Ecotourism at the Boreal Edge

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1995

Funding for this report has been provided through the Northern Ontario Development Agreement's Northern Forestry Program.

Canadian Cataloguing in Publication Data

The National Library of Canada has catalogued this publication as follows:

Main entry under title:

Ecotourism at the boreal edge

(NODA/NFP technical report ; TR–9)
Includes an abstract in French.
Includes bibliographical references.
"Funding for this report has been provided through the Northern Ontario Development Agreement's Northern Forestry Program."
ISBN 0–662–23078–7
Cat. no. Fo29–42/9–1995E

1. Ecotourism — Ontario.
2. Taigas — Ontario — Recreational use.
I. Salmoni, A.
II. Great Lakes Forestry Centre.
III. Series

G155.C3E26 1995 338.4'7917131 C95–980141–3

Catalogue No. Fo29–42/9–1995E
ISBN 0–662–23078–7
ISSN 1195–2334

Copies of this publication are available at no charge from:
Publications Services
Natural Resources Canada
Canadian Forest Service – Sault Ste. Marie
Great Lakes Forestry Centre
P.O. Box 490
Sault Ste. Marie, Ontario
P6A 5M7

Microfiche copies of this publication may be purchased from:
Micro Media Inc.
Place du Portage
165, Hotel-de-Ville
Hull, Quebec J8X 3X2

Salmoni, A.; Sidney, K.; Courtin, G.; Beckett, P. 1995. Ecotourism at the boreal edge. Nat. Resour. Can., Canadian Forest Service – Sault Ste. Marie, Sault Ste. Marie, ON. NODA/NFP Tech. Rep. TR–9. 9 p. + appendices.

ABSTRACT

From the present research, a model was constructed that can be used to determine which potential forest management educational sites best match the needs and interests of ecotourists. The research required two phases of work. First, an identification and assessment was conducted of the natural history of potential educational sites along the Deer Trail at Elliot Lake. Second, important site characteristics as defined by a survey of 750 potential tourists were determined. One important conclusion drawn in phase two was that the age of travelers and family complement had a relatively small impact on what was deemed the most important needs to be met. Based on the survey and natural history assessment, five major categories of site characteristics were identified: visual appeal, general site characteristics, recreational and fitness resources, natural history, and forest management characteristics. For each of these major categories, subcategories were delineated. This model was then used to rate six potential sites for future ecotourism development.

RÉSUMÉ

La présente recherche a servi à construire un modèle pour déterminer quels sites éducatifs potentiels en matière d'aménagement forestier répondent le mieux aux besoins et intérêts des écotouristes. La recherche a comporté deux étapes : définition et évaluation de l'histoire naturelle des sites éducatifs potentiels le long du sentier Deer, à Elliot Lake; et sondage réalisé auprès de 750 touristes potentiels qui a permis de déterminer les caractéristiques des sites jugées importantes. Une conclusion déterminante a été tirée de la deuxième étape: l'âge des voyageurs et de leur famille a relativement peu d'impact sur les besoins jugés les plus importants à satisfaire. Par suite de l'évaluation de l'histoire naturelle et des résultats du sondage , cinq grandes catégories de caractéristiques des sites ont été définies: attrait visuel, caractéristiques générales du site, ressources récréatives et de conditionnement physique, histoire naturelle et caractéristiques d'aménagement forestier. Pour chacune de ces cinq grandes catégories, des sous-catégories ont été établies. Le modèle a ensuite été utilisé pour coter six sites potentiels pour le développement écotouristique.

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ECOTOURISM AT THE BOREAL EDGE

INTRODUCTION

While the concept of ecotourism has different meanings for different people, it is generally agreed that an ecotourist is a person who wants to learn about and experience undisturbed aspects of nature (Eagles 1992). What this means at the individual level is less clear, however, since "undisturbed" depends on one's viewpoint. Since "experiencing undisturbed nature" is subjective, it will have different meanings for people coming from an urban centre in southern Ontario versus a remote area of northern Ontario. Nevertheless, while ecotourists can be of different sizes, shapes, and ages, they are all interested in learning about nature (Scace et al. 1992).

This desire for learning is equally matched by the need to educate the public about forest management techniques. Not only is it necessary to seek an appropriate balance between undisturbed and managed forest resources, but it is essential to demonstrate that managed sites can be "reclaimed by nature". Since a forest, whether undisturbed or managed, has an ongoing ecological life, it is necessary to educate Canadians to this process. The purpose of the present research was to develop a site-characteristic model that could be used to generate strategies to educate ecotourists about forest management techniques and the natural life of a forest. For this to be possible it was necessary to integrate knowledge about the forest (its natural history) with information about the people who would visit the forest. The natural history of a potential site must include both ecological diversity and demonstrable forest management techniques. Knowledge about the visitors must include demographics and needs/demands.

METHOD

Ecological Assessment

Potential sites were identified along the Deer Trail and Boland River Road, northwest of the town of Elliot Lake, Ontario. Since potential sites would have to be relatively close to preexisting roads, the initial identification was made after driving along these roads and walking into the bush. With the aid of existing maps, records, and aerial photographs, 18 sites were ultimately selected for assessment. These were classified using forest site and vegetation type methods. Sites were evaluated on the basis of forest management techniques demonstrated, ecological diversity, and educational value.

Ecotourist Survey

Telephone Survey

The initial phase involved interviewing 100 people, whose telephone numbers were obtained by randomly sampling the Elliot Lake (n=50) and Sudbury (n=50) telephone directories. The interviews, which were conducted in either English or French and lasted about 15 minutes, were done with the person who answered the phone (as long as they were at least 16 years of age). The questions, which were open-ended in nature, asked about reasons for stopping along the highway while on vacation, facilities/services needed, as well as any other information deemed important by the respondent. The content of these surveys was then analyzed to identify major dimensions and subcategories of variables associated with the attraction of tourists to specific sites and characteristics of those sites once there.

Mail-out Questionnaire

Using both the results of the telephone survey and the Canadian Travel Survey (Statistics Canada 1990), a written questionnaire was designed. This questionnaire presented one of two introductory paragraphs: one that described old-growth forest "demonstration sites" and one that described forest management "demonstration sites". An equal number of each questionnaire was mailed out. Thus, respondents started with one of two mindsets (i.e., old-growth or forest management).

The questionnaire then asked respondents to imagine that they were driving along a highway on vacation and that they had time to stop. In addition, respondents were required to declare whether they would be traveling with or without children. The questionnaire was divided into four sections. Section A asked respondents to indicate the likelihood that they would stop (from 0% to 90–100%) at such a demonstration site. Respondents who said that they would definitely not stop (0% chance of stopping) moved to Section C (reasons for not stopping) of the survey. Section B consisted of forced choice questions concerning reasons for stopping, distance off highway likely to detour, general site characteristics, educational services, recreational services, and fitness facilities deemed necessary by the respondent. Section D asked demographic information about age, education, income, gender, occupation, and whether individuals had visited a forest site in the previous 5 years.

In total, 1,500 questionnaires were mailed out to three sample groups: all Laurentian University employees (n=650), a matched sample of University of Waterloo employees (n=650), and a random sample of northeastern Ontario residents from Sault Ste. Marie, Elliot Lake, Sudbury, and North Bay (n=200). Although not a completely random sample, the university setting was deemed appropriate for ecotourism research purposes.

