

Development of an Ecotourism Opportunity Spectrum (ECOS) for Sites Identified Using GIS in Northern Ontario

S.W. Boyd and R.W. Butler

Butler and Boyd Associates
366F Head Street North
Strathroy, Ontario
N7G 2J9

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ABSTRACT

Over the past decade and a half, management frameworks and procedures developed to address impacts resulting from recreation and tourism have attempted to indicate acceptable limits of use. These have included the Recreation Opportunity Spectrum, the Tourism Opportunity Spectrum, Limits of Acceptable Change, Visitor Activities Management Planning, and the Visitor Impact Monitoring Process. This technical report outlines the development of a new framework within which the opportunity for ecotourism may be set. Based on existing approaches used in the field of resources management, the framework incorporates ideas from the Recreation Opportunity Spectrum and modifies ideas presented in the Tourism Opportunity Spectrum to specifically address ecotourism. Termed the Ecotourism Opportunity Spectrum, it is comprised of eight components: 1) access, 2) other resource-related activities, 3) attractions offered, 4) existing infrastructures, 5) social interaction, 6) level of skill and knowledge, 7) acceptance of visitor impacts, and 8) acceptance for a management regime. Aspects of the Ecotourism Opportunity Spectrum framework are applied to ecotourism areas in northern Ontario that had been previously identified using a Geographical Information Systems approach. Recommendations on evaluating the priority of ecotourism activities and opportunities, and on assessing the significance of the environmental impacts that may result are also presented.

RÉSUMÉ

Ces quinze dernières années, dans les cadres et les procédures de gestion élaborés pour tenir compte des effets des activités récréatives et touristiques, on a tenté de déterminer des limites d'utilisation acceptable. Ainsi, on a notamment défini le spectre des possibilités récréatives, le spectre des possibilités touristiques, les limites du changement acceptable, la planification de la gestion des activités des visiteurs et le processus de surveillance des effets des visiteurs. Dans le rapport technique présenté ici, on décrit dans les grandes lignes un nouveau cadre de travail dans lequel les possibilités d'écotourisme peuvent être prises en considération. Inspiré des approches actuelles de la gestion des ressources, ce cadre de travail met en jeu des composantes du spectre des possibilités récréatives ainsi que certains éléments modifiés du spectre des possibilités touristiques, ce qui permet de l'appliquer expressément à l'étude de l'écotourisme. Appelé

« spectre des possibilités écotouristiques », il comprend huit éléments : 1) accès, 2) autres activités liées aux ressources, 3) attractions, 4) infrastructures existantes, 5) interaction sociale, 6) aptitudes et connaissances, 7) acceptabilité des effets dus aux visiteurs et 8) acceptabilité au point de vue du régime de gestion. Certains éléments du spectre des possibilités écotouristiques sont mis en application dans des zones d'écotourisme du nord de l'Ontario qu'on avait repérées par une approche faisant intervenir des systèmes d'information géographique. On formule également des recommandations sur la détermination de la priorité à accorder aux possibilités et aux activités écotouristiques et sur l'évaluation de l'importance des effets environnementaux qui peuvent s'ensuivre.

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DEVELOPMENT OF AN ECOTOURISM OPPORTUNITY SPECTRUM (ECOS) FOR SITES IDENTIFIED USING GIS IN NORTHERN ONTARIO

INTRODUCTION

A previous report (Boyd et al. 1994) addressed the production of maps of both the individual layers within the GIS and a combination of all layers to produce cumulative scores. Using these, areas perceived as having the best potential for ecotourism could be identified. Application of this methodology within the study area produced 16 "Ecotourism Units" (Boyd et al. 1994). Four of these units were classed as Type I; 12 were given Type II designation. The type of Ecotourism Unit was determined from the overall score that an area received, based on the presence of ecotourism criteria for each area (Boyd and Butler 1993) and the extent to which the criteria conformed to the parameters that had been assigned to them (Boyd and Butler 1994). Each Ecotourism Unit represented a contiguous area greater than 300 square kilometers in size. While earlier work focused on identifying ecotourism areas, emphasis in this report centered on the development potential of identified areas from the position of the opportunities they offer for ecotourism.

The Ecotourism Units were identified using databases deemed to be the best representative for criteria viewed as appropriate for ecotourism within northern Ontario (i.e., naturalness, wildlife, landscape, community). However, the challenge of matching appropriate data sets with ecotourism criteria often resulted in the need to use secondary sources, which were less up-to-date and of poorer quality. For example, the remotely sensed data used to map the distribution of vegetation cover over the study area was not current. It had been collated in 1991–1992 for a forest fragmentation and biodiversity project that focused on the mapping of old-growth forest within Ontario.

In light of these comments, it is important to understand that discussion of the Ecotourism Units is based on those areas and their shapes as they were determined by the GIS exercise undertaken in the first half of 1994. Regions change over time and the authors are cognizant of this fact. However, the absence of any mechanism in the study area to detect and monitor change means that within this current report discussion on the opportunities for ecotourism within each unit are based on the actual areas that were produced as a result of the GIS. It does not take into account how these units may have been altered since the summer of 1994 as a result of fire, timber cutting, or road construction.

It was considered that on-site examination conducted in the latter part of the summer of 1994 would provide an

opportunity to make some general assessment of each unit and act as a ground-truthing exercise for the GIS output itself. Changes that may have occurred since the methodology was applied to the study region could also be noted. In reality, however, the amount of information coming from such examination was hampered because of difficulty in getting close to or traveling through some units, and problems in determining when one was actually inside the boundaries of a unit. As a result, the type of information produced from on-site examination allows for only a general discussion of the opportunities for ecotourism within the units.

To comment on these, this report develops a framework within which opportunities for ecotourism may be set. The proposed framework is based on a unit's potential for development as the areas have not yet been developed for ecotourism. Although management of the units is important and must obviously be a part of the overall framework, no specific comments are offered here as to who should manage the areas (if they are or were to be developed). However, development of any area in which activities are seen as being sensitive to the surrounding environment will require that some system of control be put in place (inevitably, this will mean that some agency will assume responsibility for those units developed, *see* Figure 2, Boyd and Butler 1994).

The framework proposed is not new, but rather is based on existing approaches used in the field of resource management. It incorporates ideas from the Recreational Opportunity Spectrum (ROS) (Clarke and Stankey 1979) and the Tourism Opportunity Spectrum (TOS) (Butler and Waldbrook 1991). The ROS was developed for the United States Forestry Service in the late 1970s to address the need to better integrate recreation into multiple-use management planning. The TOS offered a new planning tool, based on the framework of the ROS, for natural resource-based tourism development. The framework proposed here modifies the ideas presented in TOS to specifically address ecotourism, and as such is termed the Ecotourism Opportunity Spectrum (ECOS).

Development of the ECOS framework is set against a discussion of a number of key terms or concepts. Understanding opportunities for ecotourism within any environment involves recognizing an area's carrying capacity, and the level to which use is acceptable. It also requires adequate knowledge on appropriate use and the degree to which that use is compatible with other nontourism uses. Also of importance is the need to exercise control over the

level of use permitted and to ensure some form of accountability over action taken, whether that be in the form of existing agencies or the creation of a new one. Within the framework itself, factors, such as access to units, the comparability of nontourism uses, the level of social interaction, the presence of existing infrastructure, and the modification of structures located within units themselves, are examined.

REVIEW OF KEY CONCEPTS AND RELATED TERMS

It should be readily apparent from an examination of ecotourism that the relationship between any activity and the environment in which it takes place is of critical importance. Ecotourism, more than any other form of tourism, is dependent upon the quality of the environment. Extra care must be taken by managers and developers of ecotourism destinations to ensure that the impacts from the activity are controlled and minimized. Hvenegaard (1994) makes this point when he notes, "The effects are more serious for ecotourism than general tourism because the former is more dependent on intact natural environments than the latter, in terms of attracting discerning visitors" (p. 26). It is important to appreciate that ecotourism, however benign it may be, will still have some effects on the environment and, therefore, requires management and control just as any other form of tourism or resource activity. As well, the amount of use is a critical parameter for ecotourism.

Two key issues interrelate here. One is the problem of maintaining the quality and ecological integrity of the resource base in which ecotourism is being undertaken. This is important to ensure the maintenance of the resource for its own sake and to ensure that it remains attractive to tourists and other users. The second is the problem of maintaining the quality of the recreation experience for the ecotourists themselves. This is based not only on the quality of the natural environment, but also on the levels and nature of the interaction between groups of users. Research over the last three decades, beginning with Lucas (1964), has clearly shown that the key factors that affect the quality of the experience for the user are the number and type of other users encountered, together with personal expectations and experience (Butler et al. 1992a).

Carrying Capacity

Initially, the solution to these problems was sought in the concept of carrying capacity; that is, placing a limit on the number of users allowed access to a resource. This would keep visitation at or below the level at which it would cause irreparable damage to the resource. The best analogy was with the carrying capacity of rangeland for stock or wildlife. However, it quickly became accepted that in a

recreational and tourist context the concept of carrying capacity was not as simple as with rangeland management. Too many other variables intervened. In particular, it became apparent that in some situations the mix of users was just as important as was the actual number of users. Stemming from this came the logical conclusion that how the resource was managed was of equal significance to the actual numbers of users. Thus, by the mid-1980s the concept of carrying capacity had moved from one of finding optimal numbers of users to one involving the management of resources, user expectations and preferences, and physical parameters of the resource (Shelby and Heberlein 1986). A vast amount of research has been carried out on this topic, particularly by the United States Forest Service, and a review of the carrying capacity literature in the early 1990s revealed over 3 000 references (Vaske 1992).

