Ecosystem Sustainability and Resource-Based Tourism: Linkages and Indicators

Michelle Rae Johnson ©

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Abstract

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The landscape of northern Ontario provides an ideal setting for resource-based tourism and, in recent years, the focus on tourism has increased due to the popularity of outdoor recreation and the notion that tourism can increase community sustainability. Resource-based tourism is based on a wide range of activities which are both consumptive and non-consumptive. As an industry, tourism can have significant impacts on natural, physical or social environments and it is important that the industry be managed sustainably. Currently, there is no generally accepted approach for examining the sustainability of the resource-based tourism industry and ensuring that resources are managed in the interests of future generations. The international forestry and tourism industries have adopted the concept of sustainability indicators. Their initiatives provide guidance for the development of a regional framework for resource-based tourism. Through a workshop and mail survey, members of the Northern Ontario Tourism Outfitters Association (NOTO) identified values that they believe are essential to the sustainability of resource-based tourism. This input, combined with data collected through a literature review, was utilized to develop a suite of indicators of sustainable resource-based tourism. An evaluation of each indicator was conducted and a revised framework of 23 indicators reflecting on ecological, economic and social values is presented. The framework will be useful to resource managers and the tourism industry.

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Chapter One: Introduction

Background

The forests of northern Ontario provide an ideal setting for resource-based tourism. A mixture of freshwater lakes and rivers, extensive forest cover, and unique formations of the Canadian Shield creates diverse and rugged terrain. The region gives the impression of untouched wilderness and this attracts tourists who participate in various outdoor pursuits. The focus on tourism has increased in recent years due to the growing popularity of outdoor recreation and the notion that tourism can increase the community sustainability of northern Ontario's towns and cities.

Globally, tourism is the fastest growing industry, and tourism based on the natural environment is outpacing other types of tourism development (Robbins, 1997). In Canada, tourism generates over 27 billion dollars annually and is of major significance to the national economy (Robbins, 1997). In northern Ontario, it is estimated that resource-based tourism generates 10,000 direct and indirect jobs and annually contributes approximately $460 million to the economy on an annual basis (Hodgson, 1996; OMEDTT, 1998). The demand for resource-based tourism, especially ecotourism, is expected to increase significantly with the aging baby-boomer population (Robbins, 1997). Entrepreneurs in northern Ontario have the potential to benefit from this trend by promoting and expanding tourism operations

and the Northern Ontario Tourist Outfitters Association (NOTO) believes that northern Ontario will grow as a unique world-class tourism destination (NOTO, 1998).

A wide range of activities including snowmobiling, cross-country skiing, hunting, fishing, hiking, canoeing, and kayaking form the basis for tourism in northern Ontario (North of Superior Travel Association, 1996). Each of these activities has unique impacts on ecosystems since the activities vary in their consumption and use of resources as well as their use of motorized vehicles. As an industry, tourism can have significant negative impacts on natural, physical or social environments (Robbins, 1997). Because resource-based tourism depends largely on the natural environment and, in some cases, the cultural heritage of a destination area, it is important to sustainably manage the industry (Robbins, 1997).

Protection of the environmental qualities that constitute the foundation of resource-based tourism has become an integral part of Ontario's public land management debate (Haider and Hunt, 1997). The past 20 years have seen increasing land-use conflicts between timber interests and tourism (Haider and Hunt, 1997). These arguments recently came to the forefront in the Lands for Life process, which was a comprehensive land-use planning process aimed at integrating the protection and use of Ontario's natural resources (Ontario Ministry

of Natural Resources, 1997). The Lands for Life process provided a forum for tourism operators, timber companies, recreationists and environmentalists to voice their opinions regarding the future uses of Ontario's forests. The tourism operators hoped to protect the areas surrounding their establishments from conflicting land-uses and other users fought to protect their rights to various aspects of forest resources. Perhaps one of the lessons from this process is that a single exercise in land-use planning is unlikely to solve the land-use conflicts in Ontario's forests. Rather, all stakeholders must make an honest effort to work in cooperation with other groups and be conscious of their impacts on the natural environment.

The implementation of a national set of criteria and indicators for sustainable forest management has been an ongoing process that began before Lands for Life and continues at the present time. In 1995, the Canadian Council of Forest Ministers (CCFM) approved a national framework of criteria and indicators developed through a comprehensive consultation process (Nordin, 1996). Forest sustainability is assessed and the performance of forest-based industries is monitored using ecological, economic, and social indicators. The tourism industry plays a small role in the forest-sector indicators; however, research is needed to improve our understanding of the needs and issues pertaining to this industry.

Most of the work on sustainability indicators for tourism has been conducted on a global level. The Tourism Industry Association of Canada (TIAC) and the

World Tourism Organization (WTO) have adopted the concept of sustainability indicators. Countries such as Argentina, New Zealand, and Canada have conducted pilot studies that evaluate sustainability indicators for tourism (Consulting and Audit Canada, 1995). Although these indicators serve as a useful guide, none have been developed specifically for use in northern Ontario. The resource-based tourism industry is distinct in the types of experiences it offers and its turbulent relationship with other resource stakeholders. Indicators for resource-based tourism must integrate the unique characteristics of northern Ontario's tourism industry and external factors, such as forest management, to provide a complete picture of sustainability.

Resource-based tourism depends on a relatively pristine environment and it is essential that tourism resources be managed to provide long-term use and enjoyment (NOTO, 1998). Currently, there is no generally accepted approach for examining the sustainability of the resource-based tourism industry and ensuring that resources are managed in the interests of future generations. Performance indicators provide a useful mechanism for evaluating the sustainability of resource-based tourism; however, it is important to consider the internal (within the tourism industry) and external factors that affect the industry. The goal of the indicator framework is to provide an overall perspective of economic, environmental, and social viability of the tourism industry.

Study Justification

The resource-based tourism industry in northern Ontario makes an important contribution to the economic diversity of the region and can have significant impacts on natural and human environments. Because the industry is heavily dependent on abundant natural resources and the presence of pristine environments, it is essential that the development of tourism and management of natural resources occur in a sustainable manner.

Currently, there is no evaluative mechanism which integrates the economic, ecological and social impacts of resource-based tourism. Our understanding of this industry as a whole is limited since previous research has focused on specific segments such as remote tourism (e.g. Hunt and Haider, 1996). It is critical that the needs and impacts of this industry be assessed to determine which values are indicative of sustainable resource-based tourism development. A value is a feature which makes resource-based tourism important and/or desirable to people (adapted from Wedeles et at., 1998). Measurable indicators associated with these values must then be monitored to provide data for determining the long-term impacts of human actions.

Understanding sustainability requires a comprehensive framework and it is recognized that no single indicator can give an adequate overall picture of sustainability (CCFM, 1995). Managing resources requires attention to all of the

indicators in the framework, and indicators should be viewed as providing information on trends in the status of resource-based tourism and related values over time. This information is essential for adaptive management practices where the learning process is integral. Identifying the indicators of sustainable resource-based tourism is the first step towards protecting ecological, economic and social values and affirming our commitment to the well-being of future generations.

Purpose of Research

The purpose of this research is to investigate the issues of sustainability for resource-based tourism and to develop an indicator framework of use to resource managers and the tourism industry. In addition, members of Canada's tourism and timber industries will find the indicators useful as they develop their indicator frameworks at regional levels. The framework must include ecological, economic, and social indicators that address important resource-based tourism values.

Research Questions

1. What factors affect the sustainability of northern Ontario's resource-based tourism industry?

2. How can the sustainability of this industry be measured using an indicator framework?

Chapter Two: Sustainability Concepts and Resource-Based Tourism

Since the focus of this research is the sustainability of northern Ontario's resource-based tourism industry, this chapter outlines the concept of sustainability. In addition, descriptive information on the resource-based tourism industry and its associated environmental issues are discussed.

Sustainability Indicators

The World Commission on Environment and Development popularized the concept of sustainable development in the late 1980s (WCED, 1987). The WCED Report defined sustainable development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43). Since their inception, the terms sustainable development and sustainability have come to mean different things to different people. For example, the National Task Force on Environment and Economy (1987) of Canada defined sustainable economic development as "development which ensures that the utilization of resources and the environment today does not damage prospects for their use by future generations". Robinson et al. (1990) define sustainability as "the persistence over an apparently indefinite future of certain necessary and desired characteristics of the socio-political system and its natural environment". Despite the discrepancies between definitions of sustainable development and

sustainability, the basic concept is that present activities should not limit future opportunities.

Although the term sustainability defies precise definition, it is a concept that has driven responsible human development for more than a decade. Some argue that the ambiguity of the term is a positive attribute since it encourages disparate groups of concerned interests to participate in discussions on how to improve environmental and natural resources management (Duinker, 1996). The productivity of these discussions is enhanced by avoiding disagreements over the exact definitions of each group's conceptual framework (Duinker, 1996). It is important to attempt to implement the concept of sustainability rather than become distracted by defining the term precisely.

Using a carefully selected suite of indicators to monitor the impacts of human actions is a means to operationalize the concept of sustainability. Performance indicators have been used to monitor various economic and social values for several decades. Some familiar indicators include consumer spending or the unemployment rate which are intended to reflect the strength of an economy. Also, Gross Domestic Product (GDP) is used routinely as an indicator of a country's wealth. Although the term 'indicator' has several interpretations, a general definition is: a quantitative, qualitative or descriptive variable that, when periodically measured and monitored, shows the direction of change (VonMirbach,

1999). The use of indicators is expanding into several disciplines and sustainability indicators are becoming increasingly important.

Achieving sustainability requires a cyclical process that involves forecasting the effects of management actions, measuring and monitoring the actual effects, evaluating the management actions and forecasting methods, and improving the management actions and forecasting methods. These processes form the basis of adaptive management which the Ontario Forest Policy Panel (1993) defines as management which integrates learning processes. Adaptation is based on a review of system performance as measured by indicators relative to forecasts and expectations (Baskerville, 1993). Performance is not measured on the basis of the tools used since the outcome that was previously forecasted is most important. This is why predictability is a desirable characteristic of a performance indicator and why indicators that measure outcomes rather than processes dominate the proposed framework for sustainable resource-based tourism.

Adaptive management and its associated activities can be viewed as an investment for future generations to ensure that their quality of life is not diminished because of poor management practices of the present. As an important learning process, future generations stand to benefit from the knowledge gained from the successes and failures of the present.

The concepts of sustainability and adaptive management were fundamental

in the two main components of this research. The first component was an examination of the tourism industry from ecological, economic, and social perspectives, and the second was the development of an indicator framework for sustainable resource-based tourism. An essential aspect of this research was the input from tourism operators obtained through a workshop and a mail survey. The information provided by tourism operators complemented data gathered from existing literature pertaining to sustainability issues and indicators. Integrating qualitative and quantitative data with an extensive literature review led to the development of an indicator framework for resource-based tourism.

Indicators of Sustainable Forest and Tourism Management

In 1992, the Canadian Council of Forest Ministers (CCFM) emphasized the importance of sustainability in forest management through its publication of "Sustainable Forests: A Canadian Commitment". They described the goal for forest management in Canada as follows:

> to maintain and enhance the long-term health of our forest ecosystems, for the benefit of all living things both nationally and globally, while providing environmental, economic, social and cultural opportunities for the benefit of present and future generations (CCFM, 1992).

Further, the CCFM made a commitment to develop nationally applicable criteria and indicators of sustainable forest management. Shortly after this, at the

United Nations' Conference on Environment and Development (UNCED), the negotiated Forest Principles recognized the need to formulate scientifically based, internationally accepted criteria and indicators of sustainable forest management (CCFM, 1995). It was expected that criteria and indicators would provide the basis for monitoring the environmental, economic and social effects of forest management and, in time, determine the sustainability of human actions. Criteria and indicators were viewed as a means to implement the concept of sustainability, thereby transforming it from 'buzzword' status to an operational framework.

Shortly after the formation of an international working group for boreal and temperate forests, the participating countries endorsed a set of criteria and indicators for forest conservation and management. The document, known as the Santiago Declaration, was seen as a foundation upon which the signatory countries could build a comprehensive set of criteria and indicators suited to national conditions (Canadian Forest Service, 1995). The first progress report on the development of national indicators for Canada was published in 1997 (Canadian Forest Service, 1997). The report identified a lack of data for certain indicators dealing with social aspects of forest management, and activities such as recreation and tourism. The report also stated that adequate data and technology were available to monitor the biological and economic indicators related to the forest industry (Canadian Forest Service, 1997).

The CCFM published its framework of criteria and indicators for sustainable forest management in 1995 (CCFM, 1995). Two of the six criteria are socio-economic and address the multiple benefits to society and society's responsibility for sustainable development (CCFM, 1995). The indicators which relate directly to resource-based tourism are:

1. Contribution to the gross domestic product (GDP) of non-timber sectors of the forest economy
2. Total employment in all forest-related sectors
3. Availability of recreational opportunities
4. Total expenditures by individuals on activities related to non-timber use
5. Membership and expenditures in forest recreation-oriented organizations and clubs
6. Area and percentage of protected forest by degree of protection.

In general, these indicators are open to several interpretations and are rather vague in their present form. Subsequently, the above indicators may not necessarily reflect the impacts of various forest management regimes on other uses such as tourism and recreation. It should be noted that this framework was intended to serve as a guideline for the development of regionally specific indicators, and is therefore insufficient in some areas (CCFM, 1995). It would be beneficial to expand and improve upon the above list in areas where tourism and recreation are significant. An integrated approach to forest management and

tourism must include the development of an indicator framework that reflects the relationships among various activities and their impacts on the environment.

The international tourism industry has also embraced the concept of sustainability indicators. The World Tourism Organization (WTO) has promoted the concept since the early 1990s. Sustainable tourism has been defined in several ways, for example:

> Tourism which is developed and maintained in an area in such a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment (human and physical) in which it exists to such a degree that it prohibits the successful development and well-being of other activities and processes (Butler, 1991).

In 1995, the WTO developed a list of core indicators of sustainable tourism. The indicators addressed issues such as site protection, stress, use intensity, social impact, development control, waste management, planning processes, critical ecosystems, consumer satisfaction, local resident satisfaction, and tourism's contribution to the local economy (Consulting and Audit Canada, 1995). The indicators are best suited to large-scale tourism developments, urban/resort tourism, and ecotourism developments in sensitive environments. Although tourism development in northern Ontario may appear sparse, this industry does have environmental impacts. The emerging view is that tourism has significant effects on the natural, human-made and socio-cultural environments in which it is situated

(Garrod and Fyall, 1998). Because of this, some authors believe that tourism should be regarded as an extractive industrial activity (Garrod and Fyall, 1998).

A pilot study in Prince Edward Island was conducted to determine the effectiveness of the proposed WTO indicators (Manning, 1995). The study recommended that destination-specific indicators be tied to managerial or data units and that it may eventually be useful to establish a regional reporting framework. The study also recommended that Canada expand the pilot program to encompass a broader range of tourism destinations and develop a simple spatial database of key tourism indicators for important tourism regions in Canada (Manning, 1995).

The philosophy for sustainable tourism parallels that for sustainable forest management and, in areas such as northern Ontario, it makes sense to link the two philosophies to broaden the scope of sustainability. The forests and lakes of northern Ontario provide the setting for resource-based tourism activities and with tourism development come impacts on the natural and human environments. To make the decisions required for sustainable tourism development, tourism managers and land-use planners require a base of useable and meaningful measures corresponding to the ecological, social, economic, and planning environments (Dymond, 1997).

In developing a suite of indicators for resource-based tourism, several relationships must be considered. These are; the effects of forest management

(including timber harvesting) on tourism operations, the effects of forest management and tourism activities on the environment and the effects of tourism activities on the industry itself. Essentially, the factors affecting the sustainability of resource-based tourism originate from within the industry and externally from other activities pertaining to forest management. The CCFM and WTO frameworks provide structure to the conceptual approach of this research and the relationship between these initiatives is outlined in Figure 1.

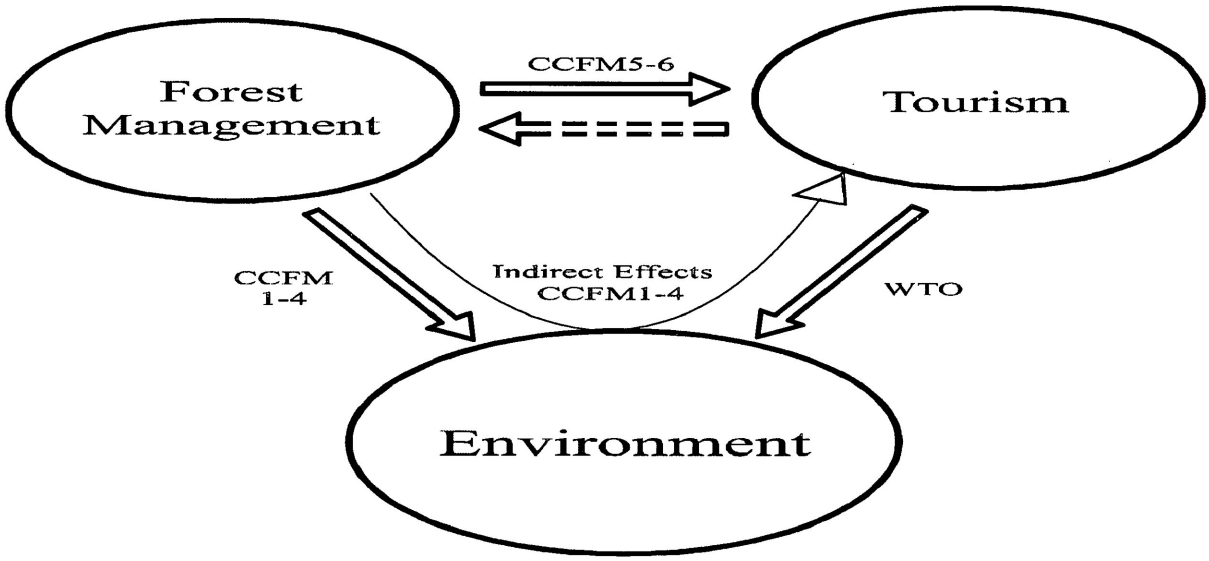

Figure 1: Links Between Forest Management, Tourism and the Environment

In the CCFM framework, criteria one through four address the relationship between forest management and ecological values. As seen in Figure 1, these indicators address the effects of forest management on the environment, which can have indirect effects on the tourism industry. CCFM criteria five and six address

the relationship between forest management and socio-economic values such as resource-based tourism. The WTO framework directly focuses on the relationship between tourism and the environment. Since the focus of this initiative is the sustainability of resource-based tourism, the discontinuous link between tourism and forest management is not discussed. The links between tourism, forest management, and the environment form the basis of the indicator framework that was developed through a combination of the CCFM and WTO philosophies.

Characteristics of Resource-Based Tourism

Several types of resource-based tourism exist, from non-consumptive activities such as bird watching to consumptive activities such as hunting. For the purpose of this thesis, resource-based tourism is defined as:

> tourist activity which focuses on outdoor recreation and natural resources such as forested land, wildlife, lakes and rivers; road-based, semi-remote, and remote tourism are included in this definition.

In northern Ontario, the traditional focus of resource-based tourism activities has been hunting and fishing; however, other activities and forms of ecotourism are gaining importance (Haider and Hetherington, In Press). According to Hunt and Haider (1996), fundamental differences in resource-based tourism facilities can be observed in terms of accessibility, structure and available services.

Some facilities can be accessed by road while 'remote' tourism

establishments are located in roadless areas and are can only be accessed by air, commonly using float planes (Hunt and Haider, 1996). Key attributes of remote tourism are the inaccessibility, unique use, isolation and high-quality environmental resources (NOTO, 1998). Semi-remote tourism establishments can be accessed by boat or train, but the lakes are usually road accessible (Hunt and Haider, 1996). Road access on such lakes is restricted through artificial means such as a gates (NOTO, 1998). Road-accessible resource-based tourism is therefore characterized by little or no access control to the facilities (NOTO, 1998).

Road-accessible, semi-remote and remote facilities are usually in the form of lodges or outposts (Hunt and Haider, 1996). Lodge operations are typically composed of several cabins grouped around a central unit and may accommodate between ten and 100 customers at one time. Lodges vary significantly in size and quality and most operators own the land around the lodge (patented land), but some operators have long-term leases with the Crown (Haider and Hunt, 1997). Outpost camps are single cabins situated alone on one lake, or in isolated areas of larger lakes (Hunt and Haider, 1996). Operators of outposts obtain a Land-use Permit from the Ontario Ministry of Natural Resources (OMNR) which entitles them to operate such facilities (Haider and Hunt, 1997). Currently, a few lodges cater to ecotourists during the month of August, when sales are slower, and most air services transport canoeists who desire to be air-lifted to otherwise inaccessible

routes (Haider and Hunt, 1997).

The term 'ecotourism' has been used to describe a variety of outdoor tourism activities, leading to several interpretations. Hector Ceballos-Lascurain introduced the term over a decade ago as meaning:

> traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas (Ceballos-Lascurain, 1987).