The return rate was close to 50%; 720 questionnaires were returned and analyzed. Of these, 70 respondents or 10% indicated that they would definitely not stop at a demonstration site. The remainder of the questionnaires (n=650) were analyzed using Chi Square and ANOVA techniques.

Natural History of the Sites with the Most Potential

After the survey results were reviewed (for complete details of the survey results see "Innovative Ecotourism at the Boreal Edge. Phase II: Ecotourist Survey") by the entire research team, six of the original 18 sites (for complete details of all 18 sites see "Innovative Ecotourism at the Boreal Edge. Phase I: Ecological Assessment Final Report") were selected for further study. Over a 2-day period the research team revisited the six sites (photographs of the six sites can be seen in Appendix A and their locations are indicated in Fig. 1) and noted the important aspects of each: namely, topography, ecology, forest management, access, location, and general appeal. In addition, visual appeal was evaluated using the research reported by Magill (1990, 1992).

RESULTS

The results reported here come from a synthesis of findings from the literature search, the ecological assessment, the ecotourist survey, and the final visitation by the research team. From this synthesis, each of the six sites was evaluated under four major categories: visual appeal of surroundings; general attributes; recreational and fitness potential; and educational potential, including forest management techniques available and natural history. The subcategories under each of these major headings, along with appropriate definitions, are presented. These categories are critical because they represent the dimensions by which other sites can be evaluated for future development potential. The entire rating scheme and ratings can be seen in Table 1. It should be noted that in particular the survey attempted to identify important site-characteristic differences for different age groups (young, middle, and older adult) and family complements (travelers with young children and without children). Interestingly, the survey was striking because there were few critical differences for the site characteristics deemed most important by all respondents. Where appropriate, however, differences are noted.

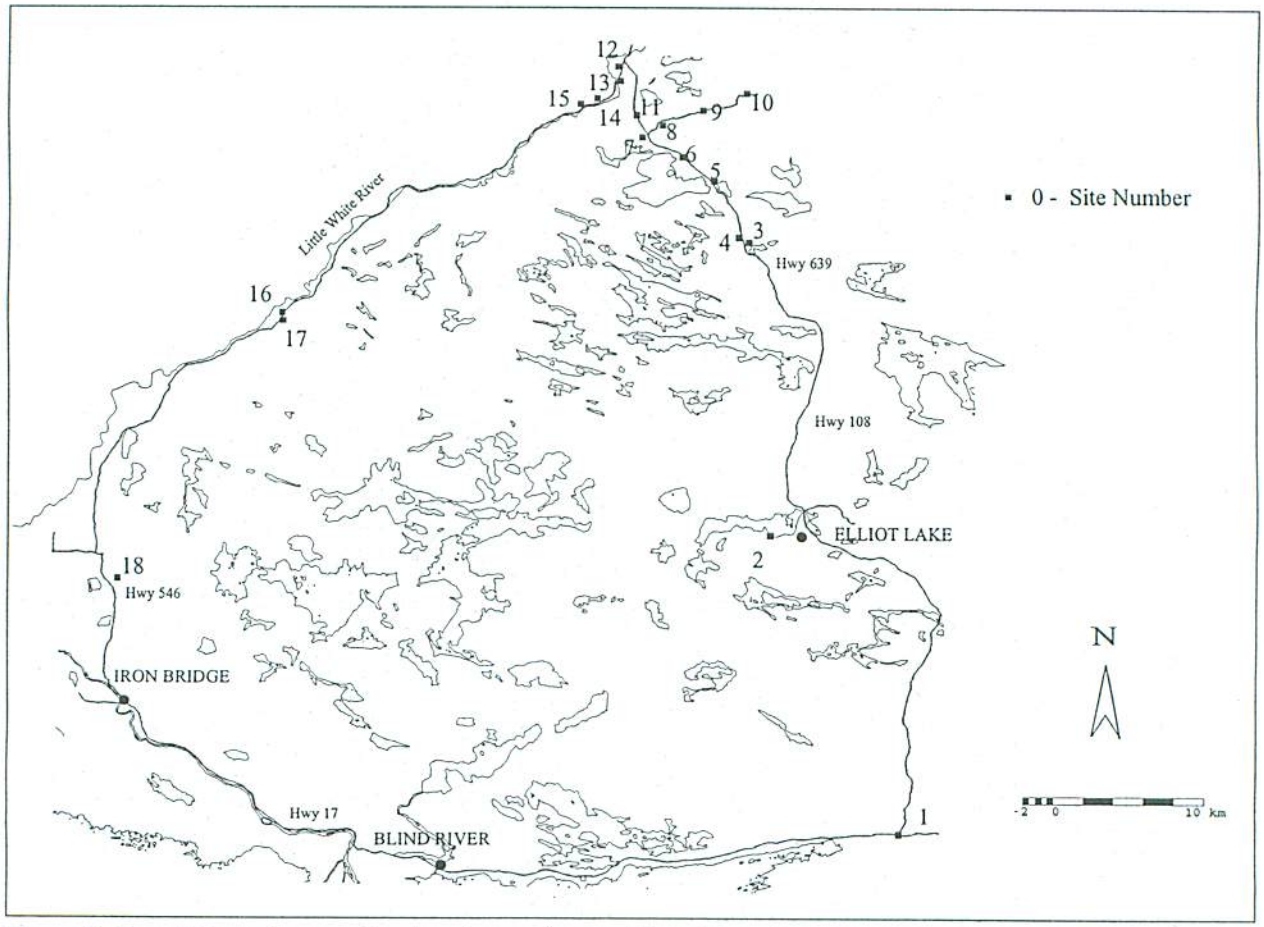


Figure 1. Map of the study area showing site numbers and locations.

Table 1. Complete rating for each site.

Categories	Site[1]					
	2	4	6	14	15	16
Visual appeal						
Forest	+	+		+	+	+
Dome peaks			+			
Hills	+		+	+	+	
Color contrasts		+	+	+		
Rocks			+		+	
Water	+		+			+
Road	-			-		
Bare	-		-	-	-	
Clear-cut			-	-	-	-
General attributes						
Wilderness		+				
Learning	+	+	+		+	+
Rest and comfort	+			+	+	+
Nature trails	+	+	+	+	+	+
Interesting	+	+	+	+	+	+
Interpretive	+					
Parking	[100]	[10]	[10]	[40]	[20]	[10]
Fitness/recreation						
Picnic area	+		+	+		+
Short trail	+	+	+		+	+
Long trail	+	+	+	+	+	+
Beaches	+					+
Nordic skiing	+	+				+
Canoeing						
Educational potential						
Old growth	+	+				+
Select cut		+				
Clear-cut			+	+	+	+
Planted regeneration			+	+	+	+
Natural regrowth	+		+			
Geology		+	+		+	+
Botany	+	+				+
Ornithology	+	+	+			+

[1] Site 2 = Spine-Hemlock, Site 4 = Hardwood, Site 6 = Flack Lake, Site 14 = Overlook, Site 15 = Kame clear-cut, and Site 16 = White River.