Several key elements can be identified from this literature. First, limits on the numbers of users are of little value unless they are placed in the context of management objectives. Second, it is generally accepted that there are a number of measures of user satisfaction for any area. Related to this is the fact that user dissatisfaction may not be simply a mirror image of satisfaction. Third, compatibility or tolerance of different user groups to one another varies with the nature of the resource and other elements, including frequency, place, type, and time of encounters. Fourth, ecological effects of use in an area vary widely, and indicators of change may be numerous.

On the basis of these comments some general conclusions about carrying capacity can be identified. Stankey and McCool (1986) argued that many studies have suggested that a statistically significant relationship does not exist between levels of use and levels of satisfaction. This is not to say, however, that there is not a relationship between levels of use and levels of ecological impact. There are indications that users will self-select areas according to their desires, experiences, and expectations; that is, those seeking solitude will not visit areas in which they expect significant use. There is evidence that a variety of forms of capacity also exist; Shelby and Heberlein (1986) suggest ecological, social, physical (space), and facility, and Butler et al. (1992) add a fifth, institutional, relating to safety and legal limits.

Irrespective of the numbers and varieties of carrying capacity, the fact remains that the concept still has applicability to tourism and recreation areas, particularly in the context of ecotourism. Central to all of the concepts is agreement over management of the resource and the user, and general acceptance that in the absence of such control (on levels, type, and time of use in particular) overuse, misuse, and abuse of the resource are likely to occur over

Ecotourism, unlike many other forms of tourism, is not heavily consumptive of the environment. The characteristics and interests of the visitors mean that they are normally responsive to controls on behavior aimed at limiting environmental impacts. However, irrespective of their intentions, human presence in an area will have impacts. Disturbance of wildlife is inevitable with the use of any area. What is important is the critical level and timing of such disturbance. Given the general absence of mechanization in ecotourism, once tourists are within an area at least some of the impacts shown in Figure 1 are relatively unlikely to occur, or to occur at a significant level. Water pollution from motors may not happen, especially if paddling canoes or walking are the only means of access within an area. It is relatively easy to reduce or eliminate garbage and associated pollution if all waste (except human waste) is carried out. However, impacts upon vegetation and soil are always likely; for example, trail and portage compaction, campsite compaction, vegetation loss, and bank erosion at portages. Engineering solutions can be found to some of these problems, but with such solutions comes loss of naturalness, argued to be one of the key attractions of areas for ecotourists. This is where management decision making becomes of paramount importance.

MANAGEMENT PROCEDURES AND EXISTING MANAGEMENT FRAMEWORKS

Management Procedures

Over the last two decades a number of management procedures aimed at resolving complex problems have been developed with particular reference to wilderness and natural areas. In general, these frameworks have placed a focus upon recreation opportunities rather than on identifying specific capacity limitations, although issues such as numbers of users, quality of experience, and quality of environment underlie all of them. One of the first, and the most widely adopted, frameworks was that of the Recreation Opportunity Spectrum (ROS) (Clark and Stankey 1979), which attempts to incorporate the relationships between the setting, the activities, the user expectations, and the role of management (Fig. 2). This framework took a behavioral approach, defining the recreational setting as the combination of physical, biological, social, and managerial attributes. It established a spectrum of recreational settings that varied from the one extreme of pristine wilderness to the other extreme of high density urban recreation. It utilized six specific attributes to define the nature of opportunities for recreation deemed possible within each setting: namely, access, management, social interaction with other users, nonrecreational resource uses, acceptability of impacts from visitor use, and acceptable levels of control of users.

The ROS has proven attractive to managers of recreational resources because it has a high degree of flexibility in the ways in which recreational opportunities can be supplied by integrating the setting with visitor priorities and preferences. By incorporating the spectrum concept into area management plans, specific sensitive areas can be identified and protected. Other settings more capable of withstanding heavier levels of use can then be earmarked for more intensive forms of recreation. The ROS concept works well for establishing management objectives in natural and wilderness areas, but it does require considerable information on visitor preferences, experience, and expectations. Normally, these can only be obtained through user surveys. Like most frameworks of this type, it does not provide information on benefits that accrue to users, and because of its inclusion of user preferences, etc., it tends to favor the majority of potential users in terms of the management approach.

A variation of the ROS concept, the Tourism Opportunity Spectrum (TOS) (Fig. 3), was developed by Butler and Waldbrook (1991). It was created in an attempt to adapt the ROS idea to tourism and, in particular, to tourism in the Canadian Arctic, an area that has some similarities with northern Ontario. Developed from the ROS, the Tourism Opportunity Spectrum places the concept of the opportunity spectrum in the context of tourism rather than recreation. The purpose of the TOS was to provide the background and setting in which tourism development and change would occur. The TOS incorporates six elements or attributes: namely, access, other uses, the tourism plant (facilities), social interaction (between hosts and guests, and between guests), the acceptability of visitor impacts, and the acceptability of regimentation or control. The nature of the tourism experience is the dependent variable.

Key to application of the TOS is the issue of responsibility for overseeing and controlling the rate and amount of development in the area under examination. The purpose of the TOS and similar concepts is to provide a context and framework on which information and data, with respect to the kind of activities to be allowed or prohibited and the kind of facilities to be developed, can be examined prior to decision making. The availability of accurate and up-to-date data is of crucial importance to the successful application of such concepts and frameworks.

Management Frameworks

In both of these spectrum frameworks the emphasis is upon opportunities for recreation and tourism. It is also important to consider the effects of visitor use on the resource base, and attempts to manage both the resource base and the visitor. Given the accepted dissatisfaction with the concept of carrying capacity, one attempt to solve some of the problems of identifying a limit to visitor use

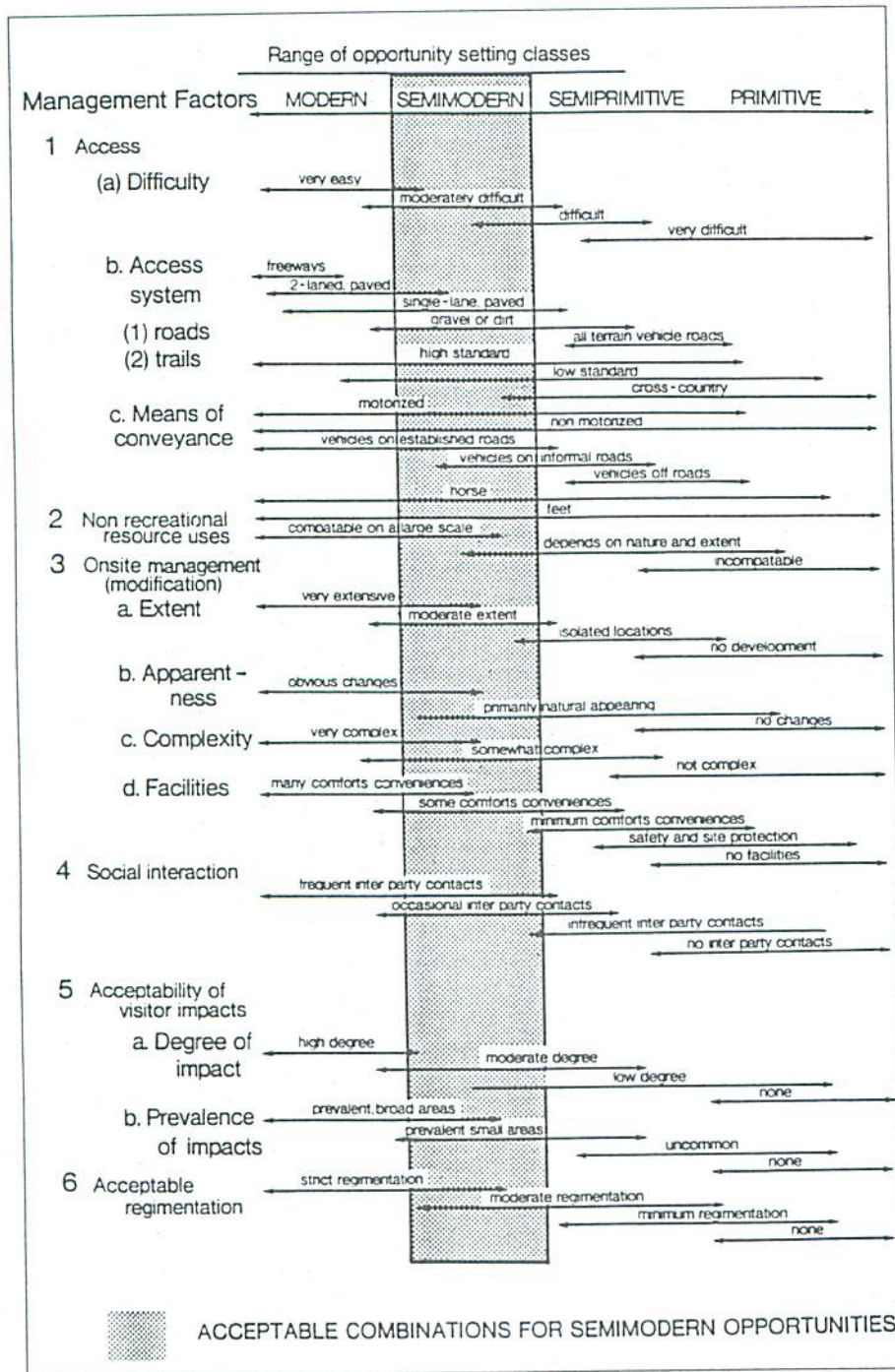


Figure 2. Factors defining outdoor recreation opportunity settings. Source: Clark and Stankey (1979).

was the Limits of Acceptable Change (LAC) approach, proposed by Stankey et al. (1985) (Fig. 4). In brief, this concept accepted that the solution to the issues of carrying capacity were likely to have to be made by resource managers, and that a process for identifying acceptable levels of use was required. The approach is prescriptive rather than reactive, and relies on management techniques and actions to attain predetermined, appropriate, and

acceptable resource conditions. It incorporates four key components: namely, the identification of desired resource conditions and social preferences, a comparison of existing conditions with these desired conditions, selection of management actions needed to move from existing to desired conditions, and evaluation and monitoring of the subsequent actions and use. These key steps take place in the context of a nine step planning process. The LAC concept places the emphasis on positive planning and management preempting inappropriate or overuse, and thus avoids the need for remedial or after the fact management actions. However, it places considerable responsibility on managers, and there is no guarantee that managerial values and decisions will be in line with user preferences, particularly as both of these elements are dynamic.

