

The future of recreation ecology in Canada: go big or go home?

Michael J. Campbell and David Walker

Abstract - In Canada, tension between the reaction to the declining number of visitors to protected areas and the potential for unmitigated impacts of the attendant attempts to increase visitation, highlights the need for an expansion of the role of recreation ecology from merely chronicling impacts to, what might hopefully be termed, “optimizing” them. Despite over four decades of significant growth and development internationally, recreation ecology remains a somewhat obscure discipline in Canada. At MMV-3 Marion (1) identified a small group of “active” recreation ecology researchers in Canada many of whose work was an extension of their primary research purpose. Indeed most researchers working in recreation ecology in Canada are unlikely to view themselves as recreational ecologists, but in terms of their source disciplines (Botany, Zoology, Ecology, Geography). As such, recreation ecology in Canada is often an avocation reflecting the intersection of the researchers’ primary interest with an opportunity presented or identified by park managers. One result of this has been an almost exclusive focus on impacts with all its attendant negative associations. Impacts associated with outdoor recreation have been recognized as inevitable (2). I would argue that they are also necessary and that much outdoor recreation cannot take place without impacts. Recent research on recreational habitats in remote areas of northern Canada highlighted the importance of impacted nodes and corridors to recreational activity (3). The rearguard action we have been engaged in with the focus on previously impacted sites has prevented the effective application of recreation ecology to as yet “undiscovered” recreation areas and the optimization of impacts for recreation. Doing so will require an investment in “big science” incorporating multi-disciplinary teams. This will be challenging given that recreation ecology has struggled to be funded even at “small science” levels, particularly so in Canada, where it falls between the cracks of the national granting councils.

Index Terms – Big science and multi disciplinary teams, necessity and inevitability of impacts, recreation ecology, recreation habitats

1 INTRODUCTION

Recreational ecology as an identifiable field of inquiry is, to a large degree, unknown in Canada. That is, many of its practitioners would not necessarily identify themselves as such. Furthermore the consumers of recreation ecology research would be less likely still to identify recreation

ecology as the discipline providing them with information. Indeed, at MMV-3 in Rapperswill, the first author was gratified to finally be able to put a name to his area of research. Despite, this relative obscurity in name, recreation ecology is nevertheless widely practised in Canada under the disciplines of ecology, recreation management, leisure, geography, environmental science, and environmental studies among others. A cursory review of the literature reveals that a good deal of recreation ecology literature in Canada is disseminated through the proceedings of SAMPA (www.sampaa.org), an organization devoted to the application of science in the management of protected areas. The proceedings reflect a small cadre of researchers who focus on recreation ecology often working inde-

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pendently, distributed across the country (e.g. 4, 5, 6, 7, 8) Precursors to SAMPA, The Canadian National Parks: today and tomorrow conferences of 1968 and 1977 saw perhaps the first attempt to develop recreation ecology in Canada. More recently, several provinces including Ontario, Manitoba, British Columbia and Alberta have established Parks and Protected Areas Research Forums and act as regional hubs for the application of science and research in managing parks and protected areas, linking researchers and land managers.

2 THE CHANGING CANADIAN ENVIRONMENT

Canadian protected areas managers are becoming increasingly concerned about the decline in visitation to parks and protected areas across the country. With the exception of a few iconic national parks, visitation is stagnant or declining in most parks and protected areas. Reasons for the decline have been postulated to include the changing nature of Canadian society in general as reflected in increased growth through immigration, aging of the baby boom generation, the urbanization of Canadian society, and the increased role of technology in Canadian leisure. Regardless of the reasons for the reduced interest in natural areas in Canada, the effect has created a unique problem for Canadian parks and protected areas managers and indeed recreation ecology researchers who have focused to a very large extent on identifying, managing and mitigating impacts of a perceived increase in recreational use of parks and protected areas.