This definition implies that ecotourism is non-consumptive; therefore, hunting and fishing are not placed in this category. Some typical ecotourism activities include hiking, canoeing, bird watching, photography, backpacking, kayaking and mountain-biking.

The resource-based tourism industry in northern Ontario is diverse in that it incorporates all of the aforementioned genres of tourism. The industry will undoubtedly benefit from the global trend of increasing tourism and more tourists will look to northern Ontario as a venue to enjoy outdoor pursuits. Because Canada has a strong international reputation for possessing a clean, unspoiled, and uncrowded environment, work is needed to capitalize on this image and to ensure a sustainable tourism industry (Robbins, 1997). Using indicators to monitor the state of vital tourism values could be an important step towards ensuring the

sustainability of the resource-based tourism industry.

Ecosystem Values and Those Vital to Resource-Based Tourism

Resource-based tourism is dependent on the existence of 'natural' aquatic and forest environments, and the degree of naturalness required varies with the activity (Boyd et al., 1995). For example, in the case of land-based activities, users may move through the forest taking notice of numerous detailed forest characteristics (Boyd et al., 1995). On a hike, people may be alert to the presence of rare flora or fauna and are there to enjoy the sights and sounds of the forest. Aquatic areas often provide important backdrops and scenic vistas, but people are unlikely to notice subtle changes in water quality.

The above situation is reversed for water-based activities (Boyd et al., 1995). For an angler, the forest provides a scenic backdrop and the quality of the water and fishery is of great importance. Subtle changes in water quality may affect the fish stocks that can, in turn, affect the quality of the fishing experience. The angler still enjoys the forest but may not notice the disappearance of a rare bird that may be sought by a hiker. Clearly, the strength of the link between tourism and ecosystems depends on the type of activity in question; however, naturalness is a key criterion for all activities (Boyd et al., 1995).

A study of the motivations of remote-tourism fishing clients showed that the

most important item that draws people to these facilities is the opportunity to recreate in a pristine environment and enjoy beautiful scenery (Haider and Hunt, 1997). The second most common motivational item was being close to nature and observing wildlife, and the third was having a stimulating and exciting experience. While fishing is unquestionably the main attraction for such a vacation, the forests surrounding the destination lakes ensure 'remoteness' and provide a scenic backdrop (Haider and Hunt, 1997). Clearly, the quality and quantity of fish are important to remote tourism as are certain fish species. A visitor survey in 1997 showed that walleye is, by far, the most preferred species, followed by northern pike and trout (Haider and Hunt, 1997). It is important that the fisheries are maintained to secure a steady clientele for the remote-tourism industry.

The motivations of ecotourists are similar as the most important elements of a trip have been identified as a wilderness setting, wildlife viewing, hiking, trekking, and visiting protected areas (Wight, 1996). When tourism operators were asked to rank the most important product characteristics, a wilderness setting ranked first, followed by guides, outdoor activities, all-inclusive packages, protected areas, and educational programs (Wight, 1996). In general ecotourists prefer uncrowded remote settings, opportunities to learn about nature and aboriginal culture, opportunities to view plants and animals, and engaging in activities with a physical challenge (Crossley and Lee, 1994).

Several studies have been conducted with the goal of identifying important natural features for ecotourism. Kretchman and Eagles (1990) found that wilderness, undisturbed nature, lakes and streams are far more important to the Canadian ecotourist than to the average Canadian traveler. Magill (1992) identified characteristics such as forest stands, hills, dome peaks, rocks, water and color contrast as being appealing to ecotourists. In general, ecotourists prefer unaltered landscapes and do not like to see large clear areas or roads (Magill, 1992). An analysis of advertising content by Eagles and Wind (1994) gives some insight into the primary attractions. This survey showed that birds, wildlife, eagles, grizzly bears, and caribou are key attributes of fauna while wildflowers and forests are key attributes of flora (Eagles and Wind, 1994).

Ecosystem values such as pristine wilderness, scenic vistas, and opportunities to view unique biotic features are vital for the sustainability of resource-based tourism. A recent study by Hunt et al. (In Press) examined the desirability of northern Ontario Crown land-users for recreating in logged settings. One of the survey findings was that most recreationists who participate in non-consumptive activities find logged setting less desirable than others. These tourists are attracted to areas undisturbed by timber harvesting. Included in this large group of activities are canoeing, kayaking, biking, hiking, cross-country skiing, and other non-consumptive, non-motorized activities (Hunt et al., In Press). This implies that

tourists participating in such activities may recoil from areas where logging is evident and will prefer to recreate in pristine areas, such as parks and protected areas (Hunt et al., In Press).

Participants in consumptive activities such as hunting and fishing found logged settings more desirable than others (Hunt el al., In Press). Fresh cuts and new roads actually increase opportunities for such activities since new areas are made accessible that were previously either difficult or impossible to reach by vehicle. It is clear that northern Ontario can attract many individuals to recreate in multiple land-use-based settings, but at the same time a large potential market exists for recreationists and tourists demanding undisturbed settings (Hunt et al., In Press).

In Ontario, provincial park visitation statistics show a steady increase in the number of visitors since the mid-1970s (see Table 1). This indicates increasing interest in outdoor recreation based on a natural setting. It also implies that once-remote areas are likely to see increased levels of use.

Table 1: Algonquin Park Visitor Statistics.

Year	Number of Visitors
1975	200,000
1980	311,971
1985	491,259
1990	594,807
1995	971,309
1998	938,006

Source: Ontario Provincial Park Statistics

Although not all parks have shown the same degree of increased use as Algonquin, most have experienced an increase in visitors during the past decade (OMNR, 1999b). Provincial Parks provide an ideal setting for some types of ecotourism since they are typically home to diverse landscapes, unique geological formations, rare flora and fauna, recreational trails and interpretive programs. The fact that parks such as Algonquin are becoming heavily used suggests that tourists are likely to seek less-crowded environments such as the forests of northern Ontario. With the outcome of the Lands for Life process, 12% of Ontario's land and water will soon be protected to some degree (OMNR, 1999a) but it is questionable whether this area can accommodate the future growth expected in ecotourism activities.

Resource-Based Tourism and the Environment

The relationship between resource-based tourism and the environment is complex as competing land uses must be considered in addition to the impacts of tourism. The environmental impacts of resource-based tourism are poorly documented except in the case of parks and protected areas. In areas where tourism activity is significant, concern over environmental impacts has increased. In some cases, the tourism industry has expanded faster than the knowledge about carrying capacity and impacts on the natural environment.

A prominent example of the negative impacts of ecotourism is found in Banff National Park (Thompson, 1996). A multitude of problems have been attributed to tourism development including: the decline of wolf, grizzly bear, and elk populations; negative effects on water quality; problems with litter control; and the introduction of non-native plants and fish (Banff-Bow Valley Task Force, 1996). In Australia, tourism contributes to soil erosion, wildlife disruption, water pollution, wildfires, noise disturbance in natural areas, and deterioration of the corals of the Great Barrier Reef (Kaltenborn, 1996). It is now clear that if tourism in sensitive environments is not conducted with conscientious attention to the principles of resource stewardship, it could deplete the very qualities that tourists seek (Robbins, 1997).

Although the ecotourism industry is fairly small in northern Ontario, care

must be taken to ensure that the natural environment is managed sustainably. Ecotourism activities are a common occurrence in protected areas both globally and in northern Ontario. Attempting to preserve an area while promoting public use poses several problems, and, in the case of frequently visited parks, human use directly conflicts with resource preservation (Banff-Bow Valley Task Force, 1996). However, tourism is seen as being important for protected areas since the opportunity to experience the natural world frequently converts visitors into supporters of natural areas (Ceballos-Lascurain, 1996). In many cases, tourists need protected areas while protected areas need the revenue tourism generates and the exposure tourists bring. Visitor management and resource management are needed to avoid adverse impacts in protected areas (Ceballos-Lascurain, 1996).

Significant tourism activity occurs outside of protected areas and involves consumptive activities such as hunting and angling. The environmental impacts of these activities and their associated tourism developments have not been studied. In northern Ontario, environmental concerns have historically been associated with other land uses. Although all resource-based tourism is sensitive to disturbances by other land-uses, some argue that remote tourism's emphasis on pristine nature and remoteness makes it more vulnerable (McKercher, 1992). The major issues are associated with the effects of timber management and have been identified as access, aesthetics, and noise (Haider and Hunt, 1997). Access is the most

controversial issue of the three and it seems to be the most difficult to resolve.

In recent decades, remote tourism has been at the forefront of conflicts with other land-uses, most notably timber management (McKercher, 1992). As timber harvesting operations move further north, the timber industry begins to impede remote tourism through effects on landscape aesthetics and increased road access to remote lakes (Haider and Hunt, 1997). According to NOTO (1998), land use conflicts have led to the decline or demise of dozens of remote tourist facilities, valued at millions of dollars. In one instance, an operator northwest of Thunder Bay lost half of his accommodation facilities in 15 years because of expanded logging operations (McKercher, 1992). Clients are attracted to remote tourism by the opportunities to fish or hunt in a pristine wilderness-like setting (Haider and Hunt, 1997). Despite the fact that fishing is the main attraction for most clients, the forests surrounding the destination lakes increase the inaccessibility of the lake via land, and provide an important scenic backdrop to the main activity (Haider and Hunt, 1997).

A survey by Hunt et al. (2000) found that operators of remote establishments frequently hear complaints from guests about access-related issues. Operators commonly report problems such as guests seeing roads from the air in close proximity to tourism waters, and having non-guests access a waterbody by road (Hunt et al., 2000). At semi-remote establishments, the most common

complaint stems from non-guests accessing a waterbody. Obviously, road-based establishments do not share the same level of concern regarding access with remote and semi-remote establishments. The problem with roads is that they are a relatively permanent feature of the landscape and are used by anglers, hunters and other recreationists (McKercher, 1992). This leads to conflicts between different recreational groups as remote and semi-remote tourism clients and road-based recreationists compete for the same resources (Haider and Hunt, 1997).

Aesthetic concerns are also significant for resource-based tourism operators. Forest harvesting operations can apply various cut patterns to reduce adverse aesthetic effects and harvest operations can be restricted such that they do not disturb the clientele of tourist facilities. Unfortunately, cutovers are difficult to hide from tourists, especially those visiting remote establishments. From aircrafts, remote tourists are able to see an immense area which leads to complaints regarding the proximity of cuts to tourism waters (Hunt et al., 2000). Noise is also an issue that generates complaints at establishments with all three types of accessibility (Hunt et al., 2000). A successful remote-tourism operation requires limited access to the fishery of a lake, and buffers of pristine forest surrounding the lake (Haider and Hunt, 1997). These buffers further enhance the wilderness experience by providing aesthetic benefits and by hindering access by other anglers. The restriction of access and the requirement of a large buffer frequently

leads to land-use conflicts.

Conflicts between local users and remote-tourist operators arise for several reasons. Forest roads allow for road access to previously remote lakes which diminishes the quality of the tourist's experience (Haider and Hunt, 1997). It is thought that a lake accessible by road and frequented by local recreationists loses its appeal for remote-tourism clients. The major attraction of remoteness is the high actual or perceived fishing quality associated with the inaccessibility of a lake. A visitor survey conducted in 1996 found that the tranquility of a destination and the absence of people is the second most important attribute tourists consider when selecting a particular destination (Research Strategy Group Inc., 1997).

Local recreationists argue that, as citizens of Ontario, they have the right to fish and hunt on Crown land (McKercher, 1992). It seems unjust to local users that tourism operators are able to restrict access to lakes. This is illustrated in a letter from a concerned citizen to his local OMNR office. The man stated that it is "not fair that remote operators have exclusive use of lakes" since the roads are "built on Crown land" and the "fish belong to the people of Canada". His argument that local users have a right to access these areas was followed by a statement that "remote tourists don't spend money in town" and the operations are of little economic benefit to the community (Anonymous, 1993).

In the past, the residents of Armstrong, Ontario have expressed the above

sentiments relating to lake access and economic benefits. According to Wanlin et al. (1994), many residents of Armstrong do not consider remote tourism to contribute significantly to their local economy. They believe that very little of the tourists' expenditures remain in Armstrong since several operators are seasonal residents. In addition, many supplies needed by tourist operators and their clients are not available in Armstrong, so there is little opportunity for them to spend money in town (Wanlin et al., 1994). Consequently, local citizens do not see the benefits of the remote tourism establishments, and this causes frustration when access to the tourism lakes is restricted. Operators of tourism establishments in close proximity to communities such as Armstrong must make an honest effort to participate in that particular community. Through hiring local residents or involvement in community development projects, tourist operators can strengthen their relationship with local citizens.

It was expected that the Lands for Life process would introduce a new land-use planning system that would allocate resources among competing interests in a fair and equitable manner. During the process it became clear that "fair" is a matter of opinion and perspective. Despite the lengthy public consultation, some user groups were left unsatisfied and felt that protection measures were insufficient. Conversely, others voiced the opinion that the protected areas were excessive and unnecessary. Lands for Life served to provide those involved in land-

use planning and forest management with broad directives but specific tourism values must be identified and protected on a case-by-case basis (OMNR, 1999a).

Resource-based tourism is dependent upon natural environments (i.e. those without human developments and settlements), aesthetically pleasing forest cover, recreational opportunities (e.g. hiking trails and waterways), and peaceful surroundings (Twynam and Robinson, 1997). Remote tourism is especially dependent on healthy fish and wildlife populations, remoteness, and limited access (Haider and Hunt, 1997). Through long-term monitoring of carefully selected indicators the quality of these features can be preserved for future generations.

Chapter Three: Methods

General Approach

In studying the sustainability of resource-based tourism, it is necessary to determine the links between the industry and aspects of the natural and human environment. This requires an examination of the tourism industry from ecological, economic and social perspectives. The ultimate goal of this research was to develop an indicator framework for sustainable resource-based tourism.

To determine the variables that affect the resource-based tourism industry and the values that the indicator framework should address, a workshop and survey were conducted. The workshop was a qualitative means of gaining feedback on the issues that affect tourism operators and their willingness to participate in the collection of indicator data. To obtain a quantitative account of the workshop results, a survey was developed and distributed to all NOTO members. Therefore, the workshop was a tool that assisted in the survey development. The survey also provided an opportunity for greater depth of discussion between me and the tourism operators. Insight into the ecological awareness of some operators was gained during this session. The discussions were encouraging since some participants demonstrated an acute concern for the environment in which they operate.

It was imperative that the development of a framework for sustainable

resource-based tourism involve tourism operators since change will most affect their businesses and they should have the greatest understanding of the forces behind such change. In addition, a large degree of cooperation would be required from tourist operators to collect the data needed for specific types of indicators. Thus, the workshop and survey served as important steps to identify preliminary indicators and also introduced tourism operators to the concept of sustainability indicators.

Sustainability indicators have been developed by groups in the tourism and forest communities. Since the purpose of this thesis is to identify indicators for resource-based tourism in northern Ontario, both of these existing initiatives served as essential cornerstones for building a preliminary framework. Indicators from forest and tourism initiatives were included in the resource-based tourism framework. A definite link between an indicator and a resource-based tourism value was an essential requirement. Other indicators were developed through the workshop and the survey and are unique to this framework.

The indicators for sustainable resource-based tourism were evaluated using six criteria as a means to refine the framework. The evaluations also provide insight into the logistics of measuring each indicator. A revised framework is presented, which is intended to assist those involved in forest management and the tourism industry.

Workshop

The workshop was held at the annual NOTO convention on November 8, 1998 in Thunder Bay, Ontairo. With the assistance of a facilitator, this two-hour session was used to refine response categories for the questionnaire and enable tourism operators to provide feedback on the concept of sustainability indicators for resource-based tourism. The atmosphere of the workshop was informal to enable a constructive discussion of sustainability issues. The roles of the facilitator were to maintain the focus of the discussions and to ensure that all participants were given equal opportunity to share their experiences and opinions. Each participant was given an outline of the workshop, which also provided background information on the concept of sustainability indicators (see Appendix A.1). After a formal introduction of the topic, the objectives of the workshop were clearly identified.

In addition, drafts of the survey were circulated at the end of the workshop to several participants. These surveys were collected over subsequent days and served as a useful pre-test of content and wording of individual questions. Operators who participated in this pre-test were removed from the survey mailing list to reduce bias.

Survey

The survey was collaborative initiative with the Centre for Northern Forest

Ecosystem Research (CNFER), Tourism Effects Unit of the Ontario Ministry of Natural Resources. Survey questions that are not discussed in this thesis were developed by CNFER and are published in a separate report (refer to Hunt et al., 2000).

Since the survey focused exclusively on resource-based tourism, a current list of NOTO members was obtained to represent the population of tourism operators in northern Ontario in October of 1998. Although not all resource-based tourism operators are members of NOTO, this group was selected for several reasons. First, and most important, NOTO was able to provide winter mailing addresses for each of their members. Second, it was important to distribute the survey prior to the December holiday season to ensure a high response rate and the NOTO membership list was the largest sample that could be obtained relatively quickly. Also, other tourism organizations such as the North of Superior Travel Association are regional and include urban operations such as gift stores and hotels. It would have been a subjective process to eliminate non-resource-based tourism operations from such membership lists and this may have introduced sampling bias.

By sampling NOTO members, it is likely that ecotourism operators are under represented. Traditionally, NOTO's membership has comprised hunting and angling outfitters; however, with the increasing trend toward non-consumptive recreation, the organization has attempted to include ecotourism operators in its activities. In

any case, the benefits of using the NOTO membership list as a population outweighed the costs as alternatives were not readily available.

A total of 528 surveys were mailed to tourism operators in late November 1998. The Total Design Method (Dillman, 1978) was applied to the survey design and distribution. This entailed a postcard reminder that was sent to all operators a week after the initial mailing of surveys. A second survey was mailed to all non-respondents two weeks after the postcard reminder. The purpose of these follow-up procedures is to increase the response rate and reduce non-response bias in the survey (Dillman, 1978). To further increase the response rate, a financial incentive, donated by NOTO, was offered to all respondents. A ballot was included with each survey that was entered in a draw for a free NOTO membership valued at 429 dollars. Given the practicality of the incentive, it was assumed that all operators, being NOTO members, would see the value in returning a completed survey. In addition, the incentive was also a sign of NOTO's support which may also have helped to increase the response rate.

The survey was divided into three main sections with the following titles: 1) Description of Your Resource-Based Tourism Business; 2) Forest Management Practices and Tourism Concerns and; 3) Indicators of Sustainable Tourism. The first section included general questions such as the area where the operation is located, the origin of clientele, and the type of operation. This general information

was necessary to introduce the operators to the survey by allowing them to ease into the more specific, abstract and controversial questions. In addition, this information was useful for comparative statistics and cross tabulations. For example, a question from the second section of the survey could be analyzed by segmenting the operators by type of operation (i.e. remote, semi-remote or road-based). This introductory section also included questions that asked operators to identify important features for resource-based tourism and challenges to the success of their operations. In addition, operators were asked to describe past and future changes to their establishments. The responses from these questions help to identity factors that tourism operators feel affect or may affect the prosperity of their operations.

The second section included a series of questions which served to determine the operator's awareness and opinions with respect to the Timber Management Guidelines for the Protection of Tourism Values. This section was developed by CNFER and is not associated with this master's thesis. Some of the results from this section have been discussed in Chapter Two and are treated as a separate entity.

The last section contained questions that asked tourism operators to evaluate the Canadian Council of Forest Minister's (1995) indicators for recreation and tourism. An opportunity for operators to suggest revisions or additions to these

indicators was also provided. The section also asked tourism operators to identify steps they have taken to minimize the environmental impacts of their operation(s). The purpose of this question was to determine what tourist operators believe are the negative environmental impacts of their own and their guests' actions. Some of these impacts may be important in assessing the sustainability of the industry. Operators were also asked to state their willingness to provide economic data for the purposes of monitoring sustainability indicators. It is commonly assumed that tourism operators consider economic data to be confidential. This question was intended to determine the cooperation level that can be expected from tourism operators since operators willing to disclose economic data would be likely to provide other types of data.

To ensure confidentiality, each survey was stamped with a number that corresponded to a name on the mailing list. As each completed survey was returned, the number was removed from the list. At no time was any effort made to link the survey responses to individual tourism operators. In total, 324 usable surveys were returned, which, after accounting for undeliverable mail and surveys returned too late for analysis, resulted in a response rate of 62.0%. The response rate was higher than expected given the close proximity to the holiday season and the fact that this was the second survey of tourism operators in 1998.

An important factor in the selection of analytical methods was the overall

purpose of the survey in this research. The survey was a means to identify the issues and values important to resource-based tourism operators to assist in the development of a comprehensive indicator framework. The analysis of the survey data was completed using descriptive statistics, namely proportions. In addition to summarizing the results of all operators, results are presented by the accessibility of the tourism establishment. Accessibility of the operation was categorized as either road-based, semi-remote, or remote (Hunt and Haider, 1996). The accessibility of the operation for segmenting purposes was defined by the most remote establishment in cases where an operator owned multiple establishments with varying levels of accessibility.