Two other management concepts that may have some relevance to ecotourism areas if, and when, development and use takes place are the Visitor Activity Management Process (VAMP) (Graham et al. 1988) and the Visitor Impact Management Process (VIMP) (Loomis and Graefe 1992). The VAMP process (Fig. 5), developed by the Canadian Parks Service for use in Canada's national parks, and incorporated into the Natural Resources Management Planning Process, is aimed at producing manage-

ment decisions based on both ecological data and social information. In reality it is a generic planning model that incorporates objectives, terms of reference, analysis of data, options, recommendations, and implementation.

Its counterpart, the VIMP (Fig. 6), was developed for use within the United States National Park Service. Aimed at reducing or controlling the negative effects of use on parks areas, it focuses on identifying problems and unsuitable

		LEVEL OF ADVENTURE	
		HARD	MEDIUM
1. ACCESS			
(a) Difficulty		very difficult	difficult
			moderately difficult
			very easy
(b) Access System		rivers, game trails	aircraft
Transportation			road (gravel)
			road paved
Marketplace		individual	retailers
			wholesalers
(c) Means of Conveyance		foot/canoe/kayak	motorized vehicles
Transportation			word of mouth
Information Channels		social sources advisory	commercial
2. OTHER NON-ADVENTURE USES			
		incompatible	depends on nature and extent
			compatible on a larger scale
3. TOURISM PLANT			
(a) Extent		no development	isolated locations
			moderate extent
			very extensive
(b) Visibility		none	primarily natural appearing
			obvious changes
(c) Complexity		not complex	somewhat complex
(d) Facilities		no facilities	safety (police, radios) and limited access
			minimum comforts and conveniences
			some comforts
			many comforts
4. SOCIAL INTERACTION			
(a) Hosts/Guests		little contact	authentic experiences
			some interpretation for tourists
			interpretation and handicrafts for tourists
			extensive handicrafts and events solely for tourists
(b) Guests		no interparty contacts	infrequent interparty contacts
			occasional interparty contacts
			frequent interparty contacts
5. ACCEPTABILITY OF VISITOR IMPACTS			
(a) Degree of Impact		none	low degree
			moderate degree
			high degree
(b) Prevalence of Impact		none	uncommon
			prevalent, small areas
			prevalent
6. ACCEPTABILITY OF REGIMENTATION			
		none	minimum regimentation
			moderate regimentation
			strict regimentation

Figure 3. Tourism Opportunity Spectrum: adventure travel. Source: Butler and Waldbrook (1991).

conditions, likely causal factors resulting in undesired impacts, and management strategies for mitigating or preventing the unacceptable effects of use. It has proved reasonably effective as a management strategy where a system of control, data collection and analysis, and management is in place.

Given that areas identified by the GIS process as having potential for ecotourism are not currently managed for this use, the selection of a management process is premature.

However, it was considered appropriate to briefly note several approaches to managing similar areas for related activities and to handling some of the impacts that can be anticipated. If and when development does occur, it will be necessary to ensure that some form of management process is in place if sustainability is to be achieved.

To provide a more specific conceptual approach geared to ecotourism, the following model has been developed.

DEVELOPMENT OF THE ECOTOURISM OPPORTUNITY SPECTRUM (ECOS)

At the outset it should be noted that the ideas proposed in this section are not profound, rather they build on existing ideas present within the tourism literature. Figure 7 illustrates eight factors viewed as important to ecotourism: (1) accessibility, (2) relationship between ecotourism and other resource uses, (3) attractions that a region offers, (4) presence of existing tourism infrastructure, (5) the level of skill and knowledge required, (6) the level of social interaction, (7) the degree of acceptance of impacts and control over the level of use, and (8) the type of management needed to ensure the viability of areas on a long-term basis. These eight factors are set against a spectrum of ecotourism opportunities that ranges from

the ecospecialists to the ecogeneralists, with an intermediate form of ecotourism found between these two extremes (Ferne 1993).

The possibility of a spectrum for ecotourism was explored earlier (Boyd and Butler 1993), and discussion of the dimensions of this spectrum are presented here to establish a context for the framework itself. The spectrum suggested by Ferne (1993), which is adopted for the ECOS framework, is very similar to the classification of

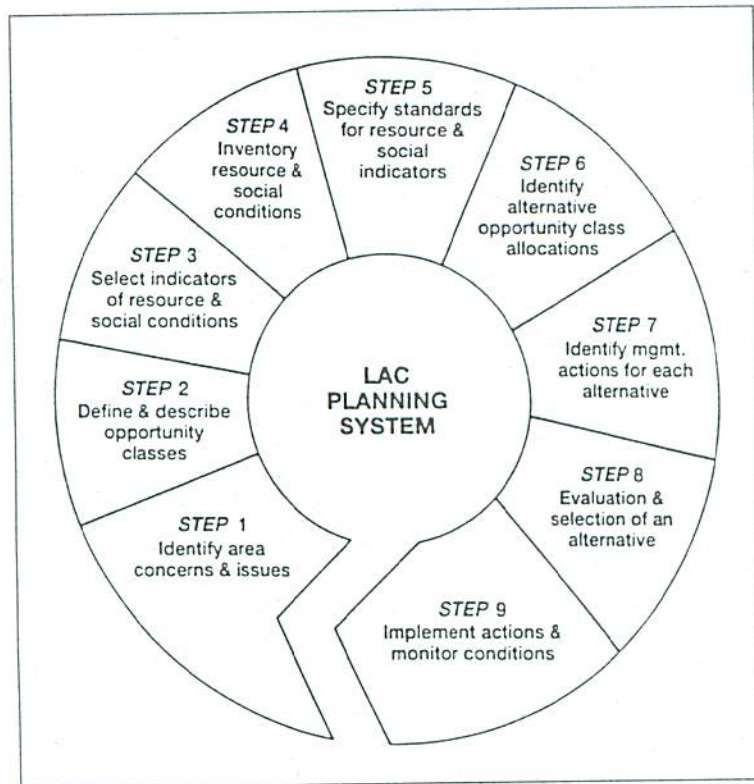


Figure 4. Limits of acceptable change. Source: Stankey et al. (1985).

hard and soft ecotourism by Wilson and Laarman (1988), Laarman and Perdue (1989), and Fennell and Eagles (1990). It was based on the interests of the tourist and the physical rigor of the experience itself.

According to Fernie (1993), ecospecialists may be perceived as those ecotourists who participate as individuals or in small groups, immersing themselves in the local natural and cultural environment, requiring minimal infrastructure, and generally having minimal environmental impact. They often have specialized knowledge and obtain a high skill level to participate in activities. In comparison, ecogeneralists are usually involved in larger groups, prefer a certain level of comfort, and require more tourism infrastructure. As a result, they tend to have a greater impact on the host culture. The intermediate form of ecotourism is similar to the mainstream nature type suggested by Ziffer (1989) in her typology of ecotourism, which ranged from a hard-core type to a casual-nature type of experience. An intermediate form of ecotourism is viewed as developing over time as visitor patterns are established, as an awareness is created for the destination area and the attractions it offers, as increasing numbers of ecotourists visit an area, and as a result of the highly personal nature of peoples' expectations and how they differ over time (Duffus and Dearden 1990, Eagles et al. 1992, Fernie 1993). For the most part, intermediate

ecotourists are viewed as traveling in small groups, but not as individuals. Also, they use basic forms of transportation, utilize local infrastructure and services, and rely on prearranged facilities and tour services.

Access

Access within the ECOS framework includes the level of difficulty in traveling to an area, the nature of the access system in place, the type of transportation used to travel to and within areas, and the channels of information available to promote ecotourism within regions. In terms of difficulty, this may range across the ecotourism spectrum from left to right with access classed as being arduous and hard for the ecospecialists, difficult and vigorous for the intermediate type, and moderate and easy for the ecogeneralists. With respect to the characteristics of the access system in place, it is expected that most ecotourists would use some form of mechanized transportation (e.g., car, train, float plane) to reach an access point from which the ecotourism region may be entered. Some specialists may prefer to use nonmotorized means to reach access points, and travel along waterways or

trails from communities located in close proximity to possible access and egress points. Within an ecotourism area, it would be expected that the specialist would prefer to use natural routes either in terms of rivers or those created from the movement of wildlife. Generalists, on the other hand, may be viewed as preferring an access system comprised of both paved and gravel roads. The intermediate type, while accepting the existing road network, would be more willing to use trails created for specific purposes (e.g., snowmobiling), or to utilize networks of roads (e.g., logging roads) created by other resource-related industries present in the area.