Reasons for these perceptions have not been examined formally but it is posited here to be due to the strength of influence of what is happening in the United States, where recreation ecology is perhaps best developed and understood. Furthermore the pervasive influence of the larger body of work emanating from our southern neighbours appears to colour managers' perceptions regarding what is happening in their own parks. For exam-

ple managers in Riding Mountain National Park in Canada, commissioned researchers to develop a backcountry impact monitoring programme due to concerns that use was increasing. Results of the study indicated that not only were impacts largely contained but also that visitor numbers were not increasing and had in fact been stable or decreasing (9, 10). Subsequent research identified a significant trend towards day use of backcountry trails (11) suggesting that the influences identified above were already in process. The concept of wilderness adds another dimension to the management issues faced by Canadian park managers, with the view that the problems of US parks are the problems of Canadian parks. Yet 'wilderness' is largely an imported concept. Wilderness is not the focus of this discussion but sets the stage: in Canada there are large intact forests that by many definitions would be considered 'wilderness' and yet these are 'working landscapes' and would not fit some conventional definitions. This American concept could be considered a recreational classification and indeed is by the tenets of the U.S. Wilderness Act, and thus management and controlling impact is exceedingly important. However, when we transfer this concept to Canada (and most likely other areas) a number of problems, including conflicts among stakeholder groups arise. It should be noted that much of the Canadian 'wilderness' is not within parks and therefore largely outside the responsibility of park planners. Recreation within Crown lands is not prohibited, but unplanned. Instead large area planning is often the responsibility of major resource industries such as forestry. In these instances 'wilderness' recreation and planning occurs to the extent required for forest certification or to meet the requirements of Provincial management targets.

Finally and certainly not least is the issue of climate change/variability and how this impacts upon ecosystems in general and parks and protected areas in particular. By and large parks in Canada, while among some of the largest in the world, are not of sufficient size, nor adequately connected

to “adapt” to changing climatic conditions. What this means for parks management and responses to perceived threats to ecological integrity is still not clear. However, it adds a significant element of uncertainty to Parks Canada’s legislated mandate of maintaining “ecological integrity” (where ecological integrity is defined by the National Parks Act as “a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes”). In a changing environment what is “persistent”, and if adaptation occurs as a result, what is then “characteristic”? These questions are only now being asked and their implications for management within parks and protected areas have yet to be addressed by policies. How the recreational ‘ecosystem’ might respond and be managed on a changing landscape is at this point largely guesswork.

3 THE ROLE OF IMPACTS

The importance of identifying and monitoring impacts should not be minimized and it is not my intention to do so. However, often monitoring is the drudge work (12) of research and more often still rarely published as has been noted at past meetings of this type. Monitoring and impact assessment has provided a sound base from which to move forward to planning in areas previously without impact with a proviso that we recognize that impacts are not only inevitable (1) but also quite possibly necessary.

In addition, monitoring has, by and large, been conducted at a site level with minimal attempts to integrate it into a larger system. Some attempts to expand monitoring beyond the site level to surrounding communities/landscapes have been undertaken (13) but still not at the system level. Most ecosystems are nested hierarchies as has been recognized in ecology and in national ecological mapping frameworks (<http://www.ec.gc.ca/>

soer-ree/English/Framework/) and impacts may have multiscale effects. Site level impacts may have repercussions emergent at the landscape scale. For example, a study recently initiated by the second author is examining the impact of recreational snowmobile trails on wolf movements. These trails are seasonal, low density and low use, often established in open country and at the site-level are arguably innocuous. However, there is sufficient anecdotal evidence that indicates that wolves use these trails to depredate southern populations of woodland caribou, a species identified as threatened federally. In this instance it is a linear recreation corridor at the landscape-level and only seasonally that creates potential conflicts with wildlife. Spatial and temporal scales are absolutely critical in recreation ecology when considering use-based impacts. Impacts are not necessarily simply the end result of recreation on the landscape. During the course of research by the authors to assess the viability of identifying recreational habitat indices and using these for planning, it was observed that in many situations impact was a necessary pre-condition for outdoor recreation. In particular, canoe tripping requires at a minimum sites that are flat and relatively free of ground cover in order to camp. Ideally, the sites will also provide ease of landing and launching, a scenic vista, and be exposed to a breeze (to reduce nuisance insects). In the boreal forest/Canadian shield ecozone these features are found almost exclusively in ecosite 2 (14). In the absence of this ecosite, many sites are the result of human impact. In contrast in the Taiga ecozone, it was found that most campsites were located on eskers, most often in locations where migrating caribou had denuded the ground cover. Upon leaving the region of eskers, camping sites were impossible to find as banks were thickets of unimpacted willow and alder. Similarly, ATV recreationists often co-opt existing trails, resource and utility corridors and roads. Ironically, firebreaks used to preserve forests often become a conduit for environmental degradation by ATVs at both the site-level (e.g. stream crossings impact

fish habitat) and landscape level (e.g. invasive species using these as corridors to spread). Clearly, recreation can lead to impacts that are dynamic, emergent and self catalyzing.