Visual Appeal

Innovative research by Magill (1990, 1992) attempted to identify those characteristics of a natural or managed setting that are particularly salient to the viewer, having either a positive (viewers liked what they saw) or negative (viewers disliked what they saw) valence. Since not all of Magill's visual characteristics were appropriate to the present research (e.g., mountains), a subset was selected. Sites were assessed for visual appeal using the following characteristics: forest stands (+), hills (+), dome peaks (+), rocks (+), water (+), color contrast (+), roads (-), bare areas (-), and clear-cuts (-). The visual appeal of a particular site was determined by the algebraic summation of these characteristics (0 = characteristic not present, +1 = characteristic with positive valence present, -1 = characteristic with negative valence present). For example, a site with hills (+1), forest stands (+1), and a major road visible from the site (-1) would sum to 1 (1 + 1 - 1 = 1). Visual appeal is perhaps more important for adults-only travelers (vs. families traveling with young children) since they reported photography as a reason for stopping more frequently at a site (20% vs 8%).

General Attributes

This major category represents dimensions gleaned from the reasons respondents gave for stopping and the generic characteristics deemed necessary to be present at the site. A summary of these findings, categorized by age and family complement, can be found in Appendix B. Seven subcategories have been identified: experience wilderness, learning potential, rest and comfort, nature trails, natural and interesting setting, parking, and potential for an interpretive centre. Clarification of these is provided. A majority of the respondents reported that one reason for stopping would be to experience wilderness. This is in agreement with many other ecotourism studies. This category is very difficult to assess since the "experience" of wilderness is a subjective state, specific to each individual. Nevertheless, it was considered to be an essential dimension and was operationalized as distance from (visible) people-made objects and activities. Learning potential refers to the overall (forest management + natural history) potential of a site to provide a rich learning experience. A learning experience, while important to all ages of travelers, was especially important to older adults (18%, 27%, and 36% of young, middle, and older adults, respectively, listed "learning experience" as a reason for stopping at a site). Family complement was not associated with this reason. For this category both diversity and uniqueness of educational characteristics were considered. A vast majority of respondents, but especially those traveling with children (79% vs. 69%) indicated that rest and comfort facilities were essential. As rated here, this referred to existing facilities, although the potential for the development of such facilities could have been rated.

Nature trails, a highly desirable site characteristic identified by the majority of respondents, would appear to be easily integrated into most potential ecotourism sites. In the present research, the sites were rated according to adaptability for such a trail. Respondents also indicated that sites need to be natural and interesting. This was mentioned

more frequently by adult-only travelers than by travelers with children (53% vs. 45%). "Natural and interesting" again is rather subjective, but was considered with reference to the diversity of nature present at the site. Convenient parking was deemed important by respondents, especially by older travelers. Obviously this would be critical for site development. Sites were assessed for adaptability (i.e., with minimal disturbance to nature) and the estimated number of cars that could be accommodated with minimal cost. Lastly, sites were rated as to whether they could accommodate an interpretive centre (i.e., a display or board with site information and materials rather than a building staffed with information personnel). Since vandalism is a potential problem for such unstaffed areas, the site was rated as good only if vandalism was guaranteed to be minimal. (Only one site received a positive rating on this characteristic.) The presence of an interpretive centre was more frequently mentioned by older and middle-aged adults than by young adults (36%, 52%, and 55%, respectively, listed this as an important site characteristic). It should be noted that, while relatively few respondents mentioned campgrounds as an important general site characteristic (and therefore was not part of the present rating scheme), younger adults mentioned this as an important characteristic more often than middle-aged and older adults (22%, 10%, and 11%, respectively).

Recreational/Fitness Potential

The dimensions for this major category were extracted from the responses made to questions in the survey about desirable recreational and fitness facilities and/or activities. A summary of these findings, categorized by age and family complement, can be found in Appendix C. It should be noted that physical activity was more frequently mentioned as a reason for stopping by adult-only travelers than by travelers with young children (28% vs. 17%). A picnic area was defined as a mostly open, easily developed area at the site that could accommodate several picnic tables. Since 70–80% of respondents reported this to be essential, this facility is viewed as critical for an attractive site. In conjunction with this type of recreation, a beach area was seen as important by a large number of respondents, especially by younger adults (41%, 37%, and 25%, respectively, of young, middle, and older adults listed beaches as an important characteristic). Sites were judged to have a beach if one already existed, or if the area bordered a safe body of water that could be developed.

Both short and longer, more demanding hiking trails were deemed to be important by all respondents. Both types of trails, but particularly longer trails (47% vs. 27%), were more frequently mentioned by adult-only travelers than by travelers with children. Wheelchair accessible trails were mentioned more frequently by adult-only travelers than by travelers with young children (16% vs. 9%). Each site was judged as to whether such trails already existed or could be developed at minimal cost. The short trail was to be approximately 1 kilometre in length and be relatively flat and wide (permitting wheelchair access). The longer trail was to be approximately 5 kilometres in length, did not have to be wheelchair accessible (e.g., wood chip trail), and could have significant changes in elevation. Since cross-country skiing, mountain biking, and canoeing were mentioned by respondents as desired activities, each site was judged as to whether any of these activites would be possible after site development. As might be expected, the importance of mountain biking and canoeing decreased as the age of respondents increased. Lastly, while not used as a specific rating category in the present report, travelers with children mentioned children's play areas and activities as important recreational characteristics (35% vs. 3% for travelers with children vs. adult-only travelers).

Educational Potential

Forest Management

It should be noted that the educational potential for any site is critical since "educational experiences" were deemed very important by adults (especially older adults) and by parents for their young children. Although there are many aspects of forest management, four characteristics were chosen for site assessment. Since the survey was clear in highlighting the ecotourist's interest in old-growth forests, all sites were rated for their potential to allow the ecotourist to view "relatively" old tree growth. Depending on the species of tree, old growth was operationally defined as trees 100–200 years of age or older. In terms of harvesting, sites were rated for select cut (only specific trees harvested) and clear-cut (all trees removed) techniques. With respect to the demonstration of replanting techniques, potential sites were rated as natural regrowth or planted. Each site was judged as allowing or not allowing for the (educational) demonstration of these four forest management characteristics. While the ideal site would demonstrate all of these characteristics, most sites would allow the adequate demonstration of only one or two.

Natural History

Again, the present research was clear in demonstrating that ecotourists are interested not only in experiencing nature, but learning about it as well. Thus, in addition to forest management, a ranking system for the demonstration of different aspects of natural history was developed. Each site was rated for its geological, botanical, and ornithological diversity. Thus, sites were rated as having (or not having) a breadth of possible educational experiences, rather than as having a single unique characteristic. Information concerning geological and botanical charac-

teristics was gathered from the ecological assessment and site visits; however, the rating for potential bird sightings was based on the expert opinion and field visits of the present research team. It should also be noted that while these characteristics were chosen as appropriate for northern Ontario, other characteristics (e.g., zoological) may be more appropriate for other regions of Canada. While not part of the present rating scheme, it should be noted that self-guided trails and visual displays were the two most frequently mentioned (>50%) learning services deemed important by all respondents. Audiovisual presentations were more frequently mentioned by older adults (8%, 17%, and 23%, respectively, for young, middle, and older adults). In addition, as might be expected, 40% of travelers with young children mentioned child-geared learning as important.

