



**Parks Research Forum  
of Ontario—PRFO**

# **Ecological Integrity and Protected Areas**

## **2001**

**Proceedings of the**

**Parks Research Forum of Ontario (PRFO)**

**Annual Meeting**

**Black Creek Pioneer Village**

**May 9 & 10, 2001, North York, Ontario**

**Including Special Theme Session on:**

**A Review of the Proposed Monitoring Program for Ontario  
Parks**

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**James Porter and J. Gordon Nelson**  
with  
**Dawn Bazely, Tom Beechey, John Marsh, Tom Nudds and  
William Stephenson**

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adaptive management approach to managing for ecological integrity at St. Lawrence Islands National Park.

## **Multiple Scale Effects of Overgrazing by White-tailed Deer (*Odocoileus virginianus*) in Eastern Deciduous (Carolinian) Forests**

Saewan Koh and Dawn R. Bazely  
Department of Biology, York University

Large herbivores such as white-tailed deer can have a significant impact on vegetation across multiple biological scales. We examined the relationship between plant community dynamics in several overgrazed southern Ontario forest sites and ecosystem responses such as productivity, nitrogen dynamics, species diversity and ecosystem structure. Between 1992 and 1998, sites with a history of high deer densities ( $>50/\text{km}^2$ ) were compared with deer exclosures and long-term ungrazed sites. Ordination analyses showed older exclosures were similar to ungrazed sites, with higher woody stem densities and dominated by plant functional types relatively high in nitrogen. Both differed from grazed sites, with lower stem densities and dominated by functional types lower in nitrogen. Reductions in deer did not result in the recovery of overgrazed sites because deer mediated changes at the ecosystem level and depletions of desirable native species from seedbanks were the major determinants of successional trajectories. These results present implications for plant species conservation and re-establishment.

## **Operationalizing Ecological Integrity within Ecosystem Management of Quetico Provincial Park Using Prescribed Forest Fires**

Matt Myers<sup>1</sup> and Terry Curran<sup>2</sup>

<sup>1</sup> Fire Management Supervisor, MNR

<sup>2</sup> Regional Prescribed Burn and Fire Science Specialist, MNR

The role of fire in the ecosystem (both in protected areas and the production forest) is a subject of increasing interest to scientists and managers alike. The call to "Emulate Natural Disturbances" in the production forest and to "allow the forces of nature to function freely" in Wilderness Class Parks has led to research and management action on both fronts.