Since remote, semi-remote and road-based establishments are distinct in the types of experiences they offer and their relationships with other land-uses, it is important that the indicators address the values important to each type of operation to be reflective of the sustainability of the industry as a whole. The fact that access varies considerably between establishments poses unique challenges since the feelings of operators are extremely diverse. Segregating the responses by accessibility ensures that the survey results capture these differences. In addition, almost two thirds of the respondents operate remote establishments thus, segregating the responses reduces the bias towards this group.

Generally, results are discussed in terms of the majority of operators in both

the total and segmented analysis. Differences in responses between accessibility groups are discussed in terms of practical significance (York, 1998). The survey results are an interim stage of the research project and are intended as a general characterization of the resource-based tourism industry.

Evaluation Framework

Using information gathered from the workshop and survey described above, the ecological, economic, and social values essential for the sustainability of resource-based tourism became evident. The majority of the indicators have been extracted from a variety of sources, and the preliminary indicator framework provides the names of these sources. The input obtained from tourism operators through the workshop and survey assisted in the development of other indicators.

Due to the time and financial constraints of a master's thesis, a comprehensive evaluation of the indicator framework was not feasible. Ideally, each indicator would have been field tested to determine its usefulness to resource-based tourism. Many of the indicators have already been subjected to this type of test and the results have enhanced the evaluation of the indicators.

When the indicators from the forest and tourism communities are consolidated, the list of indicators is substantial. Obviously, many of these indicators are not suitable for the purpose of evaluating the sustainability of

resource-based tourism. Care was taken to select indicators that reflect the values identified by tourism operators and existing tourism research. For example, the productive capability of a forest is obviously important to forest management; however, its link to the sustainability of resource-based tourism is rather distant. It was important to develop a practical list of indicators that could be examined in greater detail.

The purpose of the indicator evaluations was to ascertain the utility of the indicators for assessing the sustainability of resource-based tourism. For each indicator, the suitability and potential of the indicator for future use is discussed. If the indicator was unique to this framework and was not derived from other publications, the information required for the evaluation was collected through consultation with various organizations (e.g. NOTO, OMNR, MEDTT), and independent researchers. The rationale for these evaluations is explained and, where other evaluative mechanisms were used, the sources are referenced.

For the purpose of selecting appropriate indicators, researchers in forest and tourism management have developed a variety of evaluative criteria. The WTO has adopted data availability, understandability, ability to provide trend analysis, predictability, and the availability of threshold/reference values to evaluate potential indicators (Consulting and Audit Canada, 1995). Similarly, the Canadian Standards Organization (CSA) views measurability, feasibility, understandability, relevance,

predictability and scientific validity as being essential traits of a good indicator (CSA, 1996). The evaluative criteria of these two organizations are notably similar and the criteria used in this study are essentially a composite of those used by other organizations.

Indicators were evaluated on the basis of their relevance to the associated value, sensitivity to change, availability of data, practicality of collecting and analyzing the data, understandability, and predictability (Manning, 1999; Wedeles et al., 1998). The meaning and importance of each of these evaluation criteria are explained below.

Relevance to the associated value:

Each indicator must clearly relate to a particular value and should disclose significant information about the value. The link between the indicator and the value is essential since, without this, the implications of variations in the indicator are unclear. It is a futile effort to monitor an indicator if one cannot explain its relationship to the value and the sustainability of resource-based tourism.

Sensitivity to change:

Indicators are monitored to enable the examination of the effects of human actions and to demonstrate when the related value is not being protected. In some

cases the effects are immediate, and in others several decades may pass before the effects are observed. From the perspective of sustainable resource-based tourism, indicators that are sensitive to change are more desirable since the effects will be readily apparent and management efforts can be altered in a timely fashion. Therefore, sensitivity to change is also desirable from the perspective of adaptive management. The cycle of forecasting, implementation of management efforts, and indicator monitoring and evaluation is shortened if the monitoring produces noticeable results soon after alterations in management.

Availability of data:

Some indicators are currently monitored on a regular basis by organizations involved in forest and tourism management. There are obvious benefits in making use of data that are presently collected since the costs incurred in monitoring the sustainability of resource-based tourism can be reduced. Although availability of data is recognized as a positive trait, it is not a reason for excluding indicators from this framework.

Practicality:

The resource-based tourism industry consists mostly of small operators that lack the human and financial capital to undertake a large-scale monitoring program

for the purpose of sustainability. The costs to obtain indicator data must be reasonable to guarantee that long-term monitoring will be conducted. It will be easier to gain the support of tourism organizations and government agencies if the financial burden of the monitoring program is modest. This quality is related to data availability since both are essentially aimed at reducing the costs of data collection and analysis.

Understandability:

Indicators must be understandable by those involved in forest and tourism management decision-making. If the indicator is only meaningful to scientists who might be involved in collecting the data, the potential for integration into management efforts is reduced. After all, both forest management and tourism management are public processes that require input from a variety of stakeholders. To make informed decisions, participants in such processes must be able to understand indicator data.

Predictability:

The importance of predictability may be less obvious than the aforementioned evaluation criteria. When monitoring indicators, it is the effects of past actions that are measured. The key concept of sustainability is to ensure that

present actions do not diminish opportunities of future generations. If humans were to look only to the past to plan the future, life would be a short-sighted trial and error process. Conversely, making predictions about the future in the context of present management enables us to determine in advance when management decisions may have adverse results. It is important that managers be capable of assessing the ecological, economic, and social impacts under a variety of management plans prior to implementation.

Chapter Four: Results

Workshop

The first stage of research completed was the workshop held at the annual NOTO convention in November 1998. The workshop began with an introduction to the topic that explained the concept of sustainability indicators and their possible application to resource-based tourism. It was stressed that the input of tourism operators is vital since they are most affected by change and are the most knowledgeable about their own tourism operations. Also, a brief synopsis of the workshop goals and schedule was presented. Afterwards, the facilitator initiated a discussion with the participants based on an outline that was previously distributed. In total, six questions were discussed; a summary of the responses is presented in Appendix A.2.

The first question presented the Canadian Council of Forest Ministers' (CCFM) indicators that address resource-based tourism and recreation. Participants were asked how well they thought each of the indicators would reflect the impacts of timber-harvesting operations on resource-based tourism. The intent of this question was not to criticize the work of the CCFM or forest sector. Rather, it was a way to encourage the participants to reflect on the types of indicators that can be used for resource-based tourism. One participant noted that it is difficult to compare tourism and timber using the same measures and statistics because the

industries are unique and economic impacts vary substantially. This led to a discussion of how the tourism industry needs to initiate research and monitoring to conduct a self-assessment of sustainability.

The second question asked operators how participants would improve or expand the CCFM list to reflect more accurately the impacts of timber harvesting on resource-based tourism. In retrospect, this question should have been rephrased to address the overall sustainability of resource-based tourism rather than having focused on the timber/tourism conflict. General themes emerged in the discussion of improvements to the CCFM indicators. A dominant theme was that diversity should be incorporated into measures of recreational opportunities and participation in forest recreation-oriented organizations. Several participants noted that timber harvesting often increases recreational opportunities by opening access to previously remote areas for hunting and angling. Also, logging roads create trails for snowmobiling and all-terrain vehicles. It was argued that ecotourism activities generally do not coexist in such areas and that the diversity of recreational opportunities would be low.

Participants were asked to identify features that are important to the success of their tourism establishments. Among the most common answers were: pristine scenery, clean water, healthy fish and wildlife, true remoteness, and opportunities to provide meaningful input into forest-management planning. One participant

emphasized that tourism operators are not merely selling "fish and bear" but that they offer a true wilderness experience that includes a feeling of solitude, peace and quiet.

The next question related to challenges faced by resource-based tourism establishments. These responses included: difficulty obtaining bank loans for renovations and expansions; lack of OMNR enforcement regarding commercial fishing and over-fishing; and uncontrolled cottage development (especially in areas surrounding Temagami, Muskoka, and Lake of the Woods). Some participants expressed concern that banks do not see tourism as a profitable enterprise and are reluctant to finance loans. Using economic indicators to monitor long-term trends in the overall industry and/or individual establishments would support an application for financial assistance by enabling lenders to understand the past growth and future potential of tourism.

To determine the types of indicators that would reflect the internal factors that affect the sustainability of resource-based tourism, participants were asked to identify the known environmental impacts of their operations. Responses to this question were quite varied and ranged from waste disposal issues to wildlife management. Improper sewage disposal methods were identified as a waste management concern, the type of boat motors as an air quality concern, and impacts on fish and wildlife populations and habitats as a biological concern. It

was agreed that some operators have less concern for the environment than others and that such operators should be penalized for mismanagement of natural resources. As a positive impact, some participants stated that the education of guests and having people spend time in the wilderness helps to increase awareness of environmental issues and teaches a respect for nature.

The final item for discussion at the workshop was the willingness for tourism operators to provide information to NOTO and the Ministry of Economic Development Trade and Tourism (MEDTT). It was explained that the information would be confidential and would be used to monitor the sustainability of resource-based tourism. The participants expressed a strong willingness to provide information but stated that calculating some variables might be complicated. Many tourism operators use computer software that allows them to store data and perform simple statistical analysis. The use of such software would enable operators to report on a variety of economic variables as well as information on their clientele. Participants suggested that the number of visitor-days per season, the number of years the camp has been in business, and the total wages paid would be useful in evaluating trends in the industry.

The discussions with tourism operators provided an excellent opportunity to identify variables that an indicator framework should address. Some of these variables are unique to resource-based tourism whereas others reflect general

biological or economic characteristics. The examination of the CCFM (1995) indicators led to the development of other indicators that are useful given their specificity to resource-based tourism.

Refining response categories for the survey and gaining a general perspective of the tourism operators' receptiveness to the concept of sustainability indicators were also important aspects of the workshop. Feedback from operators was used to improve the draft survey and discussions with the operators indicated a high degree of support for the development of sustainability indicators. Unfortunately, the views of the participants may not be representative of the overall operator population since attendance was voluntary and only those operators who found the topic interesting participated. None the less, the operators in attendance showed a deep concern for the future of resource-based tourism and agreed that the industry must accept more responsibility for stewardship. One participant stated that there is a need for the tourism industry to become more organized and unified for more effective presentation at land-use planning sessions. Collecting economic, social and ecological data over long periods would help the tourism industry to predict future trends and identify the causes of past variations.

Survey Results

The survey results are presented in the order that they appeared in the

survey (see Appendix B.1). Questions not included in the following analysis were developed by Len Hunt at the Centre for Northern Forest Ecosystem Research (see Hunt et al., 2000).

Location and Accessability of Establishments

Half of the respondents (50.9%) are operators of establishments in the Northwest OMNR Region (see Figure B.2.1). Over one-third (38.6%) of operators have establishments in the Northeast Region and the remaining 10.5% operate establishments in the South-Central Region. It is not surprising that the vast majority of operations are located in the two northern regions since NOTO has traditionally served the interests of operators in this area (NOTO, 1997). The above information also illustrates the relative significance of resource-based tourism in Northwestern Ontario.

Overall, most respondents owned remote establishments (66.5%), followed by road-based establishments (23.5%), and semi-remote establishments (10.0%). Accessibility was determined by the most remote establishment in cases where operators owned multiple establishments with varying levels of accessibility.

The geographic location and accessibility of establishments is positively related as remote establishments are heavily concentrated in the Northwest Region (69.9% of all remote establishments). Conversely, no remote establishments were

identified in the South-Central Region. The number of operators with road-based establishments in the Northwest and Northeast Regions was approximately equivalent (38.7% and 43.9%, respectively). In the case of semi-remote operations, slightly more respondents are located in the Northwest than the Northeast Region (51.6% and 40.6%, respectively). Comprising the smallest percentage of all operators, operators from the South-Central Region were much more likely to be road-based.

Tenure

The tenure question asked operators to identify their tenure agreement with the Crown. Tenure agreements vary in their formality and the most secure form is deeded property (ownership). In terms of security, a Crown lease is next, followed by a land-use permit. A licence of occupation is the most informal and insecure form of tenure.

Most of the 319 operators who responded to this question have deeded property (89%). Less than half of operators (46.1%) have land-use permits, 12.2% have Crown leases, and 5.6% have licences of occupation (see Table B.2.1). These results do not sum to one hundred because some operators have multiple forms of tenure and were shown to have multiple responses.

Segmenting these results by accessibility demonstrates that land-use permits

are more commonly held by remote operators (77.7%) than semi-remote (42.9%) or road-based operators (22.9%) (see Figure B.2.3). Also, operators with remote establishments are more likely to have a Crown lease (18.4%) than operators with semi-remote (12.8%) or road-based establishments (7.8%). A higher percentage of operators with semi-remote (96.8%) and road-based (93.4%) establishments have deeded property than operators with remote establishments (72.8%). Licenses of occupation are fairly evenly distributed amongst the operators and few differences were noted. Therefore, road-based and semi-remote operators tend to own the land surrounding their establishments whereas remote operators often have less-secure tenure relationships.

Importance of Features to Resource-Based Tourism

It is widely recognized that resource-based tourism is dependent on many attributes of the natural environment. In this question, operators were asked to rate the importance of a variety of attributes in the success of their business. A five-point differential semantic rating scale was used ranging from not at all important to extremely important. A total of 324 operators provided ratings for the various features listed. Most operators rated all features as moderately to extremely important to the success of their business. The features rated most important (i.e. greater than 90% of operators rated a four or five on the scale) were

the *quality of the fishery*, *quiet and peaceful surroundings*, *pristine environment*, and *water quality*. Both *abundance of wildlife for hunting* and *wildlife viewing opportunities* were rated either four or five by approximately 65% of the operators. The features given the lowest ratings were; the *presence of old growth forests*, *opportunities to canoe and/or kayak*, and *unique plant and/or animals species*. These features were given a rating of four or higher by between 41% and 57% of operators. These responses clearly indicate that a pristine wilderness setting with abundant and high-quality natural resources is deemed to be most important by resource-based tourism operators.

The above results demonstrate that fishing and hunting are important activities to resource-based tourism operators. In addition, the surrounding environment, which includes pristine forests and clean water, provides the wilderness setting that tourists desire. The lower importance ratings for other non-consumptive features such as opportunities to canoe and/or kayak and the presence of unique flora and fauna suggest that ecotourists comprise the minority of guests at these resource-based tourism establishments.

When the above results are segmented by the accessibility type of the establishment, differences are observed in four of the features (see Figure B.3.1). *Quiet and peaceful surroundings*, *pristine environment*, *presence of old growth forests*, and the *quality of the fishery* are related to the remoteness of the

establishment. These features are most important to operators of remote establishments and least important to operators of road-based establishments. The remaining features received similar ratings for all accessibility types. These results demonstrate that the importance of a good-quality fishing experience in a pristine environment increases with remoteness.

Challenges to the Success of Resource-Based Tourism

In this question, operators were asked to state the likelihood of a series of activities negatively affecting their businesses. A five-point differential semantic rating scale ranging from very unlikely to very likely was employed and a total of 324 operators responded to this question. By far, the most anticipated challenges were associated with *timber harvesting operations* and *road-based recreationists*. Over 60% of respondents assigned a rating of at least four to these activities. The third most likely challenge was associated with *difficulty financing expansions/renovations* since over half of all operators assigned a rating of at least four to this item. The challenges operators least expected to encounter were; *difficulty attracting new visitors*, *competition from other resource-based tourism businesses*, and *mineral extraction activities*. Less than 45% of operators assigned a rating of four or greater to these potential challenges.

The above results demonstrate that resource-based tourism operators

perceive timber harvesting and access-related concerns to be the most significant challenges. Difficulty financing expansions/renovations was the only remaining challenge that over half of the operators expect to confront within the next five years.

When these results are segmented by accessibility, notable differences are observed (see Figure B.3.2). The challenges posed by *timber harvesting operations* and *road-based recreationists* increase in likelihood with decreasing accessibility. Slightly more than 90% of remote operators assigned a value of four or more to the likelihood of *timber harvesting operations* affecting their businesses within the next five years. In fact, 80% of remote operators assigned the highest rating of five. *Road-based recreationists* are expected to pose challenges to approximately 80% of remote operators, approximately 70% of semi-remote operators, and approximately 45% of road-based operators assigned a value of at least four to this item. In the case of road-based operators, their concerns with road-based recreationists are most likely associated with overcrowding and intensive use of the resource base.

The trends above are reversed for *difficulty financing expansions/renovations* and *competition from other resource-based tourism businesses*. Road-based operators rated these highest as approximately 60% believe that they will face *difficulty obtaining financing* and approximately 45% believe that they will be challenged by *competition from other businesses*. Surprisingly, the difficulties

anticipated with obtaining financing cannot be explained in terms of tenure. When the results for this item are segregated by tenure, operators with licences of occupation provided the highest ratings (over 50%), and operators with deeded property provided the second highest ratings (almost 50%). Thus, the operators with both the weakest and strongest forms of tenure provided the highest ratings. The expected challenge of *competition from other resource-based tourism businesses* may be higher for road-based operators because remote operators tend to receive a large proportion of repeat visitors (this was suggested as a potential indicator during the workshop). Unfortunately, this explanation cannot be further substantiated.

In general, the responses to this question demonstrate that the possibility of future timber-harvesting operations and access from road-based recreationists are sources of concern for resource-based tourism operators, particularly remote operators. *Difficulty obtaining financial capital, difficulty attracting new visitors* and *competition from other resource-based tourism businesses* are also viewed as potential challenges by the majority of operators. These three issues relate to the security of the business; thus, one can assume that the majority of operators feel that their businesses will succeed only if these challenges are overcome.

Past Changes to the Establishment

The next question asked operators what types of changes they have made to their establishment(s) in the past five years. Since this question was open-ended, operators were entitled to list any number of changes which ranged from upgrading the establishment through renovations to changes in marketing strategy. A total of 304 operators responded to this question and listed a total of 526 changes.

The two most common changes involved increased marketing and renovations. Responses belonging to these categories comprised between 26.4% and 30.2% of the total responses, respectively. Changes which involved expansions comprised 11.0% of the total responses and all remaining categories comprised less than ten percent of the responses each. This suggests that the priorities of resource-based tourism operators are most heavily focused on upgrading and renovating their establishments and improving their marketing efforts. The vast majority of responses in the latter category involved the creation of a website or other internet advertising.

When the above results are segmented by accessibility, few notable results were observed (see Figure B.3.3). The largest variations among accessibility types were observed for responses involving new services and renovations. For both of these categories, the number of responses was highest for semi-remote operators; however, the overall range among groups was found to be less than eight percent.

This suggests that past changes have been fairly consistent amongst establishments of varying levels of accessibility.

Future Changes to the Establishment

The next question asked operators what types of changes they plan to make at their resource-based tourism establishment(s) in the next ten years. As with the previous question, operators were entitled to list any number of changes. A total of 285 operators provided a response to this question and 382 changes were listed.

The most common response involved renovations as over one-third (36.9%) of the operators listed this as a future change. Responses involving expansions (i.e. increasing the bed capacity) and the promotion of ecotourism were next highest in frequency comprising 18.3% and 13.4% of responses, respectively. These results suggest that operators will continue to improve and expand their operations as they have in the past; however, they are becoming more interested in ecotourism.

When the above results are segmented by accessibility, differences are observed in the responses involving expansions and the promotion of ecotourism (see Figure B.3.4). Remote operators cited expansions more frequently (approximately ten percentage points) than either semi-remote or road-based

operators. The opposite is observed for the promotion of ecotourism as road-based operators cited this most frequently (approximately ten percentage points). This implies that while remote operators are looking at structurally expanding their operations to increase bed capacity, road-based operators are looking at diversifying to attract ecotourists and promote non-consumptive activities.

Relevance of CCFM Indicators for Tourism and Recreation

In the following question, operators were asked to rate the relevancy of the CCFM indicators that address tourism and recreation values. A five-point rating scale was employed which ranged from not at all relevant to very relevant with the middle value representing somewhat relevant. Unfortunately, this question was towards the end of the survey and the final section received a lower response rate than the earlier sections. Ratings were provided by 232 operators which may also suggest that the question created confusion. It was not expected that many tourism operators would be familiar with the concept of sustainability indicators; however, the CCFM indicators served to provoke thought for the second part of the question.

Almost two-thirds of operators provided ratings of at least four for the indicators pertaining to *contribution to gross domestic product (GDP) of non-timber sectors of the forest economy, total expenditures on activities related to non-timber*

use, availability of recreational opportunities, and *area and percentage of protected forest by degree of protection* (see Table B.3.5). For *total employment in all forest-related sectors and memberships* and *expenditures on forest recreation-oriented organizations and clubs*, approximately 40% of operators provided relevancy ratings of four or greater.

When these results are segmented by accessibility, notable differences are observed for two indicators. Operators of remote establishments assigned higher ratings for the *contribution to gross domestic product (GDP) of non-timber sectors of the forest economy*, and *area and percentage of protected forest by degree of protection*. Since remote operators are most concerned with the effects of timber harvesting, it makes sense that they view protected areas as being relevant. It is uncertain why these operators would view the contribution to GDP as being more relevant than operators of semi-remote or road-based establishments. Perhaps remote operators view their businesses as being more lucrative and, therefore, contributing more to the GDP.