The role of recreational impacts on long-term ecosystem dynamics is also poorly researched. Despite being the world's largest industry, recreation and recreational ecological models and planning fall far behind other resource-based industries. In forestry scenario planning, constraint-based patch and landscape models have been used to examine the impact of forestry on viewsheds adjacent to and in recreational areas [e.g. 15]. These models can simulate several cutting rotations and the approximate condition of the landscape as observed from a variety of vantage points. Simulations can be run for periods of several centuries although usually only medium-term 50-100 yrs are used in planning. From this temporal perspective foresters are becoming more sensitive to recreationists needs (and possibly impacts) than managers of parks and other outdoor recreation environments. Clearly industries such as forestry, which are extractive, are often the target of policies that require long-term landscape-level planning and therefore have to include recreation for certification. As we have argued, impact and/or disturbance are inevitably part of recreating on any landscape. While strictly speaking this may not be extractive, it does affect landscape change and one could argue that it should be treated as such and given higher priority in the discipline. Indeed, the recognition that impacts are, in many cases, necessary suggests that that might be optimized and planned for. That said, the cumulative effects of recreation are often not considered, except in terms of back-casting, and certainly not over a time scale of centuries. Perhaps this is an unfortunate side-effect of the 'museum mentality' that is often pervasive in park planning and management, that assumes that left alone the landscape will remain "as is." But this assumption is one that should be strictly avoided in the development of theory and practice in recreation ecology.

4 CHALLENGES

Before recreation ecologists can begin to address some of these issues a number of challenges will have to be overcome. One of the greatest challenges facing recreation ecologists in Canada (beyond identifying themselves as such) is their dispersal across the country. In most cases individuals work in isolation and represent the lone RE in their respective province. In keeping with the significance of scale in recreation ecology, the enormous physical distances between researchers makes regular interaction between practitioners in what is a highly field based area of study problematic. In Canada forums such as PRFO, PPARFM, BCPARF and PRFA provide an annual opportunity for regional meetings of researchers, while SAMPA provides a triennial opportunity for Canadian and international recreational ecologists to meet. To date however, these have not generated the kind of large-scale (big science) opportunities needed to move the discipline forward. The spatial dispersion of recreation ecologists and the scale of Canadian parks and 'wilderness' inflate the costs of both the research itself and the dissemination of the results. Funding continues to be a significant issue for recreation ecology researchers in Canada. By and large recreation ecology falls between the cracks of Canada's major funding agencies (NSERC and SSHRC) and must be considered under the "Interdisciplinary" category and then vetted through a committee of discipline specific adjudicators. In committee, proposals are often criticized for their failure to advance theory¹ (often of a disciplinary nature). Recently efforts have been undertaken to establish a Canadian Network centre of Excellence in Human Dimensions of Parks and Protected Areas, an attempt to establish "big science" and overcome the challenges posed by the highly dispersed nature of Canadian recreation ecologists.

¹ This echoes Cole's comment at MMV3 noting the need for a stronger theoretical basis and to increase predictive capabilities (15).

Much publication of Canadian recreation ecology research occurs in conference proceedings. This may, in part, reflect the concern that there is little theoretical foundation and that much of the work is strongly biased towards monitoring and application. Additionally, it may reflect that much of the work is completed at the behest of park management agencies, under tight timelines and with limited budgets. Finally, there is no dedicated venue for recreation ecology research dissemination outside of SAMPA, GW, MMV, PPARFM etc. with the result that the output, where published, is widely dispersed (much like recreation ecologists). The Recreation Ecology Research Network provides a valuable point of contact for managers and researchers to discuss developments in the field and to share ideas but does not fill the role of a dedicated journal or peer-reviewed publication.

5 CONCLUSION

As noted earlier much recreation research in Canada has been conducted by individuals working alone and with limited budget and has focused upon identifying and measuring impacts. While this may be appropriate to existing parks and protected areas it is not nearly as useful in supporting the management of large tracts of crown land such as those currently under consideration for World Heritage Status in the eastern boreal of Manitoba. These areas will require the application of Big Science much like that undertaken in the Bow Valley Study (15). Recreation Ecology should be central in the planning, development and implementation of such science. However, to be included in such a process will require that recreation ecology enhance its profile through expanding upon current initiatives like RERN, MMV, SAMPA, the PRFs and providing opportunities for increased linkages between these organizations. Finally, perhaps it is time for the development of a dedicated publication for recreation ecology research.

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