DISCUSSION AND SITE RATINGS

Sites Selected for Rating

Six sites were selected for rating by the research team, after consultation with the ecological report and a site visit. Although not essential to an understanding of the discussion, the site numbers (2, 4, 6, 14, 15, and 16) have been retained from the ecological report. These sites (*see* Fig. 1) were selected for rating because of their diversity and potential. Site 2, called "Spine-hemlock", is located off Spine Road and next to Spine Beach on Elliot Lake in the town of Elliot Lake. Perhaps its most noteworthy feature is the very old hemlock trees situated along an existing nature/ski trail. Site 4, called "Hardwood" is located on Highway 639, 28 km north of Elliot Lake. This site offers a rich mix of relatively old hardwoods and mixedwoods. Site 6, "Flack Lake", is a clear-cut area located 34 km north of Elliot Lake. It has a view of Flack Lake. Site 14, called "overlook", is located 3 km south of the junction of Highways 639 and 546 and approximately 50 km from Elliot Lake. While the site itself is very steep, it provides a panoramic view of hills and a diversity of trees. Site 15, "kame clear-cut", is located 4 km south of the junction of Highways 639 and 546, approximately 50 km from Elliot Lake. While providing a rather stark appreciation of clear-cut techniques, this site is also noteworthy for its regrowth and geology (kame). Finally, Site 16, called "White River", is located 44 km south of the junction of Highways 639 and 546 and approximately 80 km from Elliot Lake. As the White River flows through this site, it offers a rich diversity of forestry and biological experiences.

Ratings for Visual Appeal

Recall that sites were rated positively (+1) for the presence of forest, dome peaks, hills, color contrasts, rocks, and water, as well as negatively (-1) for roads, bare areas, and clear-cuts. Thus, the maximum rating possible for any one site was 7. Spine-hemlock (Site 2) was rated positively for the presence of forest, hills (visible around the lake upon entrance into the trail), and water. It was rated negatively for the presence of visible roads and bare area (beach). This resulted in a net rating for visual appeal of +1. Hardwood (Site 4) was rated positively for forest and color contrast (in autumn) and had no negative ratings, thereby producing a net visual appeal of +2. Flack Lake (Site 6) received positive ratings for dome peak, hills, color contrasts, rocks, and water. It received negative ratings for bare and clear-cut areas, resulting in a net rating for visual appeal of +3. Overlook (Site 14) received positive ratings for forest, hills, and color contrast, and negative ratings for roads, bare areas, and clear-cut. This resulted in a net visual appeal rating of 0. Kame clear-cut (Site 15) was rated positively for the presence of forest, hills, and rocks, but had negative ratings for bare and clear-cut areas, thereby resulting in a net visual appeal of +1. White River (Site 16) was rated positively for forest and water, and negatively for clear-cut, resulting in a net rating for visual appeal of +1.

It is obvious that no site came close to being rated a perfect +7 for visual appeal. This reflects reality since no site is perfect. Somewhat surprising perhaps, the site with the highest net rating for visual appeal (Flack Lake) was originally selected because of its clear-cut area. It should be noted that Magill (1990) required viewers to pick out only the two most prominent visual features and not all features were equally prominent. To the degree that the present rating system is valid (i.e., more than two prominent features), viewers should be left with a net positive feeling. Given the usual adversity ecotourists have to clear-cutting, this is perhaps an ideal site for such an educational experience. This is not a simple process, however, since some individuals may be visually affected by one dominant feature, be it positive or negative. Thus, the most useful part of this rating system is that it requires the site planner to consider various aspects of visual appeal when making a decision.

Ratings for General Attributes

Sites were rated on the following seven characteristics: experience wilderness or relatively undisturbed nature, learning potential, rest and comfort, nature trails, natural and interesting, parking, and potential for an interpretive centre. Each site could receive a maximum general attribute rating of 7, with a positive rating if the characteristic was either present or possible and no negative ratings were awarded. Spine-hemlock (Site 2) received a general attribute rating of 6, with only the experience of wilderness not possible at this site. It should be noted that this site had already been developed as a nature trail and was juxta-

posed to a fully serviced beach area. At the Hardwood site (Site 4) a visitor could potentially experience and learn about nature. Parking could easily be provided for ten cars, a nature trail could be developed (a partly developed trail is already in existence), and the canopy of trees would provide a natural/interesting site. However, the absence of rest and comfort facilities and an interpretive centre resulted in a general attribute rating of 5. The Flack Lake site (Site 6) could provide a valuable learning experience, could be easily developed for parking of ten cars, nature trails could easily be developed, and the site was judged to be natural/interesting. At Flack Lake it would be difficult to experience wilderness and to develop a rest and comfort station. An unstaffed interpretive centre was not considered feasible. Thus, Flack Lake received a general attribute rating of 4. Overlook (Site 14) could be easily developed for parking of 40 cars for nature trail visitors. It would also provide an interesting view. In all other aspects, however, this site was limited. This resulted in a general attribute rating of 3. Kame clear-cut (Site 15) could provide a diversified learning experience, could be easily developed for parking of 20 cars, provides suitable terrain for nature trails, and would be an interesting/educational site. In addition, the landscape would provide for the development of a rest and comfort station. This site would not be appropriate for an interpretive centre and would not allow for the experience of wilderness. Hence, Kame clear-cut received a general attribute rating of 5. White River could be developed to provide parking for ten cars; nature trails; diversified learning; and potentially, a rest and comfort station. Although a visitor to this site could not experience undisturbed nature, never-the-less the area was quite interesting. White River received a general attribute rating of 5.

Since Spine-Hemlock was a previously developed site it received the highest general attribute rating; however, Hardwood, Kame clear-cut, and White River were also very highly rated. The main reason for the higher ratings for Kame clear-cut and White River was the potential for development of rest and comfort facilities. Hardwood is the only site that allows for the experience of relatively undisturbed nature. Once again, none of the sites were judged to meet all of the criteria.

Recreational/Fitness Ratings

Each site was rated for the potential to develop the following characteristics: picnic area, beach/water area, short (wheelchair accessible) trail, longer (more demanding) trail, nordic ski trail, and canoe access. A site with the potential for all of these characteristics would receive a maximum recreational/fitness rating of 6. As mentioned, Spine-Hemlock is a recreational area for the Town of Elliot Lake and has all of these characteristics. It received a recreational/fitness rating of 6. Hardwood was judged to be an excellent site for trail development (short, long, and nordic); however, there was no water access. This site was judged as inappropriate for picnic area development because of the rather dense forest and no clearings. Without access to a clearing, visitors could not enjoy the sun. In addition, blackflies and mosquitos would likely make a picnic unenjoyable during the spring and early summer. The Hardwood site received a recreational/fitness rating of 3. The Flack Lake site offered the potential for a picnic area, as well as for short and long trails. While Flack Lake could be seen from this site, water access would be difficult, and would not permit the development of a beach or canoe access. The area was judged to be a poor site for nordic skiing development since the area was too open (and therefore cold) for consistent winter use. The Flack Lake site received a recreational/fitness rating of 3. Overlook could be developed to provide a picnic area and a longer trail. It would not be feasible to develop a short (wheelchair accessible) trail because of the severe slope. For the same reason, nordic skiing would be difficult to develop. If offered, it would be limited to more highly skilled skiers. There is no water access at Overlook. The Overlook site received a recreational/fitness rating of 2. Kame clear-cut could be developed for both short and longer trails; however, it would not be appropriate for skiing because of the openness. There is no water access at Kame clear-cut and the site was judged to be unattractive as a picnic area. It received a recreational/fitness rating of 2. Finally, White River offered all recreational/fitness possibilities except a beach area. It received a rating of 5.