Suggested Improvements to the Indicator List

A total of 71 operators suggested improvements to the CCFM list of indicators. These indicators can be segregated into five general categories: economic variables; ecological variables; access/aesthetic related variables; social

variables, and miscellaneous variables. Economic variables were the most common (32% of all suggestions) and long-term economic comparison between tourism and timber harvesting was the most common response. Operators feel that tourism generates more revenue than timber harvesting when the comparison is made over many decades for specific forest management areas. Other types of responses included the percent of revenue spent locally.

Access/aesthetics-related variables comprised 29% of all suggestions. Operators suggested enforcement of road closures, the long-term impacts of roads, buffer sizes, and the number of remote operations remaining as possible indicators. Although some operators mentioned that roads were a positive feature in that they increased recreational opportunities, most operators expressed discontent with this aspect of timber harvesting.

The third most common theme involved ecological variables (20% of all suggestions). As one would expect, operators identified impacts on fish, wildlife and water quality as indicators of the sustainability of resource-based tourism. Social variables comprised the next theme (9% of all suggestions). Common indicator suggestions included the level of cooperation between timber and tourism, and the extent that decision-making processes are conducted at a local level. The remaining portion of the responses were miscellaneous comments that did not fit into one of the above classifications. A complete list of the suggested

indicators/comments is included in Table B.3.6.

The above summary suggests that operators do not feel that economic comparisons between timber harvesting and tourism are fair or reflective of the true contribution of each industry. Economic indicators for resource-based tourism should focus on the economic contributions and impacts of this industry, especially at local and regional levels. Direct comparisons between industries are disliked by operators since it emphasizes the relative value of tourism rather than the actual long-term value. In addition, the indicator framework must address access, aesthetic and ecological concerns. Clearly, indicators related to these types of values are important to resource-based tourism operators and should be emphasized.

Prevention of Negative Environmental Impacts

To gain an understanding of tourism operators' perceived impacts of resource-based tourism, operators were asked to list steps they have taken to prevent negative impacts on the environment. A total of 242 operators responded to this question and listed a total of 520 preventative steps.

The most common response (20.6% of the total) involved waste management activities (see Table B.3.7). For example, some operators stated that they managed a waste disposal site, and remote operators stated that all garbage

was flown out to a proper waste disposal site. Catch and release fishing was a common response and accounted for approximately 18% of all responses. Education of guests and miscellaneous responses comprised the next largest categories with approximately 12% of the total each. The miscellaneous responses were extremely diverse and therefore difficult to categorize. Responses included the conversion to solar power or other alternative energy sources, protection and restoration of riparian areas, no tree cutting, fire prevention and enforcement of fire bans, adherence to provincial environmental and natural resource policies, and fishing at a variety of lakes.

When the above results are segmented by accessibility, only small differences are observed. The most notable difference was observed for the education-of-guests category. Road-based operators cited this activity most frequently (15%), followed by remote operators (10.2), and semi-remote operators (4.2%). In fact this trend is repeated in the overall number of responses as road-based operators provided more responses (45.6% of the total). Responses of semi-remote operators accounted for less than 20% of the total. This suggests that the environmental awareness of a resource-based tourism operator and the accessibility of the establishment are not directly related.

Willingness to Provide Information

In the following question, operators were asked to state their willingness to provide information regarding their establishments for the purpose of monitoring the sustainability of resource-based tourism. With the caveat of ensuring confidentiality, operators were specifically asked if they would supply information to either/or both NOTO and OMEDTT (Ontario Ministry of Economic Development, Trade and Tourism). Economic data are emphasized since it is believed that such data are considered to be more sensitive and private. In addition, a balance of comparative type variables (e.g. percentage increase in visitors) was blended with actual variables (e.g. number of visitor days) to determine if tourism operators are more reluctant to provide more specific data.

A total of 289 operators responded to this question. The majority (over 60%) of operators stated that they would provide NOTO with information about all nine variables. Operators were most willing to provide information on the *percentage of repeat visitors*, the *percentage increase in visitors*, the *number of visitor days per season*, *harvest levels of fish/wildlife*, *expenditures of tourism operators in local area/region/province,* and *person-days of employment* (see Table B.3.8). As expected, operators were least willing to provide information on *total wages paid to employees*, the *appraised value of the establishment*, and the *gross revenue generated by the establishment*. These results suggest that operators

would support the collection of data for the purpose of sustainability monitoring; however, certain specific economic data may be difficult to obtain. In general, operators of remote establishments were most willing to provide data. Remote operators likely have a better understanding of the value of such information because of their high level of involvement in forest management planning processes (Hunt et al., 2000).

A greater number of operators stated that they would provide information to both NOTO and the MEDTT than NOTO alone. Few operators (less than 10%) are willing to provide information solely to the MEDTT. Although the results demonstrate that the support of additional operators would be gained through NOTO involvement or endorsement, operators who are not members of NOTO might have less support for a NOTO-based initiative. This suggests that the collection of data for sustainability indicators should be collected by a group that represents the interests of tourist operators as a whole.

Satisfaction with Policies

In the final question, operators rated their satisfaction with a variety of provincial policies and practices. A total of 292 operators responded to this question which used a five-point differential semantic rating scale ranging from very unsatisfied to very satisfied with a neutral response in the middle. The responses

to this question are useful in determining the social and political factors that an indicator framework should address.

As seen in Table B.3.9, over two-thirds of operators were somewhat dissatisfied with *hunting regulations (tag allocations)*. The majority of operators were dissatisfied with *restrictions regarding lake access* (59.2% assigned a rating of two or less), and *policies regarding timber harvesting* (57.0% assigned a rating of two or less). Operators also expressed dissatisfaction with the *promotion of the area by government agencies* (49.5% assigned a rating of two or less), and *tenure agreements with the province* (40.6% assigned a rating of two or less). In fact, operators were generally dissatisfied with all government-related items suggesting that the relationship between government agencies and tourism operators is tenuous.

Several differences in satisfaction ratings between the accessibility types were noted (see Table B.3.9). The most significant differences are observed for *tenure agreements with the province*, *restrictions regarding lake access*, *bed capacity for tourism accommodations*, and *provincial policies regarding timber extraction*. For each of these items, satisfaction levels increased with increasing accessibility. The difference in rating for tenure arises since road-based establishments are more likely to have deeded property than remote establishments. The results regarding access restrictions and timber extraction

reaffirm previous observations that these issues are more relevant to remote operators.

From the above results it is clear that resource-based tourism operators have a turbulent relationship with government agencies. They are generally dissatisfied with policies that affect their operations and the level of discontent is amplified by increasing remoteness. Despite the fact that public consultation is an important aspect of political processes such as land-use planning, it is not effective at alleviating the concerns of resource-based tourism operators as a whole. Many of the policies evaluated in this question have serious implications for tourism operators and it is important that the causes of low satisfaction levels be understood to improve the fairness of related planning processes.

Indicator Framework

Indicators of the sustainability of resource-based tourism must take into account the external and internal variables that affect the industry. External variables such as wildlife management policies, and the effects of competing land-uses are beyond the control of the tourism industry.

Conversely, tourism operators can control internal variables that pertain to the effects of the industry on itself. For example, tourism operators can control capital investments, waste management, and impacts on fisheries. Such factors

have the potential to affect the environment in which they operate and/or the overall success of their businesses.

The indicators listed below address both types of variables and are intended to reflect a wide range of sustainability issues. Unlike more urban forms of tourism, resource-based tourism depends on plentiful natural resources and a pristine environment. This is why forest and economic indicators tend to dominate the framework. In Table 2, the preliminary indicators are listed with the associated value, the source of the indicator, and a brief explanation of the indicator.

Table 2: Preliminary Indicators of Sustainable Resource-Based Tourism

	Indicator	Value	Source	Explanation
1	populations/indices of vulnerable, threatened, endangered (VTE) species	species diversity	CFS, 1995	VTE species are at risk of extinction and their populations provide a measure of risk of loss of diversity attributes; may be of interest to ecotourists
2	population/indices of selected species	species diversity	CCFM, 1995	these species are important to monitor for a variety of social, economic, and ecological reasons
3	habitat quality and quantity for above species	species diversity	CCFM, 1995	habitat is a major determinant of wildlife abundance and population levels
4	proportion of forest area in each cover and age-class type	ecosystem diversity	CFS, 1995	each cover type and age class supports a different seral stage and mixture of species
5	water quality (e.g. turbidity, temperature, nutrients, etc.)	water quality	workshop/ survey	water quality is vital for tourism, to sustain fish and wildlife, drinking water, and water-based recreational pursuits
6	proportion of watercourses where timber is harvested to water's edge	water quality/ aesthetics/ ecosystem diversity	Wedeles et al., 1998	lack of sufficient buffers can have ecological and social impacts (aesthetics); riparian ecosystems often support a large diversity of plants and animals

7	area of forest not satisfactorily regenerated (NSR)	ecosystem productivity/ aesthetics	Wedeles et al., 1998	measures extent to which humans and nature are able to replace forest cover lost to various disturbances
8	number of roads creating access to formerly remote or semi-remote lakes	remoteness/ aesthetics	workshop/ survey	access diminishes the quality of the remote experience for guests; roads can also lead to land-use conflicts between various recreational groups
9	proportion of landscape within 500 m of shores of tourism lakes clear-cut within past 5 years	remoteness/ aesthetics	workshop/ survey	affects perception of wilderness by tourists; impacts aesthetics of forest surrounding lake; recently cut areas are particularly detrimental since they may be obvious
10	median buffer sizes between clear-cuts and tourism lakes and rivers (in areas under forest management agreements)	remoteness/ aesthetics	survey	indicates degree of protection afforded to aesthetics of tourism lakes and rivers
11	median size roadless areas	remoteness/ aesthetics/ ecosystem diversity	Wedeles et al., 1998	measure of ecosystem fragmentation; roads introduce large numbers of humans to forest areas and are often built to facilitate resource extraction; roads increase access to previously remote or semi-remote tourism lakes
12	satisfaction levels of tourists/ recreationists (via survey)	satisfaction of tourists	VonMirbach, 1999	measure of quality of opportunities; will influence whether tourists visit and return to an area

13	quality of guest experience at remote and semi-remote tourism establishments	satisfaction of tourists	survey	perceptions of wilderness by guests will influence their decision to visit and return to an area or establishment
14	number of recreation and tourism businesses by category of accommodation capacity	competitiveness	workshop	indicates growth/decline of tourism, opportunities available for people to use the forest
15	number of visitor-days at recreation and tourism facilities	competitiveness	workshop	amount of actual use of facilities
16	revenue generated by the resource-based tourism industry	competitiveness	CCFM, 1995	economic impact of resource-based tourism
17	economic value of consumptive goods and recreational activities provided by the forest, including motorized activities	economic impact/ competitiveness	CCFM, 1995	value of activities such as hunting, fishing and snowmobiling; expenditures by recreationists are important to the local economy
18	economic value of non-consumptive goods and recreational activities provided by the forest, excluding motorized activities	economic impact/ competitiveness	CCFM, 1995	value of activities such as canoeing, hiking, and cross country skiing; expenditures by recreationists are important to the local economy
19	total wages paid and total number of jobs attributed to resource-based tourism operations	economic impact/ community stability	workshop, survey	measure of economic impact of the resource-based tourism industry

20	expenditures related to infrastructure (e.g. expansions, renovations)	competitiveness	Williams et al., 1998	measure of confidence level of tourism operators and individual success of a business; demonstrates profitability
21	resource base available for selected recreation activities (e.g. canoe routes, km of hiking trails, campsites, area of land accessible to hunters, etc.)	recreational opportunities	VonMirbach, 1999	measure of opportunities for people to participate in resource-based tourism and recreation; proxy for value of outdoor recreation
22	percent of forest area in parks, protected and designated recreational areas	recreational opportunities	CCFM, 1995	these areas experience few extractive activities and are popular destinations for tourists; importance of ecological and social role depends of level of protection and use
23	satisfaction of tourism operators with forest management planning process and outcomes	fairness of forest management	survey	indicates effectiveness of forest management planning at integrating input from tourism operators and addressing the concerns of this group
24	perceived effectiveness of Local Citizens' Committee (LCC) via self-evaluation	fairness of forest management	Wedeles et al., 1998	indicates effectiveness of forest management planning at integrating input from various stakeholder groups
25	Aboriginal satisfaction with forest and tourism management	fairness of forest management	Wedeles et al., 1998	indicates effectiveness of land-use planning at addressing Aboriginal concerns

26	Local residents' satisfaction with tourism-based economic opportunities	fairness of forest management	Wanlin et al., 1994.	indicates the satisfaction of local residents with the economic aspects of tourism and the degree to which tourism operations impact nearby communities

Framework Evaluation

The goal of the framework evaluation was to produce a comprehensive framework of high-quality indicators that will help to monitor sustainability in the resource-based tourism industry. The number of indicators comprising the preliminary framework is significantly greater than the quantity used in case studies by Consulting and Audit Canada (1995) because their process involved an evaluation and subsequent elimination of several indicators. In northern Ontario, a variety of indicators are necessary to reflect the unique relationship between the resource-based tourism industry and its surrounding environment. In addition, specific values that were deemed important by tourism operators were included in the framework.

On the other hand, the number of indicators is much less than included in the forest-oriented frameworks as this undertaking is focused on a single industry rather than forest management in general. Forest management includes a vast assortment of critical values whereas resource-based tourism is one of several components that the forest frameworks seek to address. Northern Ontario's resource-based tourism industry is a collection of relatively small operators and presently does not have the capability for data collection and analysis that other forest industries can assemble. Financial capital for such a venture is minimal and a concise framework has a greater potential of application. An important goal of this

research was to produce an indicator framework that is useful to the tourism industry and resource managers and this is best accomplished by integrating the various aspects of sustainability while remaining simple.

The following tables include the evaluations of each preliminary indicator. Six evaluation criteria were applied and these are: relevance to the associated value; sensitivity to change; availability of data; practicality of collecting and analyzing the data; understandability; and predictability.

Table Three: Evaluations of the Preliminary Indicators of Sustainable Resource-Based Tourism

Ecological Indicators: Species Diversity

1. Populations/indices of vulnerable, threatened, and endangered (VTE) species

Relevance to Value	Sensitivity to Change	Data Availability
high the loss of VTE species reduces overall diversity; such species may be of interest to tourists and may also be affected by tourism development	high the classification of these species is such because of their sensitivity to ecological stresses, human activities or natural disasters (CCFM, 1997)	moderate the OMNR prepares an annual index of vulnerable, threatened, endangered, and extinct species; data are most abundant for birds, mammals; less abundant for fish, plants, reptiles (Jackson, 1998)
Predictability	**Understandability**	**Practicality**
moderate models capable of predicting these populations exist; however, the population dynamics are often chaotic and the reliability of the models is questionable (Wedeles et al., 1998)	high most people can identify with this characteristic of biodiversity as it is commonly covered by the media as an environmental issue	low field monitoring efforts may be expensive since these species are obscure; a specialist may be required to collect and analyze the data (Wedeles et al., 1998)

2. Population/indices of selected species

Relevance to Value	Sensitivity to Change	Data Availability
high certain species of ungulates, fish, and birds are of significant importance to tourists participating in consumptive and non-consumptive activities	moderate depends on the species and cause of change; for example, some fish respond quickly to deteriorating water quality (e.g. Rainbow Trout)	moderate OMNR conducts population surveys on species such as moose and bear but population information is not available for other species such as fish (Jackson, 1998)
Predictability	**Understandability**	**Practicality**
moderate population dynamics models exist for many species and average populations of terrestrial species can be estimated from habitat supply; the accuracy of such models is variable (Wedeles et al., 1998)	high populations themselves will have more meaning when compared with targets or historical data; most people will understand the importance of various species and the implications of population variations	moderate would require considerable human and financial resources to conduct population surveys on each important species; the use of indirect indices of populations is a more practical alternative (CCFM, 1997)

Comments: species of significance to resource-based tourism require identification, especially those of interest to ecotourists; a group of species should be selected for each forest age class; selection should be based on: functional links between species (e.g. predator and prey), body size (to reflect various spatial scales),breeding/ feeding requirements, use of specialized habitat features, trophic levels and possible keystone roles (i.e. whether loss of the species would have an impact on several other species) (CCFM, 1997).

3. Habitat quality and quantity for the selected species

Relevance to Value	Sensitivity to Change	Data Availability
moderate habitat is a means to support a population and its availability affects wildlife populations over long periods	high responds quickly to management activity and natural factors; can be estimated rapidly; may have early warning value as habitat depletion may precede population declines	moderate data are available from the OMNR; habitat management for selected species is integrated into forest management planning; difficult to estimate habitat for generalists (e.g. bear) that do not depend upon a specific forest type (Wedeles et al., 1998)
Predictability	**Understandability**	**Practicality**
high habitat availability can be predicted using forest management plans and habitat supply models (more models are available for terrestrial than aquatic species)	high the quantity and quality of available habitat is understood by most people	high data collection is simplified by the availability of some data; for other species estimates would be obtained using models; this would require specialized software and knowledge

Comments: species of significant importance to resource-based tourism require identification, especially those of interest to ecotourists, further research regarding minimum habitat requirements is required to fully understand this indicator (Wedeles and Williams, 1999)

Ecosystem Diversity

4. Proportion of forest area in each cover and age-class type

Relevance to Value	Sensitivity to Change	Data Availability
high this indicator provides a useful quantitative description of the forest (Wedeles and Williams, 1999); however, using cover type and age class as an indicator of ecosystem diversity presents limitations since other forest attributes help determine species distribution and the availability of suitable wildlife habitat that are not addressed (Jackson, 1998)	moderate this indicator is slow to change in forest managed as sustained yield areas where a relatively consistent age class distribution is maintained; the sensitivity to change varies with management regimes and natural disturbances	high forest resource inventory (FRI) datasets include the dominant overstory species and age class; such data exist for areas where timber management occurs (Jackson, 1998)
Predictability	**Understandability**	**Practicality**
high given knowledge of forest management plans, predictions of future age class and cover type are possible	high this indicator is easily understood especially given the widespread publicity regarding old growth forests and biodiversity	high the data for the indicator in its present state are readily available and easily analyzed

Comments: more detailed classification systems which incorporate a mixture of physical and biological characteristics is considered to be more appropriate (Wedeles and Williams, 1999)

Water Quality

5. Water quality

Relevance to Value	Sensitivity to Change	Data Availability
high water quality is of great importance to tourism; it affects fisheries, aesthetics and the quality of several recreation opportunities	high certain parameters can be sensitive to changes in management (e.g. the nutrient level of lakes is affected by disposal of wastewater, turbidity will increase if soil erosion occurs)	moderate the Ministry of the Environment's Lakes Partnership Program collects data on water clarity and phosphorous at a variety of lakes in northern Ontario and the inclusion of additional lakes is possible (MOE, 1999)
Predictability	**Understandability**	**Practicality**
moderate effects of management actions and tourism development can be predicted through modelling (e.g. assimilative capacity models)	moderate not all water quality indicators are easily understood by the public (for example most people understand the concept of water clarity but may be unfamiliar with the term 'turbidity')	moderate should be limited to five or fewer parameters and waterbodies located within or adjacent to tourism or forest management areas to reduce costs; determining causal factors of changes may be difficult in some cases

Comments: specific parameters require identification: such parameters should be sensitive to changes in management practices. Examples of useful indicators are: clarity (using a secchi disk), phosphorous concentration, pH and temperature.