The marketplace would also differ among ecotourists. The ecospecialist is perceived as preferring to travel alone, often gaining knowledge about the opportunities an area affords based on personal experience or on information obtained from friends that have previously visited the region. In contrast, the ecogeneralist prefers to travel as part of an organized tour set up by travel companies and local travel agencies that specialize in catering to ecotourism. As a result the market is much more diverse, but not as general as that perceived for mass tourism. The intermediate form of ecotourism may be developed from the marketplace created by local tourism operators who own camps and outposts within the ecotourism destination area

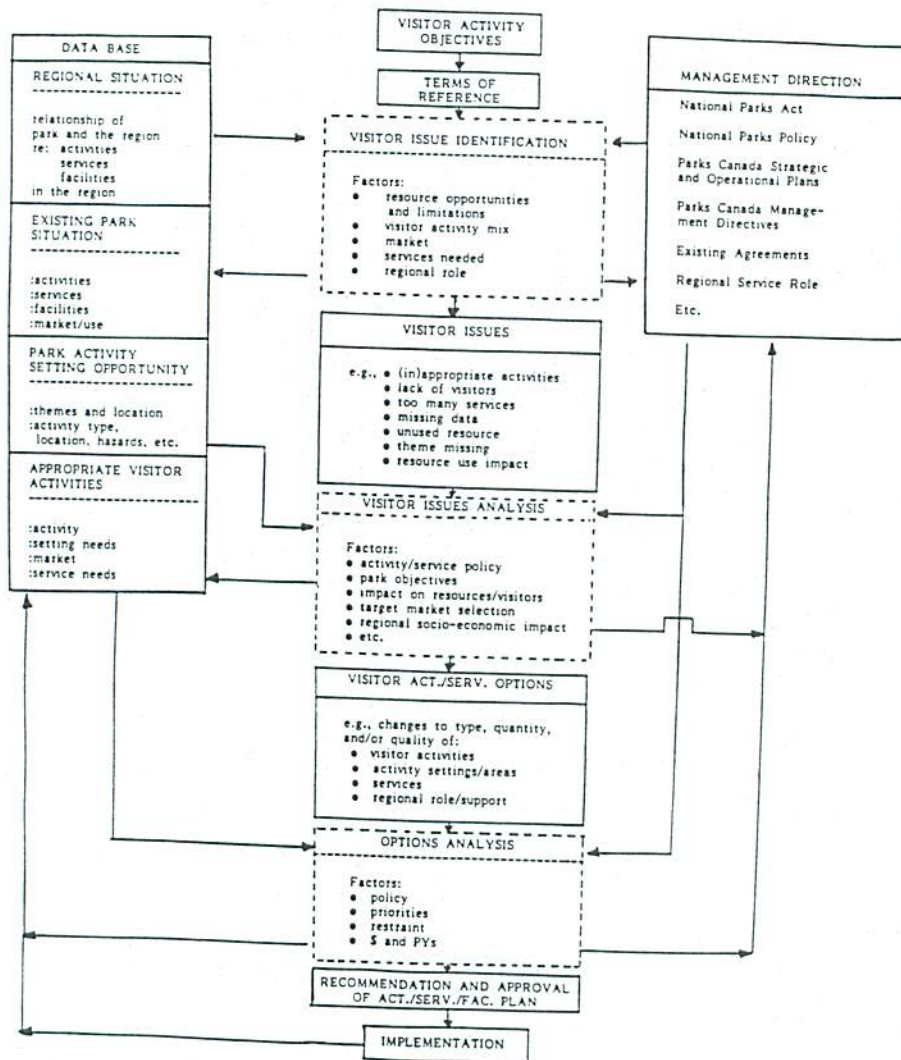


Figure 5. Visitor Activities Management Planning. Source: Graham et al. (1988).

and who provide guides that accompany tours. The channel of information used here may vary from word of mouth of people who have visited a camp or outpost that offers this experience to tourism brochures that describe the facilities and operations available within the ecotourism destination area.

The last aspect of access involves the means of conveyance used. It is expected that the ecospecialist would prefer nonmechanized forms of transportation, and use canoes or foot travel to limit impact on the environment. Motorized forms of transportation would be the preference for the remaining types of ecotourists; however, the use of motorized forms of transportation might be reduced as one moves closer to the left of the ecotourism spectrum.

Other Resource-related Activities

Butler (1992, p. 224) stated that in the context of the integration of resource uses, complementarity was the highest goal, implying that, "each use or activity is not only not in conflict or competition with the others, but by their presence and interaction add something to each other." A position of compromise may be viewed where compatibility exists between users; neither use or activity detracts from or harms the other. The problem of ensuring compatibility between uses is compounded by the fact that "the relationships between different uses may be extremely dynamic and subject to sudden and significant change" (Butler 1992, p. 226). At the opposite end of a spectrum of integration is the condition of competitiveness where incompatibility exists (the situation in which two or more uses or activities cannot exist in the same area at the same time using the same resource).

The degree to which ecotourists should be compatible with other resource users and other tourism users in general was an important part of the definition adopted for ecotourism within the overall project. With this in mind, the presence of other resource users, and their relationship with ecotourism, is an important factor within the ECOS framework. Because of the presence of other resource-related activities within the region, it is unlikely that a position of complementarity could be reached. At best, compatibility is a possible goal, but one that would be dependent on the nature and extent of ecotourism promoted within the region. Levels of compatibility would be less for ecospecialists as they are often perceived to avoid other uses and to be less accepting of other activities in the area, especially if the nature of those activities may detract from the overall experience being sought. The presence of forest-related or mining

STEPS IN PROCESS

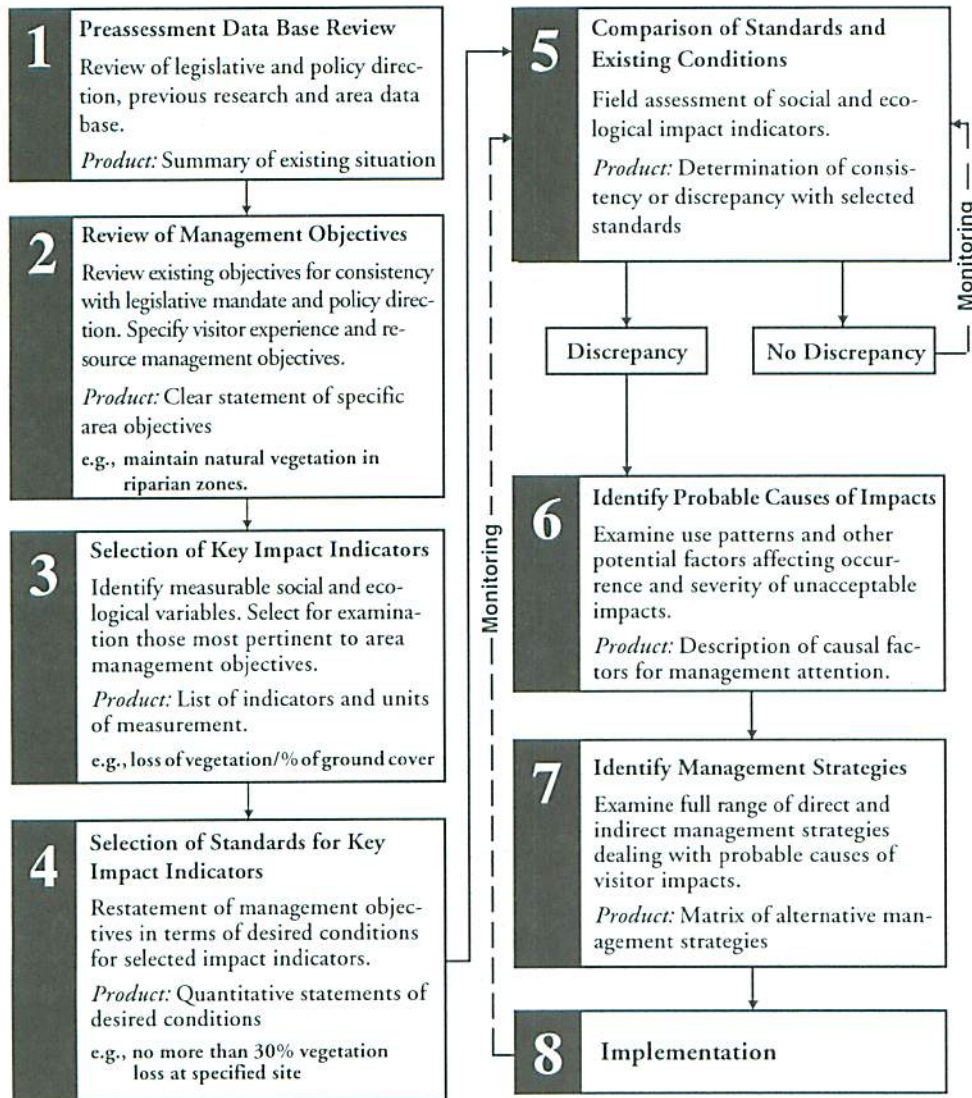


Figure 6. Steps in the Visitor Impact Monitoring Process. Source: Loomis and Graefe (1992).

activities would certainly impact on their ecotourism experience. Thus, such activities should be avoided within a region. In contrast, the ecogeneralist perception of ecotourism may be one where the level of compatibility between uses is much more noticeable, but probably only at a larger scale, as specific ecotourism activities and experiences may conflict with other resource-related uses within certain areas of the ecotourism destination region.