Clearly, the Spine-Hemlock and White River sites offered the greatest potential for recreational and fitness activities. The other sites were judged to be rather limited in their potential. Since it would not likely be economically feasible to develop all sites for recreational/fitness activities, the fact that only two sites are appropriate is not a drawback.

Educational Potential

Each site was evaluated for five forest management features (old growth, select cut, clear-cut, planted regeneration, and natural regeneration) and three natural history characteristics (geological, botanical, and ornithological). Thus, a site could receive a maximum educational rating of 8. Spine-Hemlock could be developed to demonstrate both old-growth and natural regeneration features. While the site does not have a large number of old (hemlock or yellow birch) trees, the ones that are present provide a good contrast with the younger regrowth. The older hemlocks are also exceptional for this region of Ontario. For this reason, they are of educational interest. Spine-Hemlock also provides good potential for both botanical and ornithological educational experiences for prospective visitors.

Spine-Hemlock received an educational rating of 4. Hardwood was judged to be a good site to demonstrate old growth, select cut features, and a diversity of tree species. Differentiation of species that grow on both wet and dry soils and the difference between 50-year-old and 200-year-old trees would be easily demonstrated. The geological features, as well as the diversity of botanical and ornithological life, are also positive aspects of this site. As such, the Hardwood site received an educational rating of 5. The Flack Lake site provides a good demonstration of clear-cutting, as well as natural and planted regrowth. The red pine and spruce (planted) seedlings are from 2 to 4 feet in height and give the otherwise open site a "green-carpeted" appearance from a distance. Because of the infertility of the soil and the (young) age of the regrowth, there is relatively little to stimulate botanical interest; however, both the geological features and the potential for bird watching are positive characteristics. In sum, the Flack Lake site scored 5 for educational potential. The Overlook site provides good examples of clear-cutting and planted regeneration techniques. However, although the view of the surrounding countryside is magnificent, the site itself has only limited botanical, geological, and ornithological educational potential. As such, Overlook received a rating of only 2 for educational potential. In contrast to Overlook, Kame clear-cut not only provides good examples of clear-cutting and natural and planted regrowth, but also provided an interesting geological feature (i.e., kame formed during the ice ages). The replanting features are particularly noteworthy, as the site provides examples of seedlings that are less than 5 years of age in close proximity to a stand of replanted red pines that are 60 to 70 years of age. In sum, the Kame clear-cut site received an educational rating of 4. White River provides an interesting combination of old-growth trees in close proximity to a clear-cut area with planted regeneration (replanted red pines approximately 18–20 years old). In addition to its beauty along the river bank, the site has geological interest as well as botanical and ornithological diversity. As such, White River received a rating of 6.

CONCLUSIONS AND RECOMMENDATIONS

Overall Rating

A rating based on the sum of the ratings for the four broad categories (visual appeal, general attributes, recreational/fitness, and educational potential) was calculated. This is provided in Table 2. It is interesting to note that Spine-Hemlock and White River received the highest overall ratings.

Since Spine-Hemlock is already developed, it is at least a partial validation of the method presented here that this site should be highly rated. Spine-Hemlock was ranked as the highest of the six sites for general attributes and recreational/fitness features. From an economic perspective it would be cost effective to develop this site further into a forest management education site. As noted above, no site was given a perfect rating. This means that a series of sites will be required to give the ecotourist a more complete education.

Table 2. Summary rating for the six sites.

Category	Site[1]					
	2	4	6	14	15	16
Visual appeal	1^{3}	2^{5}	3^{6}	0^{1}	1^{3}	1^{3}
General attributes	6^{6}	5^{4}	4^{2}	3^{1}	5^{4}	5^{4}
Fitness/recreation	6^{6}	$3^{3.5}$	$3^{3.5}$	$2^{1.5}$	$2^{1.5}$	5^{5}
Educational potential	$4^{2.5}$	$5^{4.5}$	$5^{4.5}$	2^{1}	$4^{2.5}$	6^{6}
Total rating	17	15	15	7	12	17
Total ranking (superscripts)	17.5	17	16	4.5	11	18

[1] Site 2 = Spine-Hemlock, Site 4 = Hardwood, Site 6 = Flack Lake, Site 14 = Overlook, Site 15 = Kame clear-cut, and Site 16 = White River.

Spine-Hemlock has several qualities that would make it an ideal beginning point for an educational tour. First, Spine-Hemlock would be the first site to be passed by tourists coming north on Highway 17 toward Elliot Lake on the Deer Trail (Highways 108/639/546) (*see* Fig. 1). Signs along Highway 17 and the tourist information centre at the junction of this route and Highway 108 could be used to attract the ecotourist to this series of sites. Second, the existing interpretive centre at Spine-Hemlock could be expanded to introduce the visitor to the other sites. Third, Spine-Hemlock's highest value from an educational perspective is its old trees. The present research suggested that ecotourists will be more attracted to old forest than to clear-cut areas. Fourth, this site can be used to educate the tourist about other forestry techniques (e.g., clear-cut) without the ecotourist actually visiting such a site. Additional information could be presented at Spine-Hemlock to attract visitors to the sites demonstrating the other "less (psychologically) attractive" techniques.

White River, an undeveloped site, is also ideally situated for ecotourism. Since this site is the furthest one south along Highway 546, it could also be used as a starting point for those tourists coming up the Deer Trail from Iron Bridge (Highway 17). However, this site would require work and expense for development. This site is psychologically attractive as it offers old-growth trees and superior educational opportunities. These are combined with

exceptional general attributes and recreational/fitness potential. White River and Spine-Hemlock would also be good tour-ending locations since they would both be suitable for picnicking and other recreational activities.

Hardwood and Flack Lake were also highly rated (potential) sites. Situated between Spine-Hemlock and White River (*see* Fig. 1), these latter two sites could be developed to complete the forest management educational package on the Deer Trail. Since the mandate of this research project was forest management education, it was important to ensure that the educational experience was complete. This may not be a concern for other planners; thus, one or two sites may be sufficient. It should be noted that at Hardwood and Flack Lake complete rest and comfort facilities could not be provided. Therefore, visitors would spend less time at these sites and fewer planned experiences would be needed.

Based on their low rankings, Overlook and Kame clear-cut could not be highly recommended for development. However, because of the success of the planted regrowth, because of its age (60–70 year old replanted trees), and because of the extent to which nature has regenerated an ecologically pleasing setting, Kame clear-cut is none-the-less worth mentioning. This site would not only educate the ecotourist about forest management techniques, but also help foster a positive attitude toward commercial forest operations. To the extent that fostering positive attitudes is important, the Kame clear-cut site could be easily and economically developed as a "5-minute" stop.