Water Quality and Aesthetics

6. Proportion of watercourses where timber is harvested to water's edge

Relevance to Value	Sensitivity to Change	Data Availability
high lack of protection of riparian areas has damaging effects on water quality through increased siltation and alterations of temperature; the aesthetic effects in tourism areas are significant and timber harvesting operations are a significant concern of tourism operators	high indicator is responsive to management actions	high data are available through forest management plans, obtainable through the OMNR or forest companies (Jackson, 1998)
Predictability	**Understandability**	**Practicality**
high predictable through the use of forest management plans for five-year periods; long-term forecasting can be accomplished through plans available from the timber company or through analysis of wood supply	high the ecological and aesthetic implications are easily understood	high this indicator is easily measured using GIS; inexpensive to analyze data

Comments: this indicator should focus on areas of interest to resource-based tourism

Ecosystem Productivity

7. Area of harvested forest not satisfactorily regenerated (NSR)

Relevance to Value	Sensitivity to Change	Data Availability
high regeneration practices affect the productivity of forest land and its ability to support wildlife and attract tourists; many forms of ecotourism may not coexist with areas that demonstrate the impacts of timber harvesting (Hunt et al., 1999b)	moderate area classified as NSR at any given time will be influenced by the forest management practices of previous years; the recovery from an NSR classification may take several years; changes in the area classified as NSR are not always the result of forest management; other factors include intensity of regeneration surveying (Jackson, 1998)	high the total area of forest classed as NSR is available from forest resource inventory (FRI) datasets which are available from the OMNR; FRI data are updated approximately every 5-6 years (to prepare forest management plans); also available from Annual Reports submitted by forest management agreement (FMA) holders to the OMNR (Jackson, 1998)
Predictability	**Understandability**	**Practicality**
moderate several factors may contribute to an area's NSR status (Jackson, 1998) which complicates the predictive capability of this indicator	high the relationship of this indicator to resource-based tourism is fairly clear and should be understandable to most people	high data collection can be expensive but is done on a routine basis; several years' data are required to detect the causes of the NSR status (Wedeles et al., 1998)

Comments: NSR basically means that regeneration efforts have failed to produce a forest or stand which is stocked to suitable densities (Wedeles et al., 1998); this may affect present and future tourism development

Social Indicators: Aesthetics and Accessibility

8. Number of roads creating access to formally remote or semi-remote tourism lakes

Relevance to Value	Sensitivity to Change	Data Availability
high many species of wildlife are recognized as being susceptible to over-harvest in areas where high road densities are experienced (OMNR, 1988); access concerns are important to resource-based tourism operators	high this indicator is very responsive to management action	high information regarding roads in forest management areas is available from the OMNR from the Annual Reports and Forest Management Plans submitted by license holders; also exists in digital format (GIS) available from timber companies (Jackson, 1998)
Predictability	**Understandability**	**Practicality**
high outlined in forest management plans for five-year periods, long-term forecasting is included in plans available from the timber company or can be obtained through analysis of wood supply	high the importance of this indicator to remote and semi-remote tourism is understood by those with knowledge of the industry	high this indicator is easily measured; since data are readily available it would also be inexpensive; analysis is straightforward

9. Proportion of landscape within 500 m of shores of tourism lakes clear-cut within past five years

Relevance to Value	Sensitivity to Change	Data Availability
high clear-cutting near the shores of tourism lakes can affect water quality and the tourism experience though diminished aesthetic quality of the forest	high this indicator is very responsive to changes in management actions	high information regarding recent harvests in forest management areas is available from the OMNR from the Annual Reports and Forest Management Plans submitted by license holders; also exists in digital format (GIS) available from timber companies (Jackson, 1998)
Predictability	**Understandability**	**Practicality**
high outlined in forest management plans for five-year periods, long-term forecasting is included in plans available from the timber company or can be obtained through analysis of wood supply	high the importance of this indicator to resource-based tourism is easily understood; the rationale behind 500 m distance and five-year timeline may be unclear to some people	high this indicator is easily measured; since data are readily available it would also be inexpensive; analysis is straightforward

Comments: the value of 500 m is derived from a NOTO discussion paper in which Tourism Management Areas were proposed for Northern Ontario (NOTO, 1998)

10. Median buffer sizes between clear-cuts and tourism lakes and rivers (in areas under FMPs)

Relevance to Value	Sensitivity to Change	Data Availability
high buffers around waterbodies improve the aesthetic value and provide protection of water quality	moderate the median value will be more sensitive to change at a finer scale (e.g. forest management area); broad-scale analysis could potentially mask impacts	high information regarding buffers in forest management areas is available from the OMNR from the Annual Reports and Forest Management Plans submitted by license holders; also exists in digital format (GIS) available from timber companies (Jackson, 1998) however, tourism lakes and rivers would require identification
Predictability	**Understandability**	**Practicality**
high outlined in forest management plans for five-year periods, long-term forecasting is included in plans available from the timber company or can be obtained through analysis of wood supply	high the aesthetic and ecological value of buffers is easily understood	high this indicator is easily measured; since data are readily available it would also be inexpensive; analysis is straightforward

Comments: clarification of what constitutes a tourism lake/river is required

11. Median size roadless areas

Relevance to Value	Sensitivity to Change	Data Availability
high roads have a negative impact on forest aesthetics and contribute to ecosystem fragmentation; fragmentation of formerly continuous landscapes is considered to be one of the primary threats of forest biodiversity (Jackson, 1998)	high changes in management activity would be readily apparent	high information regarding roads in forest management areas is available from the OMNR from the Annual Reports and Forest Management Plans submitted by license holders; also exists in digital format (GIS) available from timber companies (Jackson, 1998)
Predictability	**Understandability**	**Practicality**
high outlined in forest management plans for five-year periods, long-term forecasting is included in plans available from the timber company or can be obtained through analysis of wood supply	high the value of roadless areas is apparent to most people since it enhances wilderness experiences and makes an area truly remote; the ecological benefits of roadless areas are also easily understood	high this indicator is easily measured; since data are readily available it would also be inexpensive; analysis is straightforward

12. Satisfaction levels of tourists/recreationists

Relevance to Value	Sensitivity to Change	Data Availability
high satisfaction levels are essential to the success of tourism establishments	high changes in management of natural resources or the operation of a tourism establishment will have immediate effects on the perceptions of tourists	moderate data are not presently collected on this indicator; surveys of tourists have been conducted but have been focused on specific groups (e.g. Haider and Carlucci, 1994)
Predictability	**Understandability**	**Practicality**
low a decision-support system for remote tourism (Hunt and Haider, 1998) enables the prediction of changes of market share given changes in management actions that typically affect remote operations; a decreasing market share indicates diminished quality of the guest experience; no models for determining the satisfaction levels of non-remote tourists given changes in management exist	high the idea that only satisfied tourists will return to a destination area is logical and easily understood; tourism operators would be interested in identifying the motivations for clients not returning to their establishments or a tourism area	high since this indicator would be survey-based, this would require the development of a standard survey for distribution to guests by tourism operators

Comments: determining satisfaction level has limited use; the factors behind the satisfaction levels are important to the sustainability of resource-based tourism

13. Quality of guest experience at remote and semi-remote tourism operations

Relevance to Value	Sensitivity to Change	Data Availability
high a high-quality guest experience is essential to the success of tourism establishments	high changes in management of natural resources or the operation of a tourism establishment will have immediate effects on the perceptions of guests	moderate data are not presently collected on this indicator; surveys of tourists have been conducted but have been focused on specific groups (e.g. Haider and Carlucci, 1994)
Predictability	**Understandability**	**Practicality**
moderate a decision-support system for remote tourism is under development (Haider et al., 1996); this model enables the prediction of changes of market share given changes in management actions which typically affect remote operations; a decreasing market share indicates diminished quality of the guest experience; no testing of the accuracy of the DSS has been conducted	high the indicator as stated is easily understood	moderate since this indicator would be survey-based, this would require the development of a standard survey for distribution to guests by tourism operators; completed surveys would have to be collected and analyzed by qualified personnel; no testing of the accuracy of the DSS has been conducted

Economic Indicators

14. Number of recreation and tourism businesses by category of accommodation capacity

Relevance to Value	Sensitivity to Change	Data Availability
moderate this indicator is important to the overall strength of the resource-based tourism industry	moderate the indicator is sensitive to a variety of factors including economic health; changes will be more obvious over longer periods	moderate available for those establishments licensed through the Ministry of Northern Development; however, not all guiding/touring businesses are licensed (VanWagoner, pers. comm., 1999)
Predictability	**Understandability**	**Practicality**
low there are no models available to predict this indicator given changes in management practices	high the link between the number of businesses in operation and the prosperity of the tourism industry is easily communicated and understood	moderate analysis would require the development of an inventory; some accommodation-based operations are licensed by the MEDTT but outfitter/guiding services are not

Comments: the indicator should include businesses that offer outfitting and guiding services despite the fact that they do not offer formal accommodations

15. Number of visitor-days at recreation and tourism facilities

Relevance to Value	Sensitivity to Change	Data Availability
high this indicator influences the competitiveness and viability of the resource-based tourism industry	moderate indicator will be sensitive in that dissatisfied customers are unlikely to return to an area and satisfied customers will return; however, it might take several years for an area to recover from a poor reputation or develop a good reputation	moderate data are available for most parks and protected areas and from most individual tourist operators; however, no attempts have been made to aggregate the data
Predictability	**Understandability**	**Practicality**
low this indicator is difficult to predict since several factors influence the tourism industry that are beyond the scope of management areas (e.g. exchange rates, weather, economic conditions)	high this indicator is easily understood	moderate most tourism operators are willing to disclose this information provided confidentiality can be ensured

16. Revenue generated by the resource-based tourism industry

Relevance to Value	Sensitivity to Change	Data Availability
high this indicator demonstrates the economic importance of resource-based tourism	high this indicator is subject to influence by several variables such as economic health, exchange rates, and weather conditions	moderate empirical data are not collected; however, total sales in resource-based tourism can be obtained through MEDTT's Economic Impact Model (MEDTT, 1997)
Predictability	**Understandability**	**Practicality**
moderate predictable through MEDTT's Economic Impact Model (MEDTT, 1997); the accuracy of the model has not been verified	high this indicator is simple and the importance is obvious	moderate the majority of tourism operators are willing to provide the data provided confidentiality can be ensured (refer to survey results); if data collection is problematic, an estimate can be obtained through the MEDTT model

Comments: this indicator should be rephrased to read either total sales or total income since these values are more easily collected from tourism operators and can be obtained through MEDTT's model

17. Economic value of consumptive goods and recreational activities provided by the forest, including motorized activities

Relevance to Value	Sensitivity to Change	Data Availability
high this indicator demonstrates an aspect of the economic and social value of resource-based tourism	moderate this indicator is subject to influence by several variables such as economic health, exchange rates, and weather conditions	moderate MEDTT has previously collected data on the expenditures of tourists that are segregated by activity but these data are not collected on a routine basis and are at a regional level (OMEDTT, 1998)
Predictability	**Understandability**	**Practicality**
moderate predictable through OMEDTT's Economic Impact Model (OMEDTT, 1998); the accuracy of the model has not been verified	high this indicator is simple and the importance is obvious	moderate data are expensive to collect and analyze, especially at a local level (Wedeles et al., 1998)

Comments: data pertaining to total expenditures related to consumptive activities would be more easily collected: data on total expenditures by resource-based tourists is available through the OMEDTT on a periodic basis through the International Travel Survey and Canadian Travel Survey; the data are available at the regional level (OMEDTT, 1998)

18. Economic value of non-consumptive goods and recreational activities provided by the forest, excluding motorized activities

Relevance to Value	Sensitivity to Change	Data Availability
high this indicator demonstrates an aspect of the economic and social value of resource-based tourism	moderate this indicator is subject to influence by several variables such as economic health, exchange rates, and weather conditions	moderate OMEDTT has previously collected data on the expenditures of tourists that are segregated by activity but these data are not collected on a routine basis and are at a regional level (OMEDTT, 1998)
Predictability	**Understandability**	**Practicality**
moderate predictable through OMEDTT's Economic Impact Model (OMEDTT, 1998), the accuracy of the model has not been verified	high this indicator is simple and the importance is obvious	moderate data are expensive to collect and analyze, especially at a local level (Wedeles et al., 1998)

Comments: data pertaining to total expenditures related to non-consumptive activities would be more easily collected; data on total expenditures by resource-based tourists is available through the OMEDTT on a periodic basis through the International Travel Survey and Canadian Travel Survey; the data are available at the regional level (OMEDTT, 1998)

19. Total wages paid and total number of jobs attributed to resource-based tourism operations

Relevance to Value	Sensitivity to Change	Data Availability
high employment is an important economic benefit of the resource-based tourism industry	moderate will not readily respond to changes in overall forest/tourism management (Wedeles et al., 1998), will respond to growth in the tourism industry at a local level	moderate OMEDTT has previously published data on the total number of direct and indirect jobs created by resource-based tourism; information on total wages paid would require the cooperation of tourism operators since this is not easily extracted from Statistics Canada data (VanWagoner, pers. comm., 1999)
Predictability	**Understandability**	**Practicality**
moderate predictable through OMEDTT's Economic Impact Model (OMEDTT, 1998); the accuracy of the model has not been verified	high the economic benefits of employment are easily understood	high according to the survey results, most tourism operators would be willing to provide these data; data analysis is straightforward

Comments: the indicator as worded does not differentiate between part-time and full-time jobs, or seasonal and year-round jobs; the indicator should focus on total wages paid as the second component is difficult to interpret

20. Expenditures related to infrastructure at tourism establishments

Relevance to Value	Sensitivity to Change	Data Availability
moderate indicates the current financial health and future competitiveness of tourism establishments; operators earning high profits are likely to reinvest in their establishments to increase guest satisfaction and future revenue	high tourism operators who experience decreases in business are not likely to invest in infrastructure; capital expenditures will likely follow shortly after a successful tourism season	moderate there are no readily available data sources for this indicator; however, the majority of tourism operators stated that they would be willing to provide this type of data
Predictability	**Understandability**	**Practicality**
moderate no method of predicting this indicator exists; however, most operators plan for future improvements as was demonstrated in the survey	high most people recognize that this indicator demonstrates the success and competitiveness of a business	high collecting and analyzing data for this indicator are practical given that tourism operators have stated a willingness to provide this type of data; a mechanism for annual reporting would be required

21. Resource base available for selected recreation activities

Relevance to Value	Sensitivity to Change	Data Availability
high tourism cannot be sustained without an adequate resource base for various activities; this indicator is of present and future importance as it incorporates areas of potential use rather than measuring only present use of specific areas	moderate management actions have the capability of creating and damaging recreational areas; however, the indicator is subject to interpretation in that logging roads increase opportunities for some activities and decrease the opportunities for others	low there is no cohesive inventory of the resource base for a variety of recreational opportunities; maps are produced by interest groups for activities such as snowmobiling, hiking, and mountain biking; the OMNR has mapped canoe routes and includes some campsites on provincial series maps
Predictability	**Understandability**	**Practicality**
moderate predicting the availability of recreational opportunities is possible through the use of forest management plans; predicting the levels of use would be more difficult although demographics may provide insight into large-scale trends (Wedeles et al., 1998)	high the need of resource-based tourism for an adequate resource-base that supports recreational activities is logical and easily communicated	moderate substantial efforts would be required to assimilate the data available from several sources; keeping the data updated would be difficult since the resource base is large and scattered (Wedeles et al., 1998)

Comments: specific activities need to be identified and should include both consumptive and non-consumptive recreation types

22. Percent of forest area in parks, protected and designated recreational areas

Relevance to Value	Sensitivity to Change	Data Availability
high parks and protected areas are popular destinations for tourists, especially ecotourists; the importance of such areas is linked to low desirability to recreate in logged settings (Hunt et al., 1999b)	moderate sensitive only to changes in land-use designations; such changes do not occur on a regular basis	high data are available from the OMNR on provincial series maps
Predictability	**Understandability**	**Practicality**
low the value of this indicator depends on political decisions which are generally not predictable	moderate not all individuals understand the value of protected areas for providing present and future tourism opportunities; this issue was vigorously debated during the Lands for Life process	high data for this indicator are easily collected and analyzed since land-use designations are clearly delineated

Comments: the spatial application of this indicator is limited to a unit the size of an administrative district or region; smaller units may not contain any parks, protected or designated recreational areas

23. Satisfaction of tourism operators with forest management planning process and outcomes

Relevance to Value	Sensitivity to Change	Data Availability
high tourism represents a significant industry in northern Ontario and it is essential that the forest management planning process include opportunities for meaningful involvement	high shortcomings in the planning process and outcomes will quickly result in frustration and dissatisfaction amongst tourism operators	low these data are not currently collected on a routine basis (Hunt et al., (2000) surveyed tourism operators regarding this issue)
Predictability	**Understandability**	**Practicality**
low level of predictability is low; many variables are involved in the formation of human opinions	high the importance of tourism operators' satisfaction in assessing the fairness of forest/tourism management is clear since they are a major stakeholder in several planning areas	high evaluation of satisfaction would be survey-based and would require the development and analysis of appropriate questions

24. Perceived effectiveness of Local Citizens' Committee (LCC)

Relevance to Value	Sensitivity to Change	Data Availability
high indicates the effectiveness and fairness of the forest management planning process as viewed by members of LCCs; also provides insight into the state of relationships among stakeholder groups in a forest management area	moderate shortcomings in the planning process will quickly result in frustration and dissatisfaction amongst LCC members; however, the nature of some personalities can lead to perpetual dissatisfaction	moderate LCCs do not conduct self-evaluations on a consistent basis ; however, this could be easily accomplished through the development and administration of a survey
Predictability	**Understandability**	**Practicality**
low level of predictability is low; many variables are involved in the formation of human opinions	high dissatisfaction within LCCs is a recognized problem by participants of forest management planning; most people would agree that LCC effectiveness demonstrates the utility of a multi-stakeholder, participatory process	high evaluation of this indicator would comprise a survey administered to LCC participants during forest management planning and after the presentation of the final plan; collecting the data could be easily arranged (Wedeles et al., 1998)

25. Aboriginal satisfaction with forest and tourism management

Relevance to Value	Sensitivity to Change	Data Availability
moderate Aboriginals represent a significant proportion of the population in northern Ontario; their perceptions are useful in evaluating the overall fairness of management activities; however, the link between tourism management and Aboriginal communities is relatively weak	high since this indicator deals with the perceptions of individuals, it would be very sensitive to change as people are alert to their surrounding environment, especially when unique concerns exist	low no data are currently collected on a regular basis
Predictability	**Understandability**	**Practicality**
low level of predictability is low; many variables are involved in the formation of human opinions	moderate the importance of Aboriginal satisfaction in assessing the fairness of forest/tourism management is clear; however, the link to the sustainability of resource-based tourism may be more difficult for some to understand since there is little awareness of the relationship between tourism and Aboriginal issues	moderate assessment is possible through interviews and/or surveys with First Nations community representatives; data collection should focus on communities located in close proximity to identified tourism areas (Wedeles and Williams, 1999)

Comments: data collection should focus on communities located in close proximity to identified tourism areas

26. Local residents' satisfaction with tourism-based economic opportunities

Relevance to Value	Sensitivity to Change	Data Availability
moderate lack of local employment opportunities in tourism is a source of conflict in northern Ontario communities; community sustainability should be incorporated into tourism management	moderate changes in hiring practices might help to increase local satisfaction with economic opportunities	low data on this indicator are not presently collected
Predictability	**Understandability**	**Practicality**
low this indicator would be difficult to predict since an increased effort to hire local residents will not necessarily succeed; some communities may lack the qualified personnel that the tourism industry requires	moderate most people will understand that employment of local residents could help to alleviate conflicts with tourism operators; however, remote operations are isolated from communities and cannot provide the same opportunities	high data collection for this indicator could be survey-based and a survey instrument requires development; the survey should be administered to community leaders or a random sampling of the adult population could be conducted

Comments: data collection should focus on communities located in close proximity to identified tourism areas

Chapter 5: Discussion

Workshop and Survey

Through the workshop and survey, tourism operators expressed concerns pertaining to the sustainability of resource-based tourism and identified features that are important to their business endeavours. This information was used to develop the preliminary indicators of resource-based tourism and evaluate the indicators on the basis of relevance to the associated value, sensitivity to change, availability of data, practicality, understandability, and predictability. The input from tourism operators ensured that the revised indicator framework would incorporate the unique characteristics of northern Ontario's resource-based tourism industry.

The workshop was an informal process that enabled a small group of tourism operators to express their opinions regarding sustainability issues. Operators demonstrated a keen interest in the establishment of an indicator monitoring program and stated a willingness to provide data for this purpose. An examination of the CCFM indicators resulted in suggestions for indicators in which dominant themes were the need for long-term monitoring and less emphasis on direct comparisons between dissimilar industries such as timber harvesting and tourism.

It was acknowledged that several features are important to individual resource-based tourism establishments. The most important features identified by

workshop participants related to the aesthetic qualities of remoteness, healthy fish and wildlife populations, and the opportunity to provide meaningful input into forest-management planning. When asked to identify the environmental impacts of their tourism operations, responses ranged from waste management issues to increasing environmental awareness through guest education. It was admitted that not all tourism operators are environmentally conscious and that an evaluative process with penalties for mismanagement of natural resources would benefit the industry as a whole.

The survey was a means to obtain a more quantitative analysis of the resource-based tourism industry and contact a large number of tourism operators. Many of the questions were repeated from the workshop and similar results were obtained through both forums. For example, the surveyed operators identified a high quality fishery, water quality and peaceful and pristine surroundings as being extremely important to the success of their establishment(s). Operators also assigned a high level of importance to abundance of wildlife for hunting and viewing opportunities. This suggests that fishing and hunting are the central activities in northern Ontario's resource-based tourism industry. The indicators reflect this; however, literature suggests that ecotourism will increase in the future and relevant indicators must incorporate non-consumptive values.

A recurring theme in the survey was the perceived or actual threat posed by timber harvesting operations, road-based recreationists, and difficulty financing expansions/renovations. Tourism operators feel that timber management issues are not being adequately addressed and are dissatisfied with related government policies. Difficulty financing expansions/renovations suggests an insecure business environment, so the expenditures related to infrastructure at establishments was retained as an economic indicator. The survey results suggested that renovations and upgrading have been and will continue to comprise a large proportion of the overall changes to individual establishments.