Attractions Offered

This represents the first departure from the factors developed in the ROS and TOS frameworks. When talking

about attractions, what is meant are the types of experience an area may offer given the characteristics of the setting. The inclusion of attractions within the ECOS framework was considered to be very important because the experiences themselves, often the end product for the ecotourist, set this form of tourism apart.

Fernie (1993) explored how the type of previous ecotourism experiences influenced the visitor perception. She concluded that an ecotourist more oriented to the natural environment may not perceive cultural-urban settings as being important or appropriate for ecotourism, and that the type of past ecotourism experiences may also influence perceptions of specific settings as acceptable destinations. In terms of the ecotourism spectrum, the ecospecialist may be perceived to be more oriented to the natural environment, focusing more on exploring,

viewing, and admiring the vegetation cover and diversity of wildlife, and paying less attention to the cultural and urban aspects found within the region. In contrast, the ecogeneralist may prefer attractions that focus on the cultural and urban aspects over the natural environment, because they have a greater impact on the host population of the ecotourism region. It should be pointed out, however, that the attraction of viewing the natural environment is something of interest to many ecogeneralists. For example, the experience taken away from the visit may be the chance to view wildlife seldom visible elsewhere.

Ecotourism spectrum		Ecospécialist.....Intermediate.....Ecogeneralist
ACCESS		
(i) Difficulty	arduous and hard.....difficult and vigorous.....moderate and easy.....
(ii) Access system	Transportation	waterways, trails.....aircraft (float planes).....roads (loose surface).....roads (logging).....roads (paved).....
	Marketplace	personal experience..... friends..... local tourism..... operators (camps and outposts)..... travel companies.....
(iii) Means of conveyance	Transportation	foot, canoes, horses..... motorized vehicles.....
	Information channels	word of mouth..... advertisements (local tourism brochures).....travel company tours.....
OTHER RESOURCE-RELATED ACTIVITIES		
(i) Relationship	incompatible.....depends on nature and extent.....compatible on a larger scale.....
ATTRACTIONS OFFERED		
		more oriented to natural environment..... focus on cultural and urban aspects.....
EXISTING INFRASTRUCTURE		
(i) Extent	no development development only in isolated areas.....moderate development.....
(ii) Visibility	none.....primarily natural.....obvious changes.....
(iii) Complexity	not complex.....	level of complexity increasing.....
(iv) Facilities	none.....	search and rescue..... rustic accommodation (camps and outposts)..... some comforts..... (lodges).....many comforts (hotels and cottages).....
SOCIAL INTERACTION		
(i) Other ecotourists	avoid or little contact.....	some contact..... (travel in small groups)..... frequent contact..... (travel in large groups).....
(ii) Hosts (local population)	little contact.....	some interpretation and use of basic services..... frequent contact..... services and source for handicrafts.....
LEVEL OF SKILL AND KNOWLEDGE		
	professional and extensive.....	extensive to limited..... minimal to no knowledge.....
ACCEPTANCE OF VISITOR IMPACTS		
(i) Degree of impact	none.....low to moderate.....high degree.....
(ii) Prevalence of impact	minimal or uncommon.....	prevalent in small areas..... prevalent.....
(iii) Level of control	no control.....	minimum control..... moderate to strict control.....

Figure 7. Ecotourism Opportunity Spectrum. Modified after TOS framework (Butler and Waldbrook 1991).

Existing Infrastructure

Infrastructure refers to what the TOS labels as tourism plant. Within the context of ecotourism, the type of tourism plant differs markedly from that found in other

tourism areas, which centers on the provision of accommodation, shopping, and entertainment facilities. Existing infrastructure is used to replace tourism plant as emphasis is primarily on the provision of suitable accommodation for ecotourists, along with the need to provide some on-site modification of existing infrastructure to conform to what is viewed as acceptable by the ecotourists themselves. Modifications of existing infrastructure will vary in terms of extent, visibility, complexity, and the number of facilities involved.

In terms of extent, the ecospécialist would not wish to see any development or accept that any should be considered in the future. In comparison, ecogeneralists may prefer moderate development that suits their needs. Those in an intermediate position may prefer that development only occurs in isolated areas, but will accept the moderate developments that may result. As for visibility, a range of none to obvious changes may result as one moves from left to right across the ecotourism spectrum. This aspect of complexity may result in the ecospécialist preferring that which is not complex; the level of complexity will increase for both the intermediate type and the ecogeneralist. With respect to facilities, most ecospécialists would prefer that none be available, while the intermediate type may accept rustic accommodations (e.g., camp cabins, outpost huts) along with specific services (e.g., contact with search and rescue operations, modification and creation of new trails). In contrast, the

ecogeneralist may be perceived as seeking a certain level of comfort and convenience. For example, the ecogeneralist may be that type of tourist who wishes to retire to the comforts of a well-furnished hotel or cottage, with all its

modern conveniences. Cabins and facilities offered by northern Ontario tourism operators often range from the primitive basics to the deluxe situation.

Social Interaction

Over the past few decades a substantial amount of research has focused on tourist interaction, particularly between the host (local population) and guests (other tourists) (Smith 1987). The extent to which tourists interact with other tourists and the local or host population has important implications for the opportunities an area may offer, because it brings into play the impact of experiential or social carrying capacity and how this influences the level of satisfaction of the tourists. In recent years, but predominantly for recreational activities, the level of satisfaction, which may also be taken as a measure of the level of interaction willing to be accepted, has been expressed using norms. Social interaction beyond norms or encounter levels (i.e., social interaction) may result in altering the experience being promoted within a region and therefore, in turn, impacts on the opportunities that region may present to its tourists.

Much of the research undertaken on norms has been focused either on water-based recreation or on recreational activities undertaken within backcountry, wilderness-type settings (Table 1). While much of this work has been the focus of researchers within recreation rather than tourism, these types of activities may also be considered as suitable for an ecotourism destination region, and the use of norms may offer a new approach to indicate the level of social interaction that would be acceptable.

In terms of interacting with other ecotourists, it is probable to assume that the level of contact would increase as one moves from

left to right across the spectrum. Ecospecialists would avoid contact with other ecotourists, focus on their desire to explore the natural environment, and view the wildlife present in a state of isolation to others. In contrast, the intermediate type of ecotourist would find themselves in contact with others because they would be traveling in a group, which may or may not be organized and that may

Table 1. Experimental norms for river recreation and backcountry experiences. Source: Butler et al. (1992).

Activities	Encounter levels for different setting*			
	General	Wilderness	Semiwilderness	Undefined recreation
Canoeing				
tubers	0-2.3			
canoers	0-5.7			
fishermen	0-7.2			
Fishing				
floaters	0-6.5			
boaters	0-5			
fishermen	0-25			
anglers				
bank anglers	0-13			
all river users	2->50			
Floating				
floaters	0-4	1.5	3.0	2.5
jet boaters	0-10	1.5		
all river users		0-4	0-5	0-10
Rafting				
all river users	0-25			
Boating				
boaters	11			
commercial users	4-10			
private users	5-25			
General				
boaters		1-2.3 10	2-4.5 25	2-7.5 50
Jet boating				
floaters	0-100	4.4		
Wilderness visiting				
canoers	3.5			
motor boaters	0			
backpackers	3-9.5			
horseback parties	1.8-5			
campers	1-3			

* Encounter norms listed are based on case studies within academic literature on experiential norms.

include or exclude the use of a guide. It would probably be fair to state that the size of groups would be small, as too many people could detract from the overall level of satisfaction gained from the trip. In contrast, the ecogeneralist would traverse a region as part of a large, organized party employing an experienced guide, and would probably accept the presence of other tourists or even other organized groups. Their overall experience, even though it might represent a small part of their vacation, could be affected if they considered certain designated viewing spots as overused and crowded, or if the level of use present was impacting on the natural environment and modifying the authenticity (as perceived by them) of the experience itself.

The extent to which ecotourists would use the services and facilities present in a region determines how much interaction will occur between guest and host. Also, the type of experience itself, whether the interest is primarily in the natural environment or the cultural heritage of the area, will influence the extent to which interaction will occur and the level at which it remains acceptable. The ecospecialists, because of their knowledge of the area, skill of coping within the setting, and not requiring the use of local people as guides, will probably experience little contact. Rather, they will use the local community as a base from which to begin the trip. In contrast, the ecogeneralist, because many of the community services are used by the organizations that planned the overall trip, will find themselves in frequent contact with the locals. This will be especially true if the local communities are used for overnight accommodation or as a source for acquiring handicrafts unique (or seen as unique) to the area. It is difficult to judge the nature of interaction for the intermediate group. Levels of contact may be higher than noted for the ecospecialist because of the desire for adequate services and facilities, but the nature of the experience sought will be influenced if a high degree of interaction with the host population is something they desire or are willing to accept.