Several additional points need to be clarified. First, not all categories may be deemed equally important by the site planner. Therefore, a total rating may be neither necessary nor desirable. Second, the scheme used in the present research gave nearly equal weighting to the four categories since the maximum possible score for each was approximately the same. A second way of ensuring mathematical equality is to rank sites within each category. This ranking procedure is illustrated in Table 2. The superscripted numbers are the ranks for each site within each category. The best site was given a rank of 6 and the worst a rank of 1. For example, within the educational potential category, White River was ranked the highest. Thus, it received a rank of 6. Flack Lake and Hardwood were tied and each received a rank of 4.5. Spine-Hemlock and Kame clear-cut were also tied and therefore received 2.5. Overlook had the lowest educational potential and received a rank of 1. The sum of ranks is also given in Table 2.

Recommendations

1. Site planners should give consideration to existing or partially developed sites so as to minimize expenses involved in new site development.
2. No one site offers all opportunities for education and wilderness experience. Hence, a series of sites will likely be necessary to maximize these experiences for the ecotourist.
3. If possible, when offering or suggesting a tour of sites to the ecotourist, the starting point should allow for viewing of old-growth forests.
4. Another potential strategy would be to attract the ecotourist to one "ideal" site. Once there, the educational process could be continued using information or displays set up at an interpretive centre. This educational model would likely be necessary in any event to attract tourists to additional sites.
5. When sites are to be developed over a period of time, then the sites with the greatest potential (i.e., highest rating) should be developed first. Using this strategy, early visitors would likely be more satisfied with their experience, and thus more likely to visit subsequently developed sites or to recommend the tour/experience to others.

ACKNOWLEDGMENTS

Funding for this research was provided by the Northern Ontario Development Agreement (Canadian Forest Service–Sault Ste. Marie and Ontario Ministry of Natural Resources). Technical and administrative assistance was provided through the Elliot Lake Research Field Station (Director, D. Berthelot), Laurentian University, Sudbury, Ontario. Academic assistance with the research questionnaire was provided by Dr. Paul Eagles, Department of Recreation and Leisure Studies, University of Waterloo, Waterloo, Ontario.

REFERENCES

Eagles, P.F.J. 1992. The motivations of Canadian ecotourists. p. 12–19 *in* B. Weiler, ed. Ecotourism: Incorporating the Global Classroom. Bureau of Tourism Research, Canberra, Australia.

Eagles, P.F.J.; Buse, S.D.; Hvenegaard, G.T., eds. 1993. Ecotourism: An annotated bibliography for planners and managers. The Ecotourism Society, North Bennington, VT.

Kretchman, J.A.; Eagles, P.F.J. 1990. An analysis of the motives of ecotourists in comparison to the general Canadian population. Society and Leisure, 13(2): 499–508.

Magill, A.W. 1990. Assessing the public concern for landscape quality: A potential model to identify visual thresholds. U.S. Dept. of Agriculture, Forest Service, Pacific Southwest Research Station, Berkley, CA. Research paper PSW-RP-203.

Magill, A.W. 1992. Managed and natural landscapes: What do people like? U.S. Dept. of Agriculture, Forest Service, Pacific Southwest Research Station, Berkley, CA. Research Paper PSW-RP-213.

Scace, R.C.; Grifone, E.; Usher, R. 1992. Ecotourism in Canada. Canadian Environmental Advisory Council, Ottawa, ON.

Statistics Canada. 1990. Canadian travel survey. Household Surveys Division, Ottawa, ON.

APPENDIX A

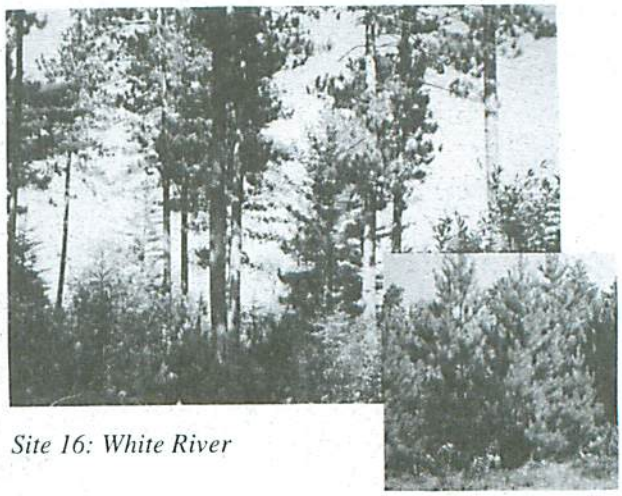
Site 2: Spine-Hemlock

Site 14: Overlook

Site 4: Hardwood

Site 15: Kame clear-cut

Site 6: Flack Lake



Site 16: White River

APPENDIX B

Table B1. Reasons for stopping by mindset.

Reasons	Old-growth mindset (%)	Forest-management mindset (%)
Personal interest in nature	[1] 48.8	[1] 48.6
Support development of forests	9.3	11.9
Learning experience	[3] 25.3	[2] 28.6
To be physically active	[5] 21.9	[4] 27.2
Hunt and fish	11.2	7.8
Environmental concern	14.6	[6] 20.4
Gain an appreciation of forests	18.0	14.6
Experience wilderness and undisturbed nature	[2] 40.7	[5] 25.9*
Observe birds	3.9	5.8
Photograph landscape and wildlife	18.8	12.6*
Observe lakes	12.6	11.9
Observe mammals	3.9	3.4
Experience new things	11.2	10.9
Welcome break from highway driving	19.4	[3] 27.9*
Family outing	13.8	16.0
Unique educational tool for children	[4] 22.2	[7] 20.1

[1–7] Superscripts represent the rankings of the reasons most frequently chosen for stopping.
* Significant $p < .05$.

Table B2. Mean likelihood of stopping by previous visitors.

Previous visitors	Likelihood of stopping
Yes	3.6 *
No	3.1

* Significant $p < .001$.

Table B3. Reasons for stopping by family compliment.

Reasons	Adults only (%)	Adult plus children (%)
Personal interest in nature	[1] 54.6	[2] 38.8*
Support development of forests	12.0	7.9
Learning experience	[4] 27.4	[4] 25.6
To be physically active	[3] 28.4	17.4*
Hunt and fish	9.3	10.3
Environmental concern	19.4	13.6
Gain an appreciation of forests	17.2	15.3
Experience wilderness and undisturbed nature	[2] 36.8	[3] 29.3
Observe birds	6.6	1.7*
Photograph landscape and wildlife	[6] 20.3	8.7*
Observe lakes	13.2	10.9
Observe mammals	3.7	3.7
Experience new things	12.3	9.1
Welcome break from highway driving	[5] 22.1	[6] 25.2
Family outing	8.3	[5] 25.6*
Educational experience for children	1.0	[1] 55.4*

[1–6] Superscripts represent the rankings of the reasons most frequently chosen for stopping.
* Significant $p < .05$.

Table B4. Reasons for stopping by age.