When asked to comment on the relevancy of the CCFM indicators for tourism and recreation, most operators felt that the indicators were appropriate. However, several operators suggested improvements that related to economic, biological and social aspects of resource-based tourism. Common suggestions included the use of long-term economic comparisons between timber harvesting and tourism, enforcement of road closures and buffer sizes, and monitoring of impacts on wildlife and water quality. Biological and aesthetic concerns are of utmost importance to tourist operators and the indicator framework reflects these concerns. Economic indicators that focus on comparisons with other industries were not included because tourism operators view these as unfair. Consequently, economic indicators are specific to resource-based tourism.

In general, tourism operators are willing to provide information for the purpose of monitoring sustainability indicators. Confidentiality is essential to operators and there is the least willingness to provide specific economic data (e.g. total wages paid to employees) to a government agency, in this case the Ministry of Economic Development, Trade and Tourism. The results suggested that the endorsement of an indicator initiative from NOTO and other tourism organizations would increase the level of participation amongst tourism operators.

In summary, the results of the workshop and survey provided guidance for the selection of indicators and assisted with the evaluations. Segmenting the results by accessibility type demonstrated that there are differences between remote, semi-remote, and road accessible operations and that this should be an important consideration. Tourism operators understand the issues that affect the sustainability of their operations and expressed a high level of concern for the future well-being of the industry.

Indicator Evaluations

The preceding indicator evaluations were intended to determine the usefulness of each indicator for monitoring the sustainability of resource-based tourism. As with other evaluation processes, some indicators are accepted, require modification, require further research, or are rejected (Wedeles et al., 1998;

Wedeles and Williams, 1999; Woodley et al., 1999). The preliminary indicators selected for this framework made use of the knowledge gained through previous evaluations and do not include formally rejected indicators or the original wording of those that have been changed. Therefore, few of the indicators of sustainable resource-based tourism have been rejected since their importance has been previously documented. In this section the qualities of each indicator are discussed with a final recommendation to either accept, modify or reject the indicator..

Recommendations Based on Indicator Evaluations

1. Populations/indices of vulnerable, threatened, and endangered (VTE) species

Populations/indices of VTE species portrays a characteristic of forest biodiversity with which most people can identify. Although the surveyed tourism operators assigned a relatively low importance rating for the presence of unique flora and fauna, such species may be more meaningful to ecotourists. Despite the fact that this form of tourism currently represents a small portion of the industry in northern Ontario, it is expected to increase and this indicator may become more significant. However, it seems that as scarcity of species increases, its value to tourists tends to increase (e.g. rare bird species are of greater interest to birdwatchers than common species). Application of this indicator to resource-based tourism is further complicated by the lack of research on the effects of

tourism on VTE species. It is recommended that this indicator be retained until future research clarifies the relationship between resource-based tourism activity and VTE species. In many areas, VTE species are adversely affected by tourism activity and this may also apply to northern Ontario.

2. Population/indices of selected species

It is widely recognized that consumptive activities form the basis for resource-based tourism in northern Ontario. Since tourism operators assigned high importance ratings for fishing and hunting opportunities, this indicator should focus on the species relevant to these recreational activities. Population levels affect tag allocations, and this is of great concern to operators. In addition to those species consumed, tourism activity has the potential to affect a number of species and the most significant should be included in this indicator. The indicator should be retained, but further research is required to determine exactly which species should be included in monitoring efforts. Species important to hunting and angling are of obvious importance; however, the indicator should not be entirely focused on the consumptive aspect of resource-based tourism. Ecotourism is a rapidly growing sector and will likely increase in northern Ontario; thus, selected species should also incorporate those species with non-consumptive value.

3. Habitat quality and quantity for the selected species

The availability of suitable habitat has direct impacts on wildlife populations, and this indicator may have early warning value in cases where declining habitat results in population declines. Previous evaluations have noted that further research is required to improve calculation methods and incorporate issues such as access, distribution, and minimum habitat requirements (Wedeles and Williams, 1999). As with the previous indicator, monitoring efforts should include species of significance to non-consumptive resource-based tourism activities.

4. Proportion of forest area in each cover type and age class type

The proportion of forest area in each cover type and age class type has been retained as it provides a useful quantitative description of the forest despite its simplicity. Wedeles and Williams (1999) noted that more detailed classification systems that incorporate a mixture of physical and biological characteristics are preferable. If areas are managed as sustained-yield units, the age classes are likely to remain relatively consistent because harvests are planned to ensure that a diversity of age classes remains. The overall distributions of forest types and age classes is not always sensitive to change but monitoring these qualities provides insight into the broad changes in forest structure and the magnitude of human and natural disturbances. Over half of the surveyed tourism operators stated that old-

growth forests were an important feature and this increases the relevance of this indicator. Also, as ecotourism increases, so will the importance of this indicator to resource-based tourism.

5. Water quality

Water quality has been retained since tourism operators assigned a high level of importance to this indicator and it is of ecological and aesthetic significance. Both timber harvesting and tourism operations have the potential to affect water quality. For example, when roads are constructed through areas with acidic soil, or when these areas are clearcut, the quality of the water decreases in terms of chemistry and turbidity (CCFM, 1997). However, research has demonstrated that these changes are usually small and relatively short-lived (effects are seldom noticeable after five years) (CCFM, 1997). Tourism operations have the potential to affect water quality through the discharge of wastewater, and shoreline development. To reflect the impacts of these activities, measures should include clarity or turbidity, pH, phosphorous, and temperature. Additional parameters should be added for lakes with deteriorating water quality to determine causal factors.

6. Proportion of watercourses where timber is harvested to water's edge

The aesthetic and ecological implications of timber harvesting in riparian zones give the indicator a high degree of relevance to resource-based tourism. The data collected for this indicator should be analyzed with the water quality data collected for the previous indicator. Timber harvesting near shorelines is a source of dissatisfaction for guests, and tourist operators have stated that they receive complaints about this issue (Hunt et al., 2000). This indicator has been retained although it should focus on areas of interest to resource-based tourism.

7. Area of harvested forest not satisfactorily regenerated (NSR)

The area of harvested forest classified as NSR is of indirect relevance to resource-based tourism because it affects an area's ability to support wildlife and recreational activities. Many forms of ecotourism may not coexist in areas that demonstrate substantial impacts of timber harvesting (Hunt et al., In Press). As with many indicators, the data are available from the OMNR and timber companies, and an agreement for information sharing would simplify the effort of the tourism industry. This indicator has been accepted; however, further research is required to determine the effects of an area's NSR status on the development of tourism activity.

8. Number of roads creating access to formerly remote or semi-remote tourism lakes

Tourism operators stated that access to remote and semi-remote lakes poses challenges to the operation of their businesses. Guests pay a premium to enjoy the pristine and peaceful surroundings at such facilities and are unlikely to return if this aspect of their trip is not fulfilled. However, a road does not have to lead directly to a lake to create an access problem as recreationists may have access to all-terrain vehicles or can gain access on foot if the road ends within close proximity. Consequently, this indicator should be reworded to reflect the distance to the nearest roads at tourism lakes that are/were remote or semi-remote. This indicator requires further research as road access is a critical issue that should be monitored thoroughly.

9. Proportion of landscape within 500 m of shores of tourism lakes clear-cut within past five years

A problem with resource-based tourism is that tourism operators are unable to agree on an acceptable buffer size for lakes and establishments. NOTO has identified 500 m as being minimally acceptable and this value has been incorporated in this indicator (NOTO, 1998). Five years is estimated to be the period in which the effects of timber harvesting are most noticeable. Unfortunately, this indicator is complicated in that buffer sizes are best determined

on a site specific basis. In some cases, a small buffer will provide adequate protection of the aesthetic and ecological features. Conversely, a large buffer would be required where landscapes may be visible for large distances due to topography. In addition, the effects of timber harvesting may be apparent for several decades and an acceptable time frame may be difficult to determine. This indicator has been retained; however, it requires further research to determine an accurate measure of the aesthetic effects of timber harvesting. Also, the indicator should include rivers that are important to tourism. A database of tourism lakes and rivers is required and could be compiled using canoe routes and OMNR land-use designations. Tourism lakes and rivers are identified by the OMNR because of the present existence of a tourism establishment or the future value of the area for tourism (VanWagoner, pers. comm., 1999)

10. Median buffer sizes between clear-cuts and tourism lakes and rivers (in areas under FMPs)

Median buffer sizes between clear-cuts and tourism lakes and rivers is similar to the previous indicator in that it relates to the buffer sizes around lakes. To avoid redundancy, this indicator has been rejected. The previous indicator should be modified to include rivers that serve as recreational waterways (e.g. canoe routes).

11. Median size roadless areas

Roads are problematic in that they increase the fragmentation of ecosystems and increase the stress on natural resources through increased recreational activity. Many species of wildlife, such as wolves, are known to be highly sensitive to roads (CCFM, 1997) and others are prone to overharvest where road densities are high (OMNR, 1988). Road density is a more appropriate indicator from the perspective of resource-based tourism since roadless areas are scarce in most tourism areas. The data are available from the same sources as the median size of roadless areas and the ratings for the remaining evaluation criteria remain unchanged.

12. Satisfaction levels of tourists/recreationists

Determining the satisfaction levels of tourists/recreationists is of marginal use since it provides little insight into the factors behind the ratings provided. After all, it is important to understand why tourists are dissatisfied or satisfied as this will assist with future management decisions (either at the tourism operation or forest management planning level). This indicator has been modified in conjunction with "quality of guest experience at remote and semi-remote tourism operations". It would be more effective to monitor the quality of tourist experiences on multiple-day trips. This should include guiding services that do not offer fixed accommodations and other formal accommodation types. Multiple-day trips enable

the formation of a more definite opinion and are likely to leave a lasting impression on a visitor. As with the former indicator, data collection would be survey-based and should include questions that determine the reasons for the satisfaction or dissatisfaction of guests.

13. Quality of guest experience at remote and semi-remote tourism operations

Refer to indicator #12.

14. Number of recreation and tourism businesses by category of accommodation capacity

The number of recreation and tourism businesses is important to the overall competitiveness of the resource-based tourism industry. Currently, resource-based tourism operations are licensed according to their accommodation capacity; however, a separate category is required to ensure that businesses offering informal accommodations (e.g. canoe outfitters) are included (VanWagoner, 1999). The predictability of this indicator is low; however, using past trends and demographics may provide some assistance with forecasts. This indicator has been retained but requires further research as its relationship with management actions is poorly documented. Furthermore, a detailed inventory of resource-based tourism businesses must be developed and regularly updated.

15. Number of visitor-days at recreation and tourism facilities

The number of visitor-days has been rejected because it is of marginal value given indicators 12, 14, and 16. However, if operators are unwilling to provide the economic data required for indicator 16 (total revenue/sales), then this indicator could be used. The data required to calculate total visitor-days are also more complicated than general economic figures and may not be as accurately reported by tourism operators. Also, there are no tools available to predict the number of visitor-days at recreation and tourism facilities.

16. Revenue generated by the resource-based tourism industry

Revenue generated by the resource-based tourism industry has been modified to "total sales by resource-based tourism businesses" as the latter indicator is measurable at a finer scale and can be obtained directly from tourism operators (providing confidentiality can be ensured). In addition, total sales could be obtainable through tax receipts although this has not been done in the past (VanWagoner, pers. comm., 1999). The revised indicator is preferred because it is predictable through the OMEDTT's Economic Impact Model (OMEDTT, 1998). Future research should be conducted to verify the accuracy of the model.

17. Economic value of consumptive goods and recreational activities provided by the forest, excluding motorized activities

The economic value of consumptive goods and recreational activities has been modified to "total expenditures related to consumptive activities". The OMEDTT has previously collected these data; however, such efforts have not been annual (OMEDTT, 1998). The actual costs and efforts associated with collecting these data require evaluation. As with the previous indicator, total expenditures are predictable through the use of OMEDTT's Economic Impact Model, but future research is required to verify the accuracy of these predictions.

18. Economic value of non-consumptive goods and recreational activities provided by the forest, excluding motorized activities

The economic value of non-consumptive goods and recreational activities has been modified to "total expenditures related to non-consumptive activities". Refer to indicator #17 for the rationale behind this modification. Separate indicators for consumptive and non-consumptive activities were retained and they provide economic data on two segments of resource-based tourism. It is important for tourism operators and resource managers to understand the changes in these segments and be able to adapt accordingly.

19. Total wages paid and total number of jobs attributed to resource-based tourism operations

The total number of jobs attributed to resource-based tourism has been removed because it fails to differentiate between full-time and part-time employment as well as seasonal and year-round employment. Such wording would make the indicator misleading since the majority of employment associated with resource-based tourism is seasonal. Total wages paid is an important economic benefit of this industry and the data can be collected directly from tourism operators (the majority stated that they would provide the data if confidentiality could be ensured).

20. Expenditures related to infrastructure at tourism establishments

Capital expenditures are an indicator of current financial health and future competitiveness (Wedeles and Williams, 1999). Although there is no tool to predict expenditures, operators must plan for capital expenditures and can estimate when such expenditures will occur. Several of the surveyed operators indicated that they plan either to renovate or expand their establishments within the next ten years and this implies that recent business has been favorable. Data pertaining to expenditures can be obtained directly from tourism operators as the majority stated that they would be willing to provide the data if confidentiality could be ensured. This indicator has been retained as a surrogate measure of the business security of

the resource-based tourism industry; however, a reasonable time frame must be determined through further discussions with tourism operators.

21. Resource base available for selected recreation activities

Data collection and analysis for the resource base available for recreational activities would require substantial efforts; however, the indicator is of present and future significance. Clearly, resource-based tourism requires a diversity of features ranging from snowmobile trails to canoe routes. An inventory of such features would have several uses and is a worthwhile undertaking. Although there is no tool to predict the effects of various management activities on the available resource base, an examination of forest management plans can provide insight into the future resource base available for several activities. The resource base available for recreational activities should include both consumptive and non-consumptive recreation types.

22. Percent of forest area in parks, protected and designated recreational areas

As noted by park visitation rates, the importance of protected and designated recreational areas is significant, especially for non-consumptive activities (OMNR, 1999b). Also, since ecotourists prefer to recreate in areas where timber harvesting it not evident, protected areas are likely to increase in importance (Hunt et al., In

Press). This indicator is most useful at OMNR district or regional levels since finer spatial scales are unlikely to include any protected or designated areas. The percent of forest area in parks, protected, and designated recreational areas could easily be derived from OMNR data. However, there is no tool available to predict the effects of various management activities because broad land-use designations are influenced by several factors that complicates forecasts. Despite these disadvantages, the indicator has been retained because of its significance to the resource-based tourism industry.

23. Satisfaction of tourism operators with forest management planning process and outcomes

In general, tourism operators are disenfranchised with the forest management planning process and feel that their participation has little bearing on final outcomes (Hunt et al., 2000). It is important to determine why tourism operators are dissatisfied because this information is useful to those involved in forest management planning. The satisfaction of tourism operators as an indicator has limitations in that it is not predictable and would require significant efforts to implement since a survey approach would be required. However, the concerns of tourism operators must be better understood. This indicator has been retained because the turbulent relationship between the OMNR, timber companies, local recreationists, and tourism operators is not sustainable from a social perspective

and research is required to develop means to alleviate the conflicts (e.g. Johnson and Duinker, 1993).

24. Perceived effectiveness of Local Citizens' Committee (LCC)

The self-perceived effectiveness of LCCs is a useful indicator for the reasons stated for indicator #23. LCC self-evaluations will provide information from people with diverse perspectives on forest management. As mentioned above, involvement with forest management planning can be a negative experience for some and future research should determine why this is the case. This indicator has been retained because it provides an alternative perspective to that of tourism operators and may be indicative of the fairness of forest management planning processes.

25. Aboriginal satisfaction with tourism management

Aboriginal satisfaction with tourism management has been removed from the indicator framework but should be considered for future inclusion. Despite the fact that Aboriginals have not played a major role in past resource-based tourism management, this may change as their communities seek greater involvement in the tourism industry. In addition, land claims may incorporate existing tourism

operations which will have definite impacts on the relationship between Aboriginal communities and resource-based tourism operators.

26. Local residents' satisfaction with tourism-based economic opportunities

Previous research has shown that local residents in some communities see little benefit from resource-based tourism development (Wanlin et al., 1994). This is a source of conflict and efforts should be made to rectify this problem. Data collection for local residents' satisfaction should focus on communities in close proximity to significant tourism development. A survey administered to community leaders or to a random sample of adults would be most practical. Although satisfaction levels are difficult to predict, the indicator has been retained because it has been a source of dissent and is related to community sustainability.

Revised Indicator Framework

Biological Indicators

Species Diversity
- Populations/indices of vulnerable, threatened, and endangered species
- Populations/indices of selected species
- Habitat quality and quantity for selected species

Ecosystem Diversity
- Percent of forest area in each cover and age-class type

Water Quality
- Water quality

Ecosystem Productivity
- Area of harvested forest not satisfactorily regenerated (NSR)

Ecosystem Fragmentation
- Road density

Economic Indicators

Prosperity of Tourism Industry
- Quality of tourist experiences on multiple-day trips
- Number of recreation and tourism businesses by category of accommodation capacity
- Expenditures related to infrastructure at tourism operations
- Sales by resource-based tourism businesses
- Expenditures related to consumptive activities
- Expenditures related to non-consumptive activities
- Wages paid at resource-based tourism operations

Social Indicators

Aesthetic Quality of Forest

- Road density
- Percent of watercourses where timber is harvested to water's edge
- Distance to the nearest roads at (formerly) remote/semi-remote tourism lakes
- Percent of landscape within 500 m of shores of tourism lakes clear-cut within past five years

Availability of Recreational Opportunities

- Resource-base available for selected recreation activities
- Percent of forest area in parks, protected, and designated recreational areas

Forest and Tourism Management

- Satisfaction of tourism operators with forest management planning process and outcomes
- Perceived effectiveness of Local Citizens' Committee by self-evaluation
- Local residents' satisfaction with tourism-based economic opportunities

Table Four: Summary Table of Indicators

	Ecological	Social	Economic
Timber ⇨ Environment ⇨ Tourism	• populations/indices of vulnerable, threatened, and endangered species • populations/indices of selected species • habitat quality and quantity of selected species • percent of forest area in each cover and age-class type • water quality • area of harvested forest NSR • road density	• road density • percent of watercourses where timber is harvested to water's edge • distance to the nearest roads at (formerly) remote/semi-remote tourism lakes • percent of landscape within 500 m of shores of tourism lakes clear-cut within past five years • resource-based available for selected recreation activities • percent of forest area in parks, protected, and designated recreational areas • satisfaction of tourism operators with forest management planning process and outcomes • perceived effectiveness of LCC by self-evaluation	• quality of tourist experiences on multiple-day trips • number of recreation and tourism businesses by category of accommodation capacity • sales by resource-based tourism businesses • expenditures related to consumptive/non-consumptive activities

Tourism ⇨ Environment	• populations/indices of vulnerable, threatened, and endangered species • populations/indices of selected species • habitat quality and quantity of selected species • water quality • road density	• resource-based available for selected recreation activities • local residents' satisfaction with tourism-based economic opportunities • perceived effectiveness of LCC by self-evaluation	• quality of tourist experiences on multiple-day trips • number of recreation and tourism businesses by category of accommodation capacity • expenditures related to infrastructure at tourism operations • sales by resource-based tourism businesses • expenditures related to consumptive/non-consumptive activities • wages paid at resource-based tourism operations

Chapter 6

Conclusions

As society moves into a new millennium, the sustainability of human actions is of paramount importance. Public awareness of ecological issues has been reflected in the growth of ecotourism and non-consumptive recreational pursuits. Throughout Canada there are initiatives to develop performance indicators designed to monitor the impacts of human activities, and the data and experience gained from these initiatives is expected to lead to more-informed decision-making and the sustainable management of natural resources. It is imperative that every economic sector be a part of such initiatives, especially those industries that are dependent on healthy and vibrant ecosystems. In the case of resource-based tourism, unchecked development has the potential to threaten the attributes that have enabled the growth and success of the industry. Resource-based tourism in northern Ontario is a unique industry and the internal and external factors that affect it must be understood.

The objectives of this research were to determine the factors that affect the sustainability of northern Ontario's resource-based tourism industry and to develop an indicator framework for measuring the sustainability of the industry. The first objective was accomplished through a workshop and survey that assessed the concerns of tourism operators and identified the needs of a successful resource-

based tourism business. Operators also suggested possible indicators relating to these concerns and needs. The results confirmed previous research by demonstrating that tourism operations require healthy wildlife populations and pristine surroundings. According to tourism operators, especially those of remote establishments, the effects of timber harvesting and road access by non-guests are prominent. These issues constitute the factors that resource-based tourism operators feel affect the sustainability of their businesses and related values were emphasized in the indicator framework.

Resource-based tourism operators recognize that their businesses have environmental impacts and many have made mitigative efforts. For example, several operators have taken steps to manage domestic wastes and wastewater properly and have encouraged the use of conservation fishing limits. Also, some operators have improved fuel storage practices, made efforts to educate guests and promote environmental awareness, and have altered practices at their establishments to reduce the generation of pollutants. The majority of operators contacted demonstrated some degree of environmental awareness which makes them more cognizant of the need for sustainability indicators.

