Alleghenian-Illinoian mammal province (in southeastern Canada). We use estimates of the minimum reserve size predicted to contain historic mammal species richness for this region as an a priori constraint in the design of a hypothetical reserve network. We find that the minimum percentage ranges from 2-58%, depending on the algorithm used to select reserves and how the target for achieving representation is defined. These results suggest that a more appropriate target for achieving conservation goals may be the number of protected areas that meet minimum size criteria, rather than a fixed percent within an ecologically defined region.

The Big Picture, 2002: Identifying Key Natural Areas and Linkages in Southern Ontario

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Abstract

The Big Picture, 2002 is a Geographic Information System (GIS)-based landscape analysis, aimed at identifying the key natural heritage areas in southern Ontario and the most promising linkages between them. The maps produced through this project are intended to help guide conservation efforts such as restoration, land securement and land-use planning. Numerous digital data layers covering southern Ontario plus a portion of the Canadian Shield were compiled for the analysis. These layers included evaluated wetlands, forest cover, old growth forest, rare species and communities, waterbodies and watercourses, parks and protected areas, Areas of Natural and Scientific Interest (ANSIs) and others. The data layers were overlain in a GIS system and points assigned to the features in each layer according to their conservation value. Core natural areas were identified by a combination of minimum size and a minimum point score per pixel. Potential linkages between these cores were computed by assigning scores to the landscape surrounding the cores based on the probable resistance to wildlife movement.

Using Prometheus to Model Fire in Algonquin Provincial Park

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Abstract

Park planners and resource managers are often challenged by the paradoxical nature of forest fires. Allowing fire to perform its ecological role, while balanc-

ing the needs for public safety and preserving forest resources, can be problematic. Fire growth simulation modeling is an important tool for park planners to meet these conflicting goals. With the recent releases of Prometheus, (Canadian Wildland Fire Growth Model) park/resource managers now have access to better decision support tools to address fire management issues. Algonquin Provincial Park (APP), in Ontario, poses an interesting challenge to both planners and Prometheus because of the competing demands placed on the forest resources and the desire to re-introduce fire. Prometheus is a very flexible model and can be used in a variety of ways from real time fire simulations to development of fire probability maps. The development of a fire probability map for APP, using Prometheus, provides one method for identifying high-risk areas. The results indicated that the probability of fire varied spatially but still remained quite low for the entire park. Prometheus is still under development, but it is an essential tool for park planners in developing fire plans for large parks.

What is Ecosystem Recovery and How Should we Measure it in our Parks?

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Abstract

Southwestern Ontario, or the Carolinian ecozone, is the most heavily populated region of Canada. Natural habitat cover is as low as 5% in some counties. Furthermore, human-induced disturbance has been great in many of the remaining natural habitats, including Rondeau and Pinery Provincial Parks and Point Pelee National Park. Consequently, managers have recognized the need for active habitat restoration. How do managers know that their restoration efforts have lead to ecosystem recovery and that conservation targets are being met? This question presupposes that ecosystem response to management can be easily quantified. Lessons learned from 12 years of research into forest and savanna responses to management for high white-tailed deer populations and prescribed burning in these parks will be used to address this question. Our three main conclusions are: 1) "one size does not fit all" when it comes to assessing different management regimes, 2) " a multi-scale approach is essential" – without one, important habitat changes will likely be missed; and, 3) "change is slow" – these habitats usually respond over decades.