Reasons	Younger adults (%)	Middle-aged adults (%)	Older adults(%)
Personal interest in nature	[1] 48.5	[1] 44.3	[1] 64.0*
Support development of forests	7.6	10.3	14.9
Learning experience	18.2	[3] 27.3	[2] 36.0*
To be physically active	[3] 31.8	[5] 23.5	[5] 20.2
Hunt and fish	13.6	9.8	7.0
Environmental concern	15.2	16.3	[4] 23.7
Gain an appreciation of forests	13.6	18.5	13.2
Experience wilderness and undisturbed nature	[2] 34.8	[2] 34.8	[3] 30.7
Observe birds	3.0	4.3	8.8
Photograph landscape and wildlife	16.7	15.3	15.8
Observe lakes	15.2	12.8	7.0
Observe mammals	2.3	4.0	4.4
Experience new things	9.1	11.5	11.4
Welcome break from highway driving	[4] 24.2	[6] 23.3	18.4
Family outing	16.7	16.5	7.9
Educational experience for children	18.9	[4] 25.0	9.6

[1–6]Superscripts represent the rankings of the reasons most frequently chosen for stopping.
* Significant $p < .05$.

Table B5. Reasons for stopping by previous visitors.

Reasons	Yes (%)	No (%)
Personal interest in nature	[1] 53.9	[1] 45.5*
Support development of forests	12.5	8.8
Learning experience	[4] 23.2	[3] 29.5
To be physically active	[3] 25.7	[5] 23.1
Hunt and fish	9.3	10.1
Environmental concern	12.9	[7] 20.5*
Gain an appreciation of forests	17.5	16.0
Experience wilderness and undisturbed nature	[2] 35.7	[3] 32.4
Observe birds	6.8	3.5
Photograph landscape and wildlife	19.6	13.8*
Observe lakes	13.2	11.4
Observe mammals	4.3	3.2
Experience new things	9.3	11.7
Welcome break from highway driving	[5] 22.1	[4] 23.9
Family outing	13.2	16.2
Educational experience for children	18.6	[6] 22.6

[1–7]Superscripts represent the rankings of the reasons most frequently chosen for stopping.
* Significant $p < .05$.

Table B6. General site characteristics by mindset.

General site characteristics	Old-growth mindset (%)	Forest-management mindset (%)
Rest and comfort facilities	[1] 71.3	[1] 74.5
Restaurant	14.9	17.0
Souvenir shop	2.5	0.7
Interpretive centre	[4] 46.1	[2] 53.1
Campground / trailer park	12.9	10.9
Tourist information booth	8.1	9.5
Telephone	3.1	3.1
Convenient parking	[5] 20.8	[5] 19.4
Natural / interesting setting	[3] 50.0	[3] 49.3
Nature trails	[2] 54.2	[4] 46.9
Park attendant on duty	5.9	4.8
Exercise facilities	3.7	3.1

[1–5]Superscripts represent the rankings of the most frequently chosen general site characteristics.

Table B7. General site characteristics by age.

General site characteristics	Younger adults (%)	Middle-aged adults (%)	Older adults (%)
Rest and comfort facilities	[1] 73.5	[1] 75.8	[1] 65.8
Restaurant	15.2	16.5	12.3
Souvenir shop	0.8	2.0	0.9
Interpretive centre	[4] 35.6	[2] 52.3	[2] 55.3*
Campground / trailer park	[5] 22.0	9.5	11.4*
Tourist information booth	6.8	7.5	10.5
Telephone	3.8	2.5	4.4
Convenient parking	15.2	[5] 20.3	[5] 25.4
Natural / interesting setting	[3] 49.2	[3] 50.3	[3] 49.1
Nature trails	[2] 59.1	[4] 49.5	[4] 48.2
Park attendant on duty	4.5	4.8	8.8
Exercise facilities	3.0	3.8	1.8

[1–5]Superscripts represent the rankings of the most frequently chosen general site characteristics.

* Significant $p < .05$.

Table B8. General site characteristics by family complement.

General site characteristics	Adults only (%)	Adults plus children(%)
Rest and comfort facilities	[1] 68.9	[1] 79.3*
Restaurant	16.9	14.0
Souvenir shop	1.2	2.5
Interpretive centre	[4] 47.8	[2] 51.7
Campground / trailer park	10.5	14.5
Tourist information booth	8.6	9.1
Telephone	3.4	2.5
Convenient parking	[5] 18.4	[5] 23.1
Natural / interesting setting	[3] 52.7	[4] 44.6*
Nature trails	[2] 53.2	[3] 47.1
Park attendant on duty	6.1	4.1
Exercise facilities	2.9	4.1

[1–5]Superscripts represent the rankings of the most frequently chosen general site characteristics.
* Significant $p < .05$.

Table B9. General site characteristics by previous visitors.

General site characteristics	Yes (%)	No (%)
Rest and comfort facilities	[1] 70.7	[1] 74.7
Restaurant	12.9	17.8
Souvenir shop	1.1	2.1
Interpretive centre	[4] 54.6	[4] 46.0
Campground / trailer park	14.3	10.4
Tourist information booth	4.6	11.4*
Telephone	3.2	3.2
Convenient parking	15.7	[5] 23.9*
Natural / interesting setting	[3] 55.0	[3] 46.0*
Nature trails	[2] 55.7	[4] 46.8*
Park attendant on duty	3.9	6.4
Exercise facilities	3.6	3.2

[1–5]Superscripts represent the rankings of the most frequently chosen general site characteristics.
* Significant $p < .05$.

Table B10. Educational services by mindset.

Educational services	Old-growth mindset (%)	Forest-management mindset (%)
Visual displays	[2] 53.9	[2] 63.6*
Auditory displays	5.6	3.7
Read-along displays	[3] 35.1	[3] 34.4
Books	9.3	9.5
Audiovisual presentations	14.0	19.0
Information people	[4] 33.4	[4] 34.0
Self-guided nature trails	[1] 73.3	[1] 70.4
Guided tours	18.3	18.0
Child-geared learning material	16.6	15.6

[1–4]Superscripts represents the rankings of the most frequently chosen educational services.
* Significant $p < .05$.

Table B11. Educational services by age.

Educational services	Younger adults (%)	Middle-aged adults (%)	Older adults (%)
Visual displays	[2] 53.0	[2] 59.3	[2] 62.3
Auditory displays	2.3	5.8	4.4
Read-along displays	[3] 35.6	[3] 35.3	[4] 30.7
Books	9.8	9.0	9.6
Audiovisual presentations	8.3	16.8	[5] 22.8*
Information people	[5] 28.0	[4] 33.3	[3] 41.2
Self-guided nature trails	[1] 74.2	[1] 73.5	[1] 64.9
Guided tours	15.9	18.8	21.9
Child-geared learing material	[4] 28.8	15.0	3.5*

[1–5]Superscripts represents the rankings of the most frequently chosen educational services.

* Significant $p < .05$.

Table B12. Educational services by family complement.