Level of Skill and Knowledge

The level of skill and prior knowledge, briefly introduced in the last section, have implications for the opportunities that areas may offer and the type of experiences that may be realized from them. Given the low level of interaction desired, the type of knowledge acquired prior to a trip about a region, and their ability to survive by themselves with limited contact, the skill and knowledge level of ecospecialists may be viewed as extensive, or even professional. This is further acknowledged by the fact that they may often engage in trips of long duration (greater than 1 week). The knowledge and skill level of the intermediate group may be judged to range from limited to extensive—

depending on trip duration, their prior knowledge about the region, and whether or not they will be accompanied by a guide. In comparison, ecogeneralists will probably have minimal to no knowledge or skill level. Their experience consists of a shorter duration (weekend or day trips) in which they travel in an organized party and follow a specific itinerary, where accommodation (if needed) is provided and a guide is present to offer interpretation.

Acceptance of Visitor Impacts

This factor involves the degree of impact, the prevalence of impact, and the need for control to be exercised over impacts that occur. As numbers of users increase in moving across the ecotourism spectrum from left to right, it is fair to assume that the degree of impact will also increase. However, it should also be noted that ecospecialists may have a greater impact than initially thought as they invade areas that are not easily reached and that may be highly sensitive to human intrusion. In terms of prevalence, impacts by ecospecialists may be minimal or uncommon and are recognized only in some isolated areas. In contrast, the incremental impacts of larger numbers of ecogeneralists will probably be confined to specific trails and viewing areas that are heavily used. Imports will not be evident away from these areas as the majority of this group will keep to the trails and pathways used by other ecotourists and their guide.

When level of control over the impacts is concerned, it is feasible to assume that the ecospecialist leaves a limited but negligible impact on the environment, and no control is needed. At the same time, this group is unwilling to accept the impacts generated by other users, including tourists, and as a result may seek out new experiences and opportunities in areas not yet considered as ecotourism destinations. In comparison, ecogeneralists may be aware of the impacts occurring from ecotourism in the region, be sympathetic to them, and thus be willing to accept moderate to strict control over the number of groups permitted, their size, and allowable activities. The intermediate type of ecotourism may involve an approach that falls between these two extremes.

Acceptance for a Management Regime

Butler and Waldbrook (1991), in creating the TOS framework, alluded to problems in attempting to control tourism development and in identifying responsibilities for this control. The same comment applies in the case of ecotourism. Successful ecotourism development requires that the product (opportunity and experience) can be maintained over the long term so as to ensure the viability of the resource base on which it is founded. Many of the factors within the ECOS framework can be controlled through management. As noted in an earlier section, implementing

a system of control requires the involvement of existing agencies or the possible development of a new agency. The authors are aware of the need for some type of agency to be created, or modified from existing ones, if any of the potential ecotourism units are developed in the future. Specifics on what type of agency should be involved, its structure, and level of responsibility are open to much debate. The stakeholders involved with ecotourism and the various groups that may be involved in the overall decision-making process within a northern Ontario setting were discussed by Boyd and Butler (1994). At this point in time, the authors are of the opinion that responsibility for how the ECOS framework may be implemented in the future is not within the mandate of this study. However, they do point out that the VIMP and VAMP frameworks offer useful ideas in terms of how the areas may be managed.

APPLICATION OF ASPECTS OF THE ECOS FRAMEWORK TO ECOTOURISM AREAS IN NORTHERN ONTARIO

At the outset of this section, it is important to point out that since the areas have not yet been developed (Figs. 8 and 9),

and because they were identified based only on their potential for ecotourism, a number of the factors within the ECOS framework cannot be applied. As a result, only the first four factors in the framework are examined within the northern Ontario context. The remaining factors, with the possible exception of the last one, require input from ecotourists in the areas themselves, and this goes beyond the objectives and goals of the current project. Access, other resource-related activities, attractions offered, and existing infrastructure in place to promote ecotourism are examined, based on information collated from travel through the region and from discussions with various government agencies. However, owing to the paucity of data on these four factors, discussion is presented for all Type I ecotourism regions combined. Type II regions are subdivided into those found in the western (Units 1–3), central (Units 4–10), and eastern portion (Units 11–12) of the study area.

Access

Type I Ecotourism Units

All four Type I areas are difficult to reach, and the absence of any roads within these units would suggest that access

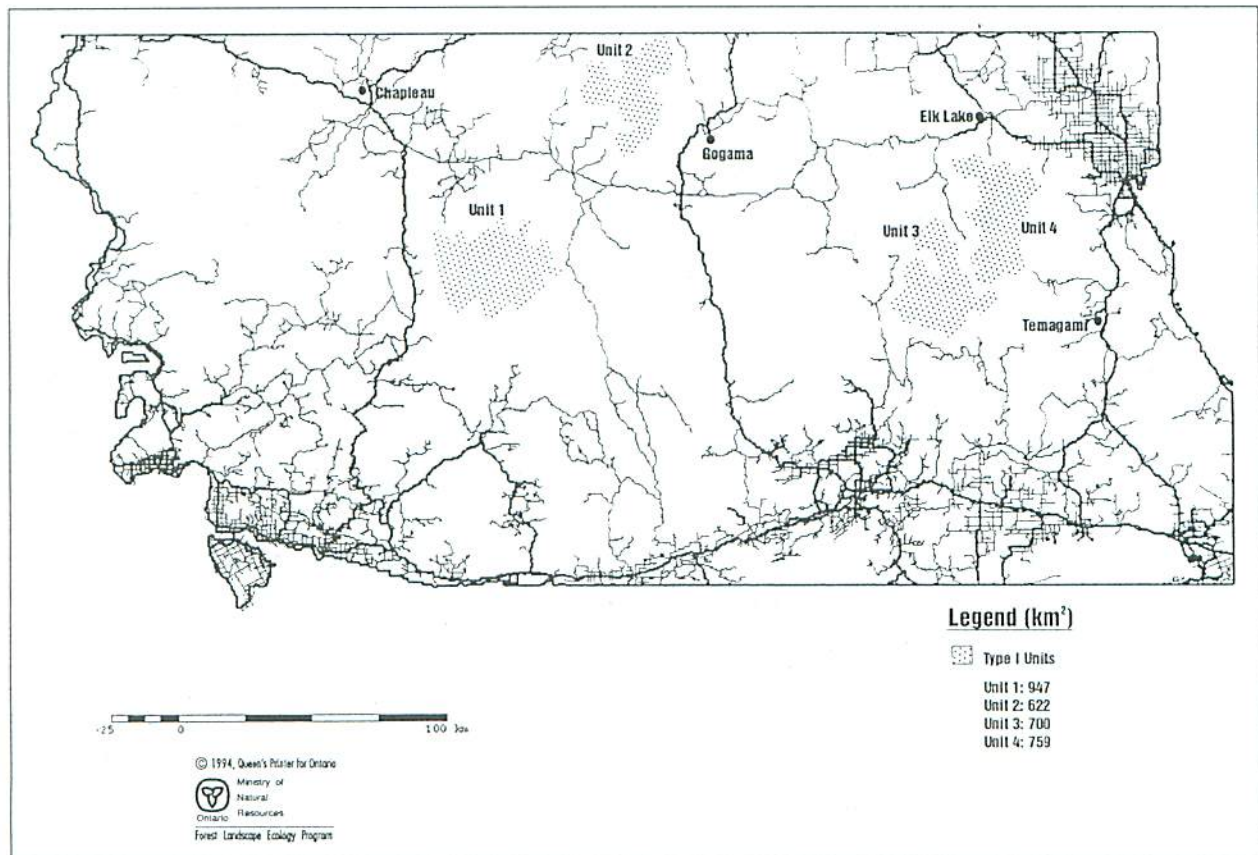


Figure 8. Type I Ecotourism Units. Source: Boyd et al. (1994).

