness of restoration by comparing the understorey plant community composition of 28 former cottage and road sites with less disturbed reference sites at Point Pelée National Park, Ontario, Canada. Sites were restored over a 35-year period. We took into account the effects of selected environmental and landscape variables. There was a significant increase in similarity between restored and reference sites as time-since-restoration (TSR) increased. Overall, there were no significant differences in the diversity of native species between restored and relatively undisturbed reference sites suggesting that recovery of restored sites may have been successful. However, there was still significant among-site variation in the composition of the native species component of these plant communities. When only restored sites were examined, variation in native species composition was associated with time since site restoration, soil moisture, canopy cover, and distance to continuous forest. Native species were assigned vulnerability rankings according to their relative occurrence in reference and restored sites. Spring-flowering herbs such as *Hepatica acutiloba*, *Dicentra cucullaria*, and *Allium tricoccum*, with ant or gravity dispersed seeds, were absent from restored sites and were defined as highly vulnerable. In contrast, summer and fall-flowering herbs, with vertebrate and wind dispersed seeds, dominated restored sites and were assigned lower vulnerability rankings. Species assigned low and intermediate vulnerability rankings had colonized restored sites successfully. These intermediately ranked species should function as indicators of recovery. In contrast, species with high vulnerability rankings had not recovered at all and, because of their limited dispersal ranges, may only recolonize restored sites if they are actively reintroduced.*