Educational services	Adults only (%)	Adult plus children (%)
Visual displays	[2] 58.6	[2] 57.9
Auditory displays	4.9	4.5
Read-along displays	[3] 35.5	[4] 33.5
Books	11.3	6.2*
Audiovisual presentations	17.2	14.9
Information people	[4] 35.5	[5] 30.6
Self-guided nature trails	[1] 72.1	[1] 71.9
Guided tours	17.9	18.6
Child-geared learing material	2.0	[3] 40.1*

[1–5]Superscripts represents the rankings of the most frequently chosen educational services.

* Significant $p < .05$.

Table B13. Educational services by previous visitors.

Educational services	Yes (%)	No (%)
Visual displays	[2] 58.9	[2] 58.5*
Auditory displays	5.4	4.3
Read-along displays	[3] 36.8	[4] 33.2
Books	9.3	9.0
Audiovisual presentations	18.2	14.4
Information people	[4] 29.3	[3] 37.0*
Self-guided nature trails	[1] 77.5	[1] 68.1*
Guided tours	16.1	19.1
Child-geared learing material	13.9	18.1

[1–4]Superscripts represents the rankings of the most frequently chosen educational services.

* Significant $p < .05$.

APPENDIX C

Table C1. Recreational facilities by mindset.

Recreational facilities	Old-growth mindset (%)	Forest-management mindset (%)
Short, handrail/wheelchair trails	12.4	14.6
Short, flat hiking trails	[2] 52.2	[2] 55.1
Long rigorous hiking trails	[3] 40.4	[3] 38.1
Children's play areas	16.3	13.3
Child activities	14.0	11.9
Snowmobile / all-terrain trails	5.9	4.1
Picnic areas	[1] 60.4	[1] 68.0*
Beaches	[4] 34.8	[4] 36.7
Areas for hunting	3.4	2.7
Areas for fishing	14.0	11.2
None	7.6	6.8

[1–4]Superscripts represent the rankings of the most frequently chosen recreational facilities.

* Significant $p < .05$.

Table C2. Recreational facilities by age.

Recreational facilities	Younger adults (%)	Middle-aged adults (%)	Older adults (%)
Short, handrail/wheelchair trails	10.6	13.5	17.5
Short, flat hiking trails	[2] 52.3	[2] 55.8	[2] 50.0
Long challenging hiking trails	[4] 37.1	[3] 38.8	[3] 44.7
Children's play areas	[5] 24.2	13.8	3.5*
Child activities	19.7	14.3	6.1*
Snowmobile / all-terrain trails	9.1	4.3	4.4
Picnic areas	[1] 62.9	[1] 64.8	[1] 57.9
Beaches	[3] 40.9	[4] 36.8	[4] 24.6*
Areas for hunting	3.8	2.8	4.4
Areas for fishing	13.6	13.3	13.2
None	1.5	7.3	14.0

[1–5]Superscripts represent the rankings of the most frequently chosen recreational facilities.

* Significant $p < .05$.

Table C3. Recreational facilities by family complement.

Recreational facilities	Adults only (%)	Adult plus children (%)
Short, handrail/wheelchair trails	15.9	9.1*
Short, flat hiking trails	[2] 56.9	[2] 47.9*
Long challenging hiking trails	[3] 46.8	[6] 26.9*
Children's play areas	2.7	[3] 35.5*
Child activities	2.0	[4] 34.3*
Snowmobile / all-terrain trails	5.6	4.1
Picnic areas	[1] 63.7	[1] 64.0
Beaches	[4] 36.0	[5] 35.1
Areas for hunting	3.7	2.1
Areas for fishing	14.7	9.5
None	8.1	5.8

[1–6]Superscripts represent the rankings of the most frequently chosen recreational facilities.

* Significant $p < .05$.

Table C4. Recreational facilities by previous visitors.

Recreational facilities	Yes (%)	No (%)
Short, handrail/wheelchair trails	15.7	12.2
Short, flat hiking trails	[2] 53.9	[2] 52.9
Long challenging hiking trails	[3] 48.2	[3] 33.2*
Children's play areas	10.7	18.1*
Child activities	11.8	15.7
Snowmobile / all-terrain trails	5.7	4.5
Picnic areas	[1] 60.7	[1] 64.9
Beaches	[4] 32.9	[4] 36.7
Areas for hunting	4.6	2.4
Areas for fishing	13.2	13.3

[1–4]Superscripts represent the rankings of the most frequently chosen recreational facilities.

* Significant $p < .05$.

Table C5. Fitness facilities by mindset.

Fitness facilities	Old-growth mindset (%)	Forest-management mindset (%)
Vita parcours	16.3	21.4
Map navigation through the forest	[1] 41.9	[1] 42.9
Cross-country skiing	[3] 31.5	[3] 34.4
Mountain biking	12.6	15.6
Canoeing / kayaking	[4] 29.2	[2] 35.7
Backpacking	[2] 32.3	[4] 23.8*
Jogging	6.2	8.5
Snowmobiling	8.4	7.5
Rock climbing	4.8	8.1

[1–4]Superscripts represent the rankings of the most frequently chosen fitness facilities.

* Significant $p < .05$.

Table C6. Fitness facilities by age.

Fitness facilities	Younger adults (%)	Middle-aged adults (%)	Older adults (%)
Vita parcours	15.2	19.5	16.7
Map navigation through the forest	[1] 40.9	[1] 42.8	[1] 43.0
Cross-country skiing	[4] 29.5	[2] 33.5	[2] 31.6
Mountain biking	[5] 23.5	13.5	4.4*
Canoeing / kayaking	[2] 40.2	[3] 30.8	[3] 25.4*
Backpacking	[3] 31.8	[4] 28.5	[4] 21.9
Jogging	7.6	8.0	4.4
Snowmobiling	13.6	7.5	6.1
Rock climbing	9.1	4.8	7.0
None	18.2	22.8	30.7

[1–5]Superscripts represent the rankings of the most frequently chosen fitness facilities.
* Significant $p < .05$.

Table C7. Fitness facilities by family complement.

Fitness facilities	Adultsonly (%)	Adultplus children (%)
Vita parcours	19.6	16.9
Map navigation through the forest	[1] 43.6	[1] 40.1
Cross-country skiing	[2] 34.6	[3] 29.8
Mountain biking	13.7	14.5
Canoeing / kayaking	[3] 31.9	[2] 32.6
Backpacking	[4] 28.8	[4] 28.9
Jogging	6.9	7.9
Snowmobiling	7.9	9.5
Rock climbing	6.1	6.6
None	[5] 21.1	[5] 25.6

[1–5]Superscripts represent the rankings of the most frequently chosen fitness facilities.
* Significant $p < .05$.

Table C8. Fitness facilities by previous visitors.

Fitness facilities	Yes (%)	No (%)
Vita parcours	15.4	19.9
Map navigation through the forest	[1] 47.9	[1] 38.0*
Cross-country skiing	[3] 37.1	[3] 28.0*
Mountain biking	18.6	10.9*
Canoeing / kayaking	[2] 37.9	[4] 27.7*
Backpacking	[4] 32.5	[4] 25.0*
Jogging	5.7	8.2
Snowmobiling	9.6	7.4
Rock climbing	8.2	4.5
None	14.6	29.5*

[1–4]Superscripts represent the rankings of the most frequently chosen fitness facilities.
* Significant $p < .05$.