Support for a framework of sustainability indicators for resource-based tourism was demonstrated through the suggestions of indicators by operators and their willingness to provide information for the initiative. The support of operators

is necessary since data for some indicators must be collected at the operation level. If tourism operators can appreciate the long-term benefits of measuring performance indicators, the possibility of implementing the framework presented here greatly increases. The Ontario government has committed itself to the sustainability of resource-based tourism through its "Resource-Based Tourism Policy" and this makes the initiation of such an indicator framework a logical progression (OMNR, 1996).

The Resource-Based Tourism Policy discusses a concept known as the "Tourism Allocation Model", which illustrates a relationship between resource stewardship and resource allocation (OMNR, 1996). As benefits from the use of the resource increase, so do the responsibilities for stewardship and sustainable development (OMNR, 1996). There is a strong implication here that the stewardship responsibilities for tourism operators will increase, especially for remote operations that have dedicated use of the resource base. Presently, there are no tools dedicated to assist operators or give direction to stewardship efforts. Sustainability indicators have the potential to fulfil this need.

Recent years have also seen an increase in environmental audits as a key concept in sustainable development. The Canadian Standards Association is one example of an organization that has developed auditing programs to evaluate the sustainability of activities such as forest management (CSA, 1996). This concept

has also been endorsed by the international tourism industry; however, few countries have adopted a formal auditing process for tourism operations. Although the current trend is to wait until market forces and consumer demand signal the need for such a program, the concept has current value as a voluntary initiative. Industry and government can collaborate to achieve higher environmental standards by monitoring the effectiveness of management systems in contributing to sustainable tourism development. Several industries have initiated voluntary audit programs and there is no reason why the tourism industry should not follow suit. Such an initiative would provide a mechanism to evaluate individual operations and reward environmentally conscious operators. In fact, this was suggested during the workshop and could be linked to the government's licensing of tourism establishments.

Further Research Needs

As with all research, this project has limitations associated with its methods and practical implications. The indicators for sustainable resource-based tourism presented here are a preliminary set and require further refinement as discussed in the preceding chapter. This should be accomplished through field trials and scrupulous examination by those involved in tourism and natural resource management. In addition, the indicators presented here address a variety of spatial

scales. Some indicators will provide information on values at an industry or regional level while others will reflect on changes to an individual establishment or at a forest management planning level. There are several knowledgeable tourism operators who can provide additional insight into these indicators through their years of experience. In addition, data for several indicators are required from sources outside the realm of tourism. Therefore, agreements for information sharing are required to secure the long-term availability of such data.

Through the implementation of the indicator framework, the adaptive management and learning process is initiated. Practical application is the best way to determine the effectiveness of the indicators and improve comprehension of the impacts of various management activities. In time, this will improve forecasting techniques which will lead to more informed decision-making. After all, achieving sustainability is a cyclical process that involves forecasting the effects of management actions, measuring and monitoring the actual effects, evaluating the actions and forecasting methods, and improving the management actions and forecasting methods. This process cannot begin until a monitoring program of sustainability indicators for resource-based tourism is developed and implemented. Sustainability as a development objective has endured more than a decade of debate and scrutiny and the implementation of this concept is imperative.

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Appendix A.1: Outline for Workshop, NOTO Convention, November 8, 1998

NOTO Convention 1998
Workshop: Sustainability Indicators and Resource-Based Tourism
Michelle Johnson, Graduate Student, Lakehead University
Margaret Wanlin, Facilitator

The purpose of this workshop is to discuss the development of sustainability indicators for resource-based tourism. A future trend in natural resource management is to measure indicators to monitor the long-term effects of human activity. The forest industry has developed a set of indicators which will be used to monitor the economic, social, and environmental effects of forest management. The Tourism Industry Association of Canada is working on a similar project and my research attempts to identify indicators the address the links between tourism and the surrounding environment.

To develop a list of indicators, it is important to determine which values should be monitored. In this case, the indicators must reflect the features required to ensure the success of Ontario's resource-based tourism industry (for example, most of us would agree that high quality resources such as fish and wildlife are needed to sustain a fly-in lodge).

Questions

The Canadian Council of Forest Ministers published its framework of indicators in 1995. One group of indicators involves multiple benefits of the forest which include the following indicators pertaining to resource-based tourism and recreation.

a) Contribution to the gross domestic product (GDP) of non-timber sectors of the forest economy.
b) Total employment in all forest-related sectors.
c) Availability of recreational opportunities.
d) Total expenditures by individuals on activities related to non-timber use.
e) Membership and expenditures in forest recreation-oriented organizations and clubs.
f) Area and percentage of protected forest by degree of protection.

1. How well do you think each of these indicators will reflect the impacts of timber harvesting operation on resource-based tourism?

2. How would you improve or expand this list to more accurately reflect the impacts of timber harvesting on resource-based tourism?

3. In your opinion, what features are important to the success of your resource-based tourism establishment(s)? (these can include characteristics of the natural environment, or attributes of your business)

4. What do you feel are major challenges faced by your resource-based tourism establishment(s)? (challenges might include limitations due to government policies, conflicting activities, or financial constraints)

5. Do you feel that your establishment negatively impacts the environment? If so, in which way?

6. If a database was established to monitor the sustainability of the resource-based tourism industry and the effects of activities such as timber harvesting, which types of information would you be willing to provide to tourism organizations (e.g. NOTO) or government agencies such as the Ontario Ministry of Economic Development, Trade, and Tourism (OMEDTT)?

NOTO	OMEDTT
☐	☐ number of visitors per season
☐	☐ percentage of repeat visitors
☐	☐ length of average visit of tourists
☐	☐ percentage increase in visitors from previous year
☐	☐ harvest levels of fish and wildlife
☐	☐ appraised value of establishment and infrastructure
☐	☐ gross revenue generated by your establishment
☐	☐ total wages paid to employees
☐	☐ person-days of employment
☐	☐ expenditures in local area
☐	☐ others?

Appendix A.2: Summary of Workshop Results

Question 1(a): CCFM Indicators

- ◊ timber harvesting has a large impact on tourism since harvesting can occur extremely close to lodges and outposts; the impacts of timber harvesting reflect on all non-timber related businesses and this needs to be addressed
- ◊ monitoring GDP is of limited usefulness because it will take several years for a decline in tourism to be noticed as a proportion of GDP; by this time problems may be to complex to rectify (e.g. aesthetic effects of timber harvesting)
- ◊ economic data on the tourism industry is very recent; tourism was not recognized as the second largest industry in Ontario and the overall economic impacts are poorly understood
- ◊ difficult to compare tourism and timber using the same measures and statistics because the industries are unique and economic impacts vary substantially

Question 1(b)

- ◊ should also look at the diversity of employment opportunities since a region is more sustainable if there are a variety of occupations and opportunities
- ◊ look at the quality of employment opportunities, a large portion of those involved in resource-based tourism are owners or managers whereas in the timber industry there are few managers and supervisors and little possibility for career advancement for bush workers or mill 'assembly line workers'
- ◊ economic variables such as employment should be compared by area of forested land over the long-term, an acre of forest for timber harvesting will generate revenue every rotation but an acre of forest used for tourism generates revenue on an annual basis

Question 1(c)

- ◊ should be the diversity of recreational opportunities since logging and snowmobiling or hunting can coexist but birdwatching and logging can not
- ◊ forestry might increase recreational opportunities through roads but diversity of opportunities is lost as wilderness areas are fragmented

◊ ecotourists are intimidated, Ontario Federation of Anglers and Hunters has been the official voice of the public to the OMNR and ecotourism is not seen as a lucrative business for northern Ontario

Question 1(d)

◊ this indicator might be very difficult to measure; it is vague

Question 1(e)

◊ as above, the indicator should address the issue of diversity and separate expenditures by activity

Question 1(f)

◊ no comments

Question 2 - Improvements to CCFM List

◊ percentage of foreign ownership (via shareholders) in timber companies
◊ value added comparison; tourism sells a value added product whereas timber exports raw product for value added processing
◊ proportion of revenue spent in region
◊ unemployment in timber-based towns (e.g. 60% in Gogama, Timmins District)
◊ indicator list must incorporate aesthetic impacts because they are noticed long before economic impacts; serves as an early warning that tourism is in jeopardy

Question 3 - Features Important to Resource-Based Tourism

◊ quality of wilderness experience includes a feeling of solitude, peace and quiet
◊ visual qualities, pristine scenery (although it was mentioned that tourists find fire disturbance interesting but logging is an eyesore)
◊ clean water
◊ healthy fish and wildlife
◊ large buffers to promote ecotourism, otherwise tourists are limited to one lake and the forested 'doughnut '

- ◊ actual remoteness; perceived remoteness is a facade and the premium rates these operations can charge makes their role in the economy significant
- ◊ opportunities to provide valuable input in forestry planning in immediate area, discuss where, how and when to cut (more meaningful involvement)
- ◊ tourism should not be seen as selling fish and bear, the wilderness experience is for sale and must be protected
- ◊ need to be recognized as a viable industry by banks (opinion that tenure does not matter rather, backs feel that tourist operations are not profitable)
- ◊ difficult to compete with commercial fishery; they sometimes fish at the mouth of a river and reduce the population of fish before it reaches tourism lakes
- ◊ more enforcement by OMNR (re: road closures, harvest limits)
- ◊ cottage development is a threat in some areas (e.g. Temagami, Muskoka and Kenora)

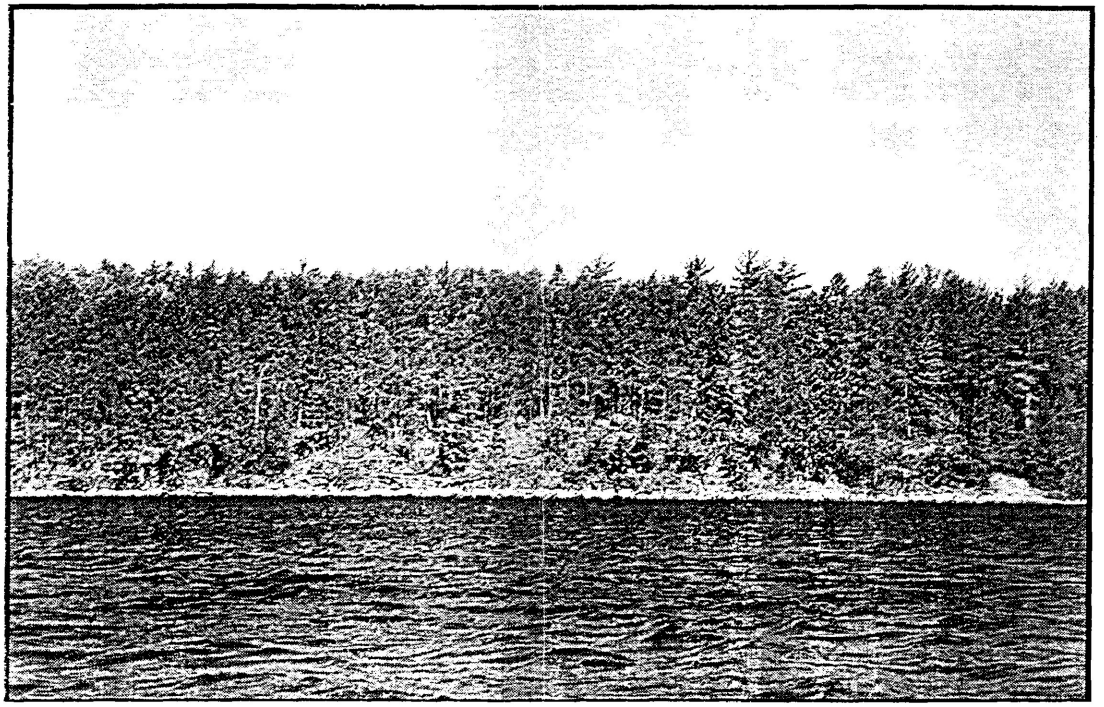
Question 5 - Environmental Impacts

- ◊ sewage disposal, septic fields
- ◊ boat motors (2 stroke, older motors have higher emissions)
- ◊ harvesting fish, wildlife
- ◊ some operators have less concern for the environment and there should be a system to penalize them
- ◊ tourism operators can have a positive impact in that they are like time share cottages which reduces the demand for new development
- ◊ positive educational impacts, several operators promote catch and release and conservation fishing and try to teach visitors to respect nature
- ◊ social benefits in that resource-based tourism gives people an opportunity to relax, spend quality time with family and friends and "get back to their roots"

Question 6 - Others

- ◊ expenditures in marketing, supplies, etc.
- ◊ number of years in business (the camp, not the operator)
- ◊ demographics of guests would be extremely useful in evaluating trends
- ◊ need to protect land for future ecotourism opportunities, although hunting and fishing is the norm today it is expected to decrease and forest management must address these long-term issues

Resource-Based Tourism and Resource Management in Ontario:
A Survey of Operators



Research Sponsored by

Ontario Ministry of Natural Resources
Northern Ontario Tourism Outfitters Association
Lakehead University

Description of Your Resource-Based Tourism Business

The questions in this section ask you to record basic information regarding your resource-based tourism business in Ontario. These questions will allow us to group your responses with those from operators with similar resource-based tourism businesses.

1) For how long have you owned a resource-based tourism establishment in Ontario? _____ years
(Note: an establishment refers to an outpost camp or lodge (a name you use for marketing))

2) What year was your resource-based tourism business first established? _____ year

3) Please indicate the primary (greater than 20% of your client base) and secondary (greater than 5% of your client base) markets for your resource-based tourism business. *(check all that apply)*

Primary	*Secondary*	*Origin of Clients*	*Primary*	*Secondary*	*Origin of Clients*
❑	❑	northern Ontario	❑	❑	Minnesota
❑	❑	southern Ontario	❑	❑	Wisconsin and Illinois
❑	❑	Manitoba	❑	❑	Iowa, N. Dakota, and S. Dakota
❑	❑	Quebec	❑	❑	Michigan, Ohio, and Indiana
❑	❑	Other Canadian	❑	❑	Mid/South-Central U.S. (AL, AR, MO, MS, KS)
			❑	❑	Mid/South-East U.S. (GA, KY, NC, NY, PA, TN, WV)
❑	❑	Overseas	❑	❑	Other U.S.

4) Please name the forest licence areas / forest management units that your resource-based tourism establishments are located. *(if unsure, please provide the names of the MNR District(s) that are responsible for the areas where your tourism establishments are located or the names of the nearest towns)*

_____

5) For each type of establishment, please record the number of resource-based tourism establishments you own in Ontario by access type. *(please record the numbers in the table below)*

Accessibility	American Plan Lodge	Housekeeping Lodge	Outpost	Other, _____
Fly-in Only				
Train or Boat				
Road Based				

6) What tenure agreement(s) do you have for your resource-based tourism establishments. *(please record the number of establishments with each tenure type)*

_____ land-use permit
_____ licence of occupation
_____ deeded property (ownership)
_____ crown-lease

7) Successful resource-based tourism businesses rely on many features. Please circle the number that best indicates how important each feature below is to the success of your resource-based tourism business.

	Not at all Important		Moderately Important		Extremely Important	No opinion
pristine environment	1	2	3	4	5	❑
quality of fishery	1	2	3	4	5	❑
abundance of wildlife for hunting	1	2	3	4	5	❑
wildlife viewing opportunities	1	2	3	4	5	❑
unique plant and/or animal species	1	2	3	4	5	❑
water quality	1	2	3	4	5	❑
presence of old growth forests	1	2	3	4	5	❑
opportunities to canoe and/or kayak	1	2	3	4	5	❑
quiet and peaceful surroundings	1	2	3	4	5	❑
other _____	1	2	3	4	5	❑
other _____	1	2	3	4	5	❑

8) Resource-based tourism businesses encounter many challenges to their success. Please circle the number that best indicates the likelihood of each challenge of negatively affecting your business <u>within the next five years</u>.

	Very Unlikely		Neither Likely Nor Unlikely		Very Likely	No opinion
timber harvesting operations	1	2	3	4	5	❑
mineral extraction activities	1	2	3	4	5	❑
road based recreationists	1	2	3	4	5	❑
competition from other resource-based tourism businesses	1	2	3	4	5	❑
difficulty attracting new visitors	1	2	3	4	5	❑
difficulty financing expansions/renovations		2	3	4	5	❑
other _____		2	3	4	5	❑

9a) What types of changes have you made to your resource-based tourism establishment(s) in the <u>last five years</u>? (e.g. began marketing in new areas, offering new services, or promoting new activities)

_____

_____

_____

9b) What types of changes are you expecting to make to these establishments in the next ten years?

_____

_____

_____

Your Experiences with Forest Management Activities and Resource-Based Tourism in Ontario

We now ask you if and how timber management operations undertaken in the vicinity of your tourism establishments have affected your guests over the *PAST FIVE YEARS*. Please employ the following scale when deciding about the frequency of complaints for an establishment:

- **Few** complaints are very infrequent over the five years
- **Several** complaints are occasional over the five years or are constant during a shorter time frame
- **Many** complaints are constant over the five years or are very high during a shorter time frame

If you operate more than one establishment, please record the number of your establishments with similar complaint levels by guests for each effect below.

Example: *Operator A has* ***7 fly-in only accessible establishments (as recorded in question 5)*** *. Four establishments have received no complaints, 2 have received very infrequent complaints, and 1 has received occasional complaints by guests for 'hearing harvesting noise at establishment' in the last five years. He/she would then record the following information:*

Frequency of Complaints (last five years)

None	Few	Several	Many

EXAMPLE

Types of Effects

hearing harvesting noise at establishment

10) For your **FLY-IN** accessible establishments only: What level of complaints have you received from guests for each effect below? ***(if you have no FLY-IN establishments please go to Question 11)***

Frequency of Complaints (last five years)

None	Few	Several	Many	***Types of Effects***
				hearing harvesting noise at establishment
				hearing harvesting noise on lake/shore
				hearing hauling/traffic noise at establishment
				hearing hauling/traffic noise on lake/shore
				seeing bare hill/ground from land/water
				seeing a cutover through a buffer/reserve from land/water
				seeing a road through buffer/reserve from land/water
				seeing a cutover in close proximity to tourism waters from air
				seeing a road in close proximity to tourism waters from air
				having non-guests access a waterbody by non-fly-in modes
				other effects, please specify _____
				other effects, please specify _____

11) For your **TRAIN/BOAT** accessible establishments only: What level of complaints have you received from guests for each effect below? ***(if you have no TRAIN/BOAT establishments please go to Question 12)***

Frequency of Complaints (last five years)

None	Few	Several	Many	*Types of Effects*
				hearing harvesting noise at establishment
				hearing harvesting noise on lake/shore
				hearing hauling/traffic noise at establishment
				hearing hauling/traffic noise on lake/shore
				seeing bare hill/ground from land/water
				seeing a cutover through a buffer/reserve from land/water
				seeing a road through buffer/reserve from land/water
				having non-guests access a waterbody by non-(fly-in/train/boat) modes
				other effects, please specify _____
				other effects, please specify _____

12) For your **ROAD** accessible establishments only: What level of complaints have you received from guests for each effect below? ***(if you have no ROAD BASED establishments please go to Question 13)***

Frequency of Complaints (last five years)

None	Few	Several	Many	*Types of Effects*
				hearing harvesting noise at establishment
				hearing harvesting noise on lake/shore
				hearing hauling/traffic noise at establishment
				hearing hauling/traffic noise on lake/shore
				seeing bare hill/ground from land/water
				seeing a cutover through a buffer/reserve from land/water
				seeing a road through buffer/reserve from land/water
				other effects, please specify _____
				other effects, please specify _____

13) Please provide the name(s) of the lakes / waterbodies for each of your establishments that you believe have access problems by non-guests. *(This list will assist in future research)*

_____

_____

_____

14) For each of your establishments that you believe have been closed because of timber operations, please provide both the year(s) of closure and the lake / waterbody name(s) *(This will assist in future research)*

_____

Forest Management Planning and Tourism Concerns

Below, we are interested in hearing about your participation in Ontario's forest management planning process and your suggestions for improving that process.

15) How have you been involved with the forest management planning process? *(please check all that apply)*

- ❑ had no involvement ***(please go to Question 21)***
- ❑ attended open houses (information sessions)
- ❑ submitted comment forms from the open houses (information sessions)
- ❑ reviewed draft plans
- ❑ was contacted by the planning team over potential conflicts
- ❑ served as a local citizens committee (LCC) member
- ❑ served as a planning team member for a Forest Management Plan
- ❑ had tourism concerns represented by other individuals (not by LCC members)
- ❑ represented other tourism operators (not as an LCC member)

16) Have you ever had a concern with an element of a Forest Management Plan or a concern with the implementation of a Forest Management Plan? *(please check all that apply)*

- ❑ no concern ***(Please go to question 21)***
- ❑ yes, concern(s) with elements of a Forest Management Plan
- ❑ yes, concern(s) with implementation of a Forest Management Plan

17) In your opinion, what percentage of <u>your concerns</u> with Forest Management Plans are addressed to your satisfaction?