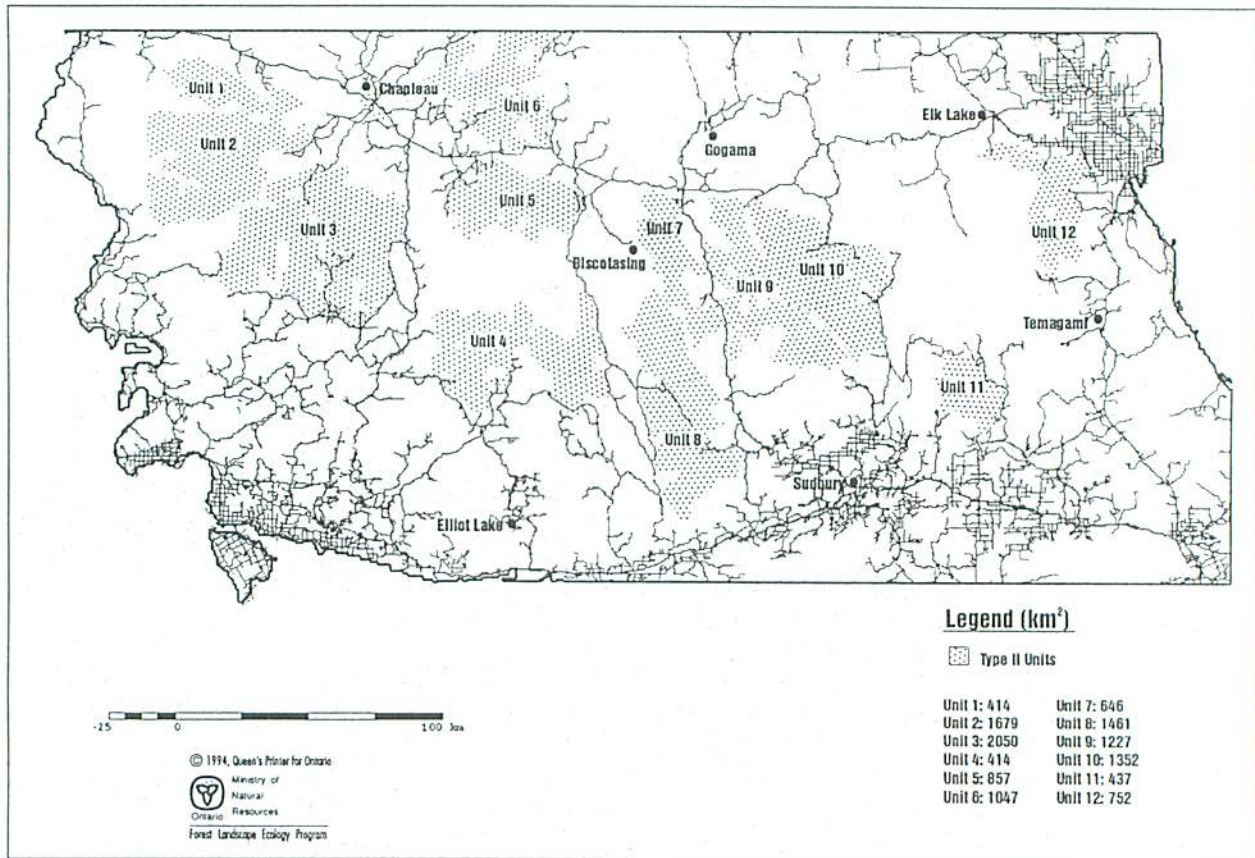


Figure 9. Type II Ecotourism Units. Source: Boyd et al. (1994).

be classed as arduous to hard; however, the fact that there are logging and loosely paved roads close to the boundaries of all units (within 1 to 5 km) would infer that a classification of difficult and vigorous be assigned to them. As for the access system in place, paved or logging roads could be used to get close to the units, after which the ecotourist would be expected to continue by foot. Absence of knowledge on the extent and presence of trails within the units will impact on how appropriate travel by foot would be. The fact that a number of rivers cross the units (the Wenebagon River for Unit 1, the Groundhog River for Unit 2, the Makobe-Gray River for Unit 3, and a tributary of the Sturgeon River for Unit 4) offers an alternative transportation network into and through part of these ecotourism units. The presence of numerous lakes, connected by a myriad of channels feeding off the major rivers, provides an extensive means for water travel through these units. Some of these lakes are large enough to show up as remotely sensed images. Because of their large size they would require long periods of time to traverse by canoe or kayak and could be less appealing to visitors. In addition, a number of these are reservoir lakes and not amenable to ecotourism. The location of a number of fly-in services on Highway 129, to the west of Unit 1 and within the communities of Chapleau, Gogama, and

Gowganda, offers a means for dropping off people and their canoes on designated lakes within the units. For those areas of Units 3 and 4 that fall within the boundaries of the Lady Evelyn–Smoothwater Wilderness Provincial Park, fly-in service is permitted only to the edge of the park. This ruling may have major implications with respect to accessing these units by air, but it has been put in place in an effort to ensure that the area remains a wilderness park. The presence of snowmobiling trails offers an alternative route to traverse part of the these two units.

Type II Ecotourism Units

The same comments made about difficulty of access for Type I units apply for all 12 Type II units as no roads are present within their boundaries. However, in the western region, Units 1 and 3 have a major paved road close to an edge (Highway 101 and Highway 129, respectively). Units 6, 7, and 9 in the central portion and Unit 12 in the eastern part of the study area also have paved roads nearby. Thus, access has been classed between vigorous and moderate.

In terms of the present access system, paved or loosely paved roads, together with the myriad of logging roads located in close proximity to all Type II units, may be used

to reach the edge of these units. Rivers like the Montreal, Agawa, Anjigami, and Batchawana could be used to travel into the western units (Unit 1–3). The road developed beneath the powerline that runs from Aubrey Falls (at the edge of Unit 4) to Wawa, and intersects the western Type II ecotourism areas, may be traveled during the summer months in a 4 x 4 vehicle or via snowmobiles in winter. The presence of a fly-in operation close to Unit 2 offers another means to reach not only this unit but the two others in the western portion of the study region.

As for Type II areas found in the central portion of the study region, Units 7 and 8, and Units 9 and 10 are dissected by the Canadian Pacific and Canadian National railways, respectively. Discussion with local Ontario Ministry of Natural Resources personnel revealed that these lines are frequently used, and that people are often dropped off along the line or at designated spots from which they can proceed by foot or portage with a canoe. The presence of these two rail lines also means that access/egress to units is not confined to specific points, but rather is available through these linear corridors. A myriad of lakes and connecting waterways can be found within the Type II units in the central portion of the region. These may be accessed through a number of major rivers, such as the Missisagi (Unit 4), Wenebagon and Kebskwasheshi rivers (Unit 5), Ivanhoe and Nemegosenda rivers (Unit 6), Spanish River (Units 7 and 8), Vermilion River (Unit 9), and the Wanapitei River (Unit 10). Fly-in services at Biscotasing, Gogama, and Gowganda may be used as an alternative mode of transportation to enter these ecotourism units.

In the western portion of the study region, Unit 11 is accessible via the lower stretch of the Sturgeon River and its tributaries, particularly those connecting to the Maskinonge–Matagamasi–Kukagami lakes system located within the unit. This system connects with Wanapitei Lake, a substantially larger lake found to the southwestern part of the unit. Parts of Unit 12 can be traversed via the Montreal River, portions of the Lady Evelyn Lake, and other lakes that are linked to it. The communities of Elk Lake and Latchford provide a base from which fly-in services to Unit 12 could be accommodated.

No specific comments can be made at this time about the marketplace and the types of information channels as they apply to both Type I and II areas, other than to point out that many sources of information are available to those wishing to travel through these areas. At the general level they include vacation guides for camping, fishing, and hunting as produced by the Ontario Ministry of Culture, Tourism and Recreation. More detailed travel information is provided by the regional travel associations within northern Ontario, by the Northern Ontario Tourist

Outfitters Association (NOTO) vacation guide, and by the various provincial parks located within the study region. Information on the condition of roads and detailed topographical maps at a scale of 1:50,000 are only two of the many services offered by the local Ontario Ministry of Natural Resources offices in the Northeast Region (Chapleau, Gogama, and Kirkland Lake) and the Central Region (North Bay, Sault Ste. Marie, and Sudbury).

Other Resource-related Activities

Recreational activities undertaken within protected areas, such as provincial parks, are often highly compatible and even complementary with activities pursued by ecotourists. Thus, for the most part, provincial parks offer a suitable setting for ecotourism. In contrast, resource-related activities that have an industry focus are often viewed as incompatible with ecotourism. Forestry-related activities may be acceptable, however, if selective cutting is practiced in areas that have potential for ecotourism, and if clear-cutting is avoided. Mining activities are incompatible with ecotourism because of associated noise and obnoxious odors, and because of the physical impact on the landscape itself from an aesthetics perspective.

Type I Ecotourism Units

With respect to protected areas, a small section of the Missisagi River Waterway Provincial Park is found in the eastern portion of Unit 1. Much of the Lady Evelyn–Smoothwater Wilderness Park is found within Unit 4. Only a small portion of the park is in Unit 3. From discussions held in the summer of 1994 with the park superintendent responsible for Finlayson Point Provincial Park and the Lady Evelyn–Smoothwater Wilderness Park, the level of use within these parks and the waterway parks connected to it (Sturgeon River, Obabika River, and Wakimika River) is already high. Sightings of over 300 different parties (boaters and canoers, combined) in 1 day would suggest that physical and experiential capacity levels have been reached, if not exceeded. With levels of use as high as this, it may be very difficult to formally promote the area for ecotourism and yet ensure that a wilderness setting is maintained.

An overlay of the Type I units on the cutover layer of the GIS showed that no timber harvesting was present within any of the units. However, extensive harvesting over the past decade has been undertaken to the south of Unit 1 and around the edge of Unit 2. This leads one to query if harvesting has moved within the boundaries of these units since the GIS was undertaken (spring 1994). On-site examination in the summer of 1994 showed that the logging road on the southern edge of Unit 1 was being used by logging companies, and that cutting was present in this area. Despite this last comment, for the majority of the

areas within Type I units there is an absence of conflict between timber harvesting and ecotourism. The extent to which this situation remains is dependent on future cutting. Later in 1994, at the annual NOTO convention, it was brought to the attention of the authors that extensive cutting has been conducted along the southern edge of Unit 1 and that cutting is present within Unit 2. As a result, compatibility between both activities will probably be determined on the basis of the nature and extent of this cutting.

As expected, there are no mines in any of the Type I units; the closest is some 15 kilometers to the north and west of Unit 4. As a result, the issue of compatibility or complementarity does not need to be raised.

Type II Ecotourism Units

A number of protected areas (provincial parks) are found within some of the Type II units. The southern portions of the Missisagi River and Wakami Lake recreation provincial parks are found within Units 4 and 5, respectively. Halfway Lake and Kap-Kig-Iwan natural environment provincial parks are located in Units 8 and 12, respectively. Given that the types of activities undertaken in these areas would be similar to those anticipated in the ecotourism units, the relationship would be one of compatibility.