_____ %.

18) What steps have you followed in attempts to resolve your concerns *(please check all that apply)*

- ❑ followed no steps to resolve concern ***(Please go to question 21)***
- ❑ had other individuals representing me
- ❑ identified concern to plan author/OMNR (written or verbal)
- ❑ met with author of plan
- ❑ met with author of plan and MNR District Manager
- ❑ provided MNR District Manager with written solution to concern
- ❑ asked MNR Regional Director to review MNR District Manager's decision
- ❑ requested an Environmental Assessment bump up
- ❑ other, please specify _____

19) Please state your level of agreement with the statements below about the equity, efficiency, and effectiveness of both the process that was followed and the final solutions (outcomes) achieved for addressing your concerns. *(Please circle the number that best reflects your opinion)*

	Strongly Disagree		Neither Disagree nor Agree		Strongly Agree	No opinion
the process is fair (process equity)	1	2	3	4	5	❑
for all involved, money and time was well spent in the process	1	2	3	4	5	❑
your effort and time was well spent in the process	1	2	3	4	5	❑
the process is effective (process effectiveness)	1	2	3	4	5	❑
the resolution decisions are fair (outcome equity)	1	2	3	4	5	❑
the resolution decisions are easy to implement (outcome efficiency)	1	2	3	4	5	❑
the resolution decisions are the best (outcome effectiveness)	1	2	3	4	5	❑

20a) If you have dealt with more than one MNR District Office for resolving your concerns, do you feel that your concerns were addressed differently between MNR Districts

❑ No ❑ Yes ❑ Unsure ❑ Not applicable

20b) If yes to Question 20a, please explain the difference(s) below.

21) To improve the resolution process for tourism/forestry conflicts in the future, what tools should be developed and what tools that have been developed should be employed more often?

22) Please describe any positive experiences you have had with Ontario's forest management planning process. *(Please be as specific as possible)*

_____

_____

_____

_____

_____

_____

_____

Timber Management Guidelines for the Protection of Tourism Values and You

Currently, the *Timber Management Guidelines for the Protection of Tourism Values* are being updated. Questions in this section ask about your awareness with, your suggested improvements to, and your beliefs about the effectiveness of the guidelines.

23) Are you aware of the *Timber Management Guidelines for the Protection of Tourism Values*?

- ❑ No. I was unaware of the guidelines **(Please go to Question 26a)**
- ❑ Yes. I know the guidelines exist, but I am not familiar with its content
- ❑ Yes. I know the guidelines exist, and I vaguely know its contents
- ❑ Yes. I know the guidelines exist, and I know its contents well

24a) Do you believe that the *Timber Management Guidelines for the Protection of Tourism Values* are an effective framework for protecting tourism values?

❑ No ❑ Yes ❑ Unsure

24b) Are the *Timber Management Guidelines for the Protection of Tourism Values* being implemented in the way in which they were intended?

❑ No ❑ Yes ❑ Unsure

25) What improvements would you suggest for these *Guidelines* ?

_____

_____

_____

_____

_____

26a) **How important are each of the following methods** of protecting tourism values to you as an operator? *(please circle the number best reflecting your level of importance)*

	Not at all Important		Somewhat Important		Very Important	No opinion
preventing cut patterns with geometric shapes, e.g., rectangles	1	2	3	4	5	❑
creating buffers accounting for differences in topography	1	2	3	4	5	❑
creating buffers around popular navigable rivers, inlets, etc.	1	2	3	4	5	❑
creating buffers around prominent scenery	1	2	3	4	5	❑
creating buffers to avoid exposing views of bare ground	1	2	3	4	5	❑
creating buffers that hide timber management from lake views	1	2	3	4	5	❑
preventing access points from logging roads	1	2	3	4	5	❑
removing tertiary roads after harvest	1	2	3	4	5	❑
planting over abandoned roads	1	2	3	4	5	❑
harvesting near tourism areas in winter only	1	2	3	4	5	❑
restricting access on nearby roads	1	2	3	4	5	❑
preventing harvesting/hauling noise at tourist accommodations	1	2	3	4	5	❑
preventing harvesting/hauling noise on tourism waters	1	2	3	4	5	❑
removing bridges and culverts from roads	1	2	3	4	5	❑

26b) **How effective has the forest management planning process** been at employing each of the following methods of protecting tourism values? *(please circle the number best reflecting your level of importance)*

	Not at all Effective		Somewhat Effective		Very Effective	No opinion
preventing cut patterns with geometric shapes, e.g., rectangles	1	2	3	4	5	❑
creating buffers accounting for differences in topography	1	2	3	4	5	❑
creating buffers around popular navigable rivers, inlets, etc.	1	2	3	4	5	❑
creating buffers around prominent scenery	1	2	3	4	5	❑
creating buffers to avoid exposing views of bare ground	1	2	3	4	5	❑
creating buffers that hide timber management from lake views	1	2	3	4	5	❑
preventing access points from logging roads	1	2	3	4	5	❑
removing tertiary roads after harvest	1	2	3	4	5	❑
planting over abandoned roads	1	2	3	4	5	❑
harvesting near tourism areas in winter only	1	2	3	4	5	❑
restricting access on nearby roads	1	2	3	4	5	❑
preventing harvesting/hauling noise at tourist accommodations	1	2	3	4	5	❑
preventing harvesting/hauling noise on tourism waters	1	2	3	4	5	❑
removing bridges and culverts from roads	1	2	3	4	5	❑

Indicators of Sustainable Tourism

An indicator is a variable that can be measured and monitored to evaluate long-term impacts. A common example is to use consumer spending and unemployment rate as indicators of economic health. The Canadian Council of Forest Ministers has developed indicators which will be monitored to assess the sustainability of forestry operations.

27a) The following indicators address resource-based tourism and recreation. Please state the relevancy of each indicator for measuring the effects of forestry operations on resource-based tourism. *(circle the number best representing your opinion)*

	Not at all Relevant		Somewhat Relevant		Very Relevant	No opinion
area and percentage of protected forest by degree of protection	1	2	3	4	5	❑
total employment in all forest-related sectors	1	2	3	4	5	❑
availability of recreational opportunities	1	2	3	4	5	❑
total expenditures on activities related to non-timber use	1	2	3	4	5	❑
membership and expenditures in forest recreation-oriented organizations and clubs	1	2	3	4	5	❑
contribution to the gross domestic product (GDP) of non-timber sectors of the forest economy	1	2	3	4	5	❑

27b) Please describe how you would improve or expand this list to more accurately reflect the effects of timber harvesting on resource-based tourism.

_____

_____

_____

_____

_____

_____

_____

28) What steps have you taken to ensure that your resource-based tourism business does not negatively impact the environment?

_____

_____

_____

_____

_____

Appendix B.1: Copy of Survey

29) To monitor the sustainability of the resource-based tourism industry and the effects of activities such as timber harvesting, data would need to be collected from tourist operators. Assuming confidentiality would be ensured, what types of information would you be willing to provide to tourism organizations (e.g. NOTO) or to government agencies dealing with resource-based tourism (e.g. Ontario Ministry of Economic Development, Trade and Tourism (OMEDTT))? *(please check all that apply)*

NOTO	OMEDTT	
❑	❑	number of visitor days per season
❑	❑	percentage of repeat visitors (individuals not groups)
❑	❑	percentage increase in visitors from previous year
❑	❑	harvest levels of fish/wildlife
❑	❑	appraised value of establishment and infrastructure
❑	❑	gross revenue generated by your establishment
❑	❑	total wages paid to employees
❑	❑	person-days of employment
❑	❑	expenditures of tourism operators in local area/region/province
❑	❑	other_____
❑	❑	other_____

30) The following is a list of current policies and practices which may affect some resource-based tourist businesses. Please circle the number that indicates the degree to which you are satisfied with how each item affects your business.

	Very Unsatisfied		Neither Satisfied nor Unsatisfied		Very Satisfied	No opinion
provincial policies regarding mineral extraction	1	2	3	4	5	❑
provincial policies regarding timber harvesting	1	2	3	4	5	❑
bed capacity for tourist accommodations	1	2	3	4	5	❑
hunting regulations (tag allocations)	1	2	3	4	5	❑
restrictions regarding lake access	1	2	3	4	5	❑
tenure agreements with the province	1	2	3	4	5	❑
promotion of the area by government agencies		2	3	4	5	❑
promotion of the area by tourism organizations		2	3	4	5	❑

Thank you for completing the survey. The time and effort you have spent are greatly appreciated. We encourage you to record any further comments you may have on this and the next page.

Appendix B.2: Summary of General Descriptive Questions

Table B.2.1: Location of Establishments (%)

Region	Remote	Semi-Remote	Road Based
Northwest	69.9	51.6	38.7
Northeast	30.1	40.6	43.9
South-Central	0.0	7.8	17.4

Table B.2.2: Accessibility* of Establishment

	Road-Based	Semi-Remote	Remote
Percentage of Total	23.5	10.0	66.5

*defined by most remote establishment in cases where multiple establishments owned

Table B.2.3: Form of Tenure (%)*

Form of Tenure	Road-Based	Semi-Remote	Remote
License of Occupation	5.9	6.3	4.9
Land-use Permit	22.9	42.9	77.7
Crown Lease	7.8	12.7	18.4
Deeded Property	93.5	96.8	72.8

*column totals exceed 100% because some respondents operate multiple establishments with varying forms of tenure

Appendix B.3: Responses to Questions Regarding Sustainability Issues

Table B.3.1: Importance of Features to Resource-Based Tourism (% by accessibility)

Features	Accessibility	None (1)	2	Moderate (3)	4	Extreme (5)
Canoe/Kayak Routes	road-based	9.8	12.7	34.3	22.5	20.6
	semi-remote	11.6	25.6	16.3	25.6	20.9
	remote	14.1	20.0	24.7	17.6	23.5
Fishing Opportunities	road-based	0.0	0.9	5.6	21.5	72
	semi-remote	0.0	0.0	4.5	13.6	81.8
	remote	0.0	0.0	7.0	9.3	83.7
Hunting Opportunities	road-based	9.7	6.8	21.4	12.6	49.5
	semi-remote	14.6	2.4	7.3	26.8	48.8
	remote	1.2	5.9	23.5	18.8	50.6
Old Growth Forests	road-based	8.1	16.2	25.3	28.3	22.2
	semi-remote	2.3	14.0	25.6	27.9	30.2
	remote	4.7	5.9	25.9	28.2	35.3
Pristine Environment	road-based	0.0	1.0	13.3	29.6	56.1
	semi-remote	2.3	0.0	2.3	13.6	81.8
	remote	0.0	2.4	1.2	13.1	83.3
Quiet Surroundings	road-based	0.0	1.0	6.9	21.8	70.3
	semi-remote	2.3	0.0	6.8	11.4	79.5
	remote	0.0	0.0	3.5	8.2	88.2
Unique Flora/Fauna	road-based	5.9	22.8	29.7	26.7	14.9
	semi-remote	2.9	12.2	41.5	22.0	19.5
	remote	7.1	14.1	40.0	21.2	17.6
Water Quality	road-based	0.0	0.0	12.5	20.2	67.3
	semi-remote	0.0	2.3	7.0	20.9	69.8
	remote	0.0	1.2	8.1	19.8	70.9
Wildlife Viewing	road-based	0.0	8.7	26.9	33.7	30.8
	semi-remote	0.0	2.3	30.2	41.9	25.6
	remote	0.0	7.0	26.7	33.7	32.6

Table B.3.2: Expected Challenges (% based on accessibility)

Possible Challenges	Accessibility	Unlikely (1)	2	Neutral (3)	4	Likely (5)
Competition	road-based	8.7	12.6	33.0	30.1	15.5
	semi-remote	9.3	14.0	37.2	14.0	25.6
	remote	22.6	11.9	34.5	21.4	9.5
Financing	road-based	12.2	6.1	22.4	30.6	28.6
	semi-remote	4.7	16.3	27.9	25.6	25.6
	remote	22.6	14.3	21.4	22.6	19.0
Mining	road-based	27.3	14.1	28.3	15.2	15.2
	semi-remote	19.0	9.5	26.2	28.6	16.7
	remote	27.1	9.4	35.3	20.0	8.2
Attracting Visitors	road-based	10.9	10.9	29.7	21.8	26.7
	semi-remote	12.2	14.6	36.6	26.8	9.8
	remote	22.4	15.3	20.0	28.2	14.1
Recreationists	road-based	13.0	13.0	28.3	23.9	21.7
	semi-remote	11.9	2.4	16.7	19.0	50.0
	remote	8.2	2.4	8.2	16.5	64.7
Timber Harvesting	road-based	15.7	7.8	24.5	13.7	38.2
	semi-remote	7.0	2.3	16.3	4.7	69.8
	remote	5.9	1.2	2.4	10.6	80.0

Table B.3.3: Changes to Establishment in Past Five Years (%)

Past Changes	Road-based	Semi-remote	Remote
No changes	3.4	4.4	3.5
New services	6.3	11.8	5.0
Renovations	25.7	25.0	25.5
Catch & release	7.4	5.9	3.5
Increase marketing	31.4	29.4	29.1
Expand	8.6	16.2	12.8
Promote ecotourism	10.3	5.9	9.2
Other	6.9	0.0	9.9
Unsure	0.0	1.5	1.4

Table B.3.4: Planned Changes to Establishment in Next Ten Years (%)

Future Changes	Road-based	Semi-remote	Remote
No changes	3.9	0.0	3.1
New services	0.8	4.2	0.0
Renovations	40.2	39.6	33.7
Catch & release	1.6	0.0	2.0
Increase marketing	8.7	12.5	7.1
Expand	15.0	14.6	23.5
Promote ecotourism	17.3	8.3	8.2
Open in Winter	3.9	6.3	6.1
Other	5.5	4.2	6.1
Unsure	3.1	10.4	10.2

Table B.3.5: Relevance of CCFM Indicators (%)

CCFM Indicator	Accessibility	Not at all (1)	2	Somewhat (3)	4	Very (5)
Protected Forest	road-based	6.8	1.4	41.1	11.0	39.7
	semi-remote	0.0	0.0	26.5	20.6	52.9
	remote	3.3	0.0	21.7	26.7	48.3
Forest Sector Employment	road-based	9.3	4.0	45.3	22.7	18.7
	semi-remote	19.4	9.7	29.0	22.6	19.4
	remote	15.3	10.2	35.6	16.9	22.0
Recreational Opportunities	road-based	5.1	2.5	10.1	32.9	49.4
	semi-remote	0.0	11.8	17.6	20.6	50.0
	remote	1.7	6.8	23.7	18.6	49.2
Non-Timber Expenditures	road-based	4.2	4.2	27.8	33.3	30.6
	semi-remote	3.4	3.4	17.2	44.8	31.0
	remote	4.8	6.3	25.4	22.2	41.3
Forest-based Organizations	road-based	9.9	9.9	43.7	25.4	11.3
	semi-remote	16.7	10.0	26.7	33.3	13.3
	remote	8.5	13.6	42.4	18.6	16.9
Non-Timber GDP Contribution	road-based	6.7	2.7	33.3	24.0	33.3
	semi-remote	3.6	3.6	17.9	42.9	32.1
	remote	3.3	4.9	21.3	14.8	55.7

Table B.3.6: Indicators Suggested by Survey Respondents

Economic

longer term economic comparisons******
value of tourism over rotation age of forest as compared to timber harvests*
economic impact studies of various types of resource-based tourism*
compare stumpage fees to taxes paid by tourism over longer term*
percent of revenue spent locally*
revenue/square meter earned by timber harvesting versus tourism
tourism revenue before and after timber harvesting
economic value of remote tourism
total economic value of tourism versus other industries
account for all costs when reporting timber profits (replanting, rehabilitation, etc.)
value added comparisons
reason for customers not returning to tourism establishments
local economic value of remote tourism including services used, fuel, etc.
local incomes compared to the national average
percent of occupation of tourism establishments
total employment in all tourism sectors
trip cost comparisons between tourism areas

Access/Aesthetic Related

enforcement of road closures***
creation of permanent roads, long-term trends and impacts**
buffer sizes**
number of remote facilities operating**
percent of remote areas remaining*
survey guests to determine perceptions*
number of roads near remote lakes
percentage of cut blocks within four km of a tourism facility
survey tourism operator to determine logging impacts
monitor home and cottage building
enforcement of tourism guidelines
northern migration of fishing, hunting, and tourism

Social

co-operation between timber and tourism**
localized indicators that relate to small tourism areas
localize decision making for land-use planning
degree of input by tourist operators in policy development
diversity of recreational opportunities
area of protected recreational waterways

Ecological

impacts on fish and wildlife**
protection of old growth forest*
percent of protected areas*
erosion*
timing of harvesting and implications on wildlife
protection of bear habitat
changes in wildlife populations
percent of roadless areas
siltation of water

Miscellaneous Comments

forestry helps access tourism areas**
timber harvesting provides open spaces for wildlife*
find a faster growing tree
public education
cannot compare economics of tourism and timber

*denotes number of additional operators who suggested this indicator

Table B.3.7: Steps to Prevent Negative Impacts (%)

Preventative Steps	Road-based	Semi-remote	Remote
None	1.2	4.2	2.3
Guest education	15.0	5.6	10.2
Prevent Pollution	5.4	7.0	1.6
Catch & release	18.0	19.7	18.8
Fisheries Rehabilitation	1.8	2.8	0.8
Fuel Storage	6.6	7.0	8.6
Septic System	9.6	11.3	12.5
Conservation Fishing	4.8	4.2	3.1
Waste Management	18.6	22.5	21.9
Four Stroke Boat Motors	4.8	2.8	2.3
Limit Harvests/Guests	3.0	2.8	7.0
Other	11.4	9.9	10.9

Table B.3.8: Willingness to Provide Information (% by accessibility)

Type of Information	Accessibility	Both	NOTO	OMEDTT	Neither
Appraised Value	road-based	33.7	20.2	4.5	41.6
	semi-remote	39.0	31.7	2.4	26.8
	remote	48.1	26.6	6.3	19
Employment	road-based	46.1	20.2	7.9	25.8
	semi-remote	51.2	29.3	2.4	17.1
	remote	50.6	26.6	3.8	19
Local Expenditures	road-based	42.7	21.3	6.7	27
	semi-remote	51.2	31.7	0.0	17.1
	remote	51.9	27.8	5.1	15.2
Harvest Levels	road-based	39.3	29.2	9.0	22.5
	semi-remote	48.8	34.1	2.4	14.6
	remote	53.2	26.6	5.1	15.2
% Increase in Visitors	road-based	51.7	33.7	7.9	6.7
	semi-remote	58.5	36.6	0.0	4.9
	remote	60.8	26.6	2.5	10.1
% Repeat Visitors	road-based	50.6	37.1	5.6	6.7
	semi-remote	58.5	36.6	0.0	4.9
	remote	58.2	27.8	5.1	8.9
Revenue Generated	road-based	37.1	20.2	3.4	39.3
	semi-remote	34.1	26.8	2.4	36.6
	remote	41.8	25.3	5.1	27.8
Total Visitor Days	road-based	47.2	34.8	6.7	11.2
	semi-remote	58.5	36.6	0.0	4.9
	remote	57.0	32.9	3.8	6.3
Total Wages Paid	road-based	38.2	21.3	7.9	32.6
	semi-remote	48.8	29.3	2.4	19.5
	remote	48.1	25.3	5.1	21.5

Table B.3.9: Satisfaction with Policies (%by accessibility)

Policy or Practice	Accessibility	Unsatisfied (1)	2	Neutral (3)	4	Satisfied (5)
Mineral Extraction	road-based	10.5	7.0	66.7	7.0	8.8
	semi-remote	20.0	6.7	66.7	3.3	3.3
	remote	20.3	10.2	54.2	10.2	5.1
Timber Harvesting	road-based	16.2	25.7	40.5	13.5	4.1
	semi-remote	25.0	27.8	38.9	2.8	5.6
	remote	43.6	29.5	23.1	0.0	3.8
Bed Capacity	road-based	6.2	10.8	47.7	20.0	15.4
	semi-remote	5.6	5.6	47.2	33.3	8.3
	remote	15.8	21.1	36.8	19.7	6.6
Hunting Regulations	road-based	46.3	28.0	17.1	4.9	3.7
	semi-remote	53.8	25.6	12.8	5.1	2.6
	remote	44.9	15.4	16.7	14.1	9.0
Access Restrictions	road-based	26.0	15.6	39.0	11.7	7.8
	semi-remote	40.5	16.7	31.0	9.5	2.4
	remote	54.5	23.4	13.0	2.6	6.5
Tenure Agreements	road-based	5.6	14.8	64.8	7.4	7.4
	semi-remote	20.0	17.1	45.7	8.6	8.6
	remote	43.7	14.1	31.0	4.2	7.0
Government Promotion	road-based	26.1	20.7	35.9	14.1	3.3
	semi-remote	26.8	26.8	31.7	14.6	0.0
	remote	27.8	22.8	31.6	12.7	5.1
Agency Promotion	road-based	7.4	9.6	38.3	29.8	14.9
	semi-remote	17.5	7.5	35.0	32.5	7.5
	remote	3.9	10.4	26.0	42.9	16.9