With respect to forestry-related activities, the same comments noted for Type I units apply here. Timber harvesting is not present within the majority of the units. Some recent cutting (in the past decade) was noted in the southern portion of Units 1 and 3, with older cuts (30–40 years ago) in parts of Units 5, 8, and 9. The absence of competition over the same resource base would suggest that both activities are compatible. Cutting that has recently taken place in the southern portion of Unit 3 raises a question as to whether this relationship will remain the same.

The authors are aware of an environmental assessment recently completed on a timber management plan within a part of Unit 3. The failure to prevent timber companies from cutting, particularly in the Megisan Lake area, may affect the relationship between future ecotourism development and timber harvesting, especially given the region's potential for ecotourism.

Overlay of the mining activity layer of the GIS with the Type II ecotourism units revealed no mines present. In addition to this, the 15-km buffer placed around mines only represents the southern edge of Units 8 to 11, and the northern edge of Unit 12. As such, the relationship between mining and ecotourism is the same as stated for Type I units; namely, there is an absence of conflict.

Attractions Offered

Attractions may be defined as: first, the natural environment itself, in terms of the type of forest cover and wildlife potential; and second, those activities that may be offered within the natural setting, or those of a more cultural–urban nature offered in the nearby communities.

Type I Ecotourism Units

All four units were found to have a vegetation cover dominated by a mixed forest type (>50% coniferous and >10% white pine [*Pinus strobus* L.] and red pine [*P. resinosa* Ait.]), including dense coniferous forest (>80% jack pine [*Pinus banksiana* Lamb.] and black spruce [*Picea mariana* (Mill.) B.S.P.]), a combination that has an aesthetic appeal. The presence of many bodies of water, a moderate potential for wildlife, and some change in relief within units (200-meter change [Units 1 and 2], 300-meter change [Unit 3], and 400-meter change [Unit 4]) combine to provide a setting that is both diverse and aesthetically pleasing. Given the myriad of water bodies within the units, it would be expected that the majority of visitor activities would be waterbased (e.g., canoeing, kayaking). In place are a number of canoe routes on the Wenebagon River (Unit 1), the Groundhog and Wakami rivers (Unit 2), the Sturgeon and Obakika rivers (Unit 3), and the Wakimika River (Unit 4).

With regard to attractions that have a cultural–urban focus, communities to the north and east of Unit 4 offer a mix of interests. A small mining museum in Gowganda houses numerous artifacts from the early years of silver mines in the region, as well as a history of the community itself. Tours are offered in the local mill in Elk Lake, and a heritage tour can be enjoyed on the nearby Montreal River.

Type II Ecotourism Units

These units contain a mix of vegetation types, numerous water bodies, some change (100–200 meter rise or fall) in relief, and moderate to low wildlife potential. Although probably not as interesting as Type I areas, the natural environment offered in these areas should still be seen as an attraction to ecotourists. As for recreational activities, canoe routes have been established on the Aubinadong River (Unit 3), the Ivanhoe River (Unit 6), the Wakami River (Unit 5), and the Missisagi River (Unit 4). Another attraction is the Algoma Canyon, located in Unit 2 and accessible via the Algoma Central Railway.

Few details are known regarding cultural–urban attractions. An Indian reserve is located on the southern edge of Unit 6, but as pointed out in an earlier report (Boyd and Butler 1993), it may be difficult to market it to ecotourists. A museum located in Chapleau may offer an attractive day trip for those traveling in the western ecotourism units.

Existing Infrastructure

This subsection focuses on the presence of communities that could act as service bases for travelers, and the extent of existing tourism operations (e.g., camps, lodges, outposts) that could cater to ecotourists traveling within the various units. At the time of this writing, the information base was still being updated. As a result, there is a lack of detailed information on units within the western portion of the study region. A more detailed account of existing operations will be presented in a later report. Thus, at this time, the number of known operations that can be used (modified) to cater to the ecotourist within each unit is simply stated.

Type I Ecotourism Units

In Unit 1 there are only five outpost operations and these are found toward the eastern edge. As for Unit 2, there appears to be no tourism operations within the area, but four lodge and two outpost operations do exist to the east of the unit. Information available to the authors indicated no tourist operators within Unit 3, and only one outpost operation in Unit 4. There are three more on the eastern edge. Overall, it would seem that if ecotourism was to be developed in these Type I areas, then more tourism operations may be needed within the units themselves.

The following communities exist as possible supply and service bases: Sultan (Unit 1), Gogama (Unit 2), Gowganda (Unit 3), and Elk Lake and Latchford (Unit 4).

Type II Ecotourism Units

An assessment of current tourism operations within these units was limited for the western part of the study area (Units 1–3) due to the lack of reliable data. This omission will be addressed with the update of tourism operations that is currently underway using Global Positioning Systems, and will be included in the final report. The authors are, however, aware of a number of lodges and one camp within Unit 3 on Megisan Lake and Ranger Lake.

In the western portion of the study area all units, with the exception of one (Unit 5), have tourism operations present. Unit 4 has two lodge operations, one camp, and six outpost operations. Unit 6 has only three outpost operations. Units 7 and 8 both have three lodge operations, with seven and 12 outpost camps, respectively. Unit 9 has mostly outpost camps (11 in total) with only one lodge operation. Unit 10, in the central portion of the study region, has four lodge operations, three camps, and five outpost camps.

In the two units (Units 11 and 12) in the eastern part of the study region, 20 lodges exist; ten in each unit with one outpost operation present in Unit 11. Overall, it may be concluded that the presence of a large tourism infrastructure

within Type II areas offers the base on which ecotourism could be heavily promoted.

The following communities exist as possible supply and service bases: Chapleau (Units 1–3 and Unit 6); Sultan (Units 5 and 6); Biscotasing (Units 7 and 8); Cartier (Unit 8); Westree (Units 9 and 10); River Valley (Unit 11); and Elk Lake, Kenabeek, New Liskeard, Cobalt, and Latchford (Unit 12).

Categorizing Units by Type of Ecotourism/ Ecotourist

Based on information provided on the application of the above four factors of the ECOS framework, the characteristics of Type I units would suggest that they are more suited to the ecospecialist, and offer a type of ecotourism experience that is oriented to the natural environment. In contrast, the fact that some Type II units (Units 4, 8, 11, and 12) are in relatively close proximity to a large urban center (within a 1-hour drive), it may be possible to offer day trips or short stopovers to these areas and thereby capture the ecogeneralist market. The remaining Type II areas are much more isolated and may be more suited to both the intermediate type and the ecospecialist. It should, however, be pointed out that these are broad generalizations; in reality the picture may be more complicated, with no clear understanding as to which areas are best suited to any one type of ecotourist.

DISCUSSION AND RECOMMENDATIONS

This report has developed a framework in which opportunities for ecotourism may be identified. Emphasis is placed on offering explanations of the various factors on which the framework is based, and on making hypothetical assumptions that may or may not hold true for different types of ecotourism. Application of the ECOS framework to potential ecotourism sites within northern Ontario is limited because information on the majority of these factors is not present and could only be collected from surveys of actual ecotourists within the areas. This is beyond the scope of the overall project. Nevertheless, some general comments are offered here by way of discussion.

A number of conceptual frameworks have appeared in the ecotourism literature in the past few years (Duffus and Dearden 1990, Fennell and Eagles 1990). These have the potential to be applied to the development of ecotourism within the ecotourism units of northern Ontario. They address nonconsumptive, wildlife-oriented recreation (a significant subset of ecotourism); the function of the resource tour (group led by a competent guide); and its relationship and impact on the visitors and the service industry.

Others have commented on how tourism may change over time, noting possible stages in the process of development (Butler 1980). Understanding that the type of ecotourist and hence ecotourism itself may, in the early stages of an area's development, shift from catering to the ecospécialist to serving the ecogeneralist population, has bearing on the type of opportunities for ecotourism an area may create Hvenegaard (1994). As a result, the role of marketing may become more vital in providing ecotourism opportunities in regions than will strict management and control over the types of ecotourism activities that are undertaken. In saying this, researchers have accumulated a substantial amount of information concerning impact relationships between tourism and the environment (Mathieson and Wall 1982). These have been previously summarized in an earlier section of this report (Fig. 1).

If the ecotourism units are to be developed, then perhaps development should proceed along specific guidelines for evaluating the priority of ecotourism activities and opportunities (Table 2), and for assessing the significance of their environmental impacts (Table 3). Many of these ideas will be examined in more detail in a later stage of this project so as to present an overall, comprehensive planning process for ecotourism suitable to northern Ontario. The next report will evaluate the overall project, including the criteria selected, parameters chosen, the GIS methodology, and the proposed framework for ecotourism opportunity.

Table 3. An example of significance of environmental impacts for an activity. Source: Butler 1993.

Aspects	Level of significance of impact		
	High (3)	Medium (2)	Low (1)
Uniqueness of site	Activity A		
Vulnerability of site	Activity A		
Reversibility of impact		Activity A	
Severity of impact			Activity A
Spatial extent of impact	Activity A		
Temporal extent of impact (continuous, seasonal, infrequent)			Activity A
Overall (13)	9	2	2

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Table 2. Evaluation of priority of tourism activities. Source: Butler 1993.

Issues	Characteristics		
Alternative opportunities in region	None	Several	Many
Quality of experience in region	High	Medium	Low
Proportion of visitors desiring activity	All	Some	Few
Relationship with other tourism activities	Complementary	Compatible	Competitive
Relationship with other resource activities	Complementary	Compatible	Competitive
Seasonality	Year round	Seasonal	Limited
Permanence	Established	New	Proposed
Change in site characteristics	Greatly	Some	Negligible

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