

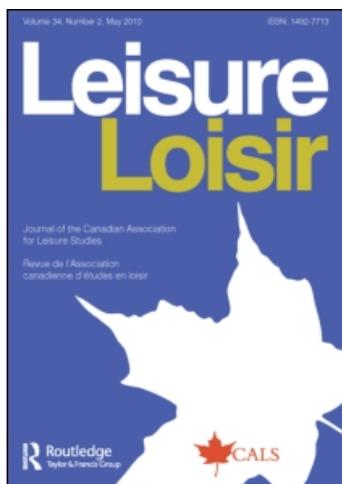
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Paul F. J. Eagles^a

^a Department of Recreation and Leisure Studies, University of Waterloo, Waterloo, ON, Canada

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Changing societal values and carrying capacity in park management: 50 years at Pinery Provincial Park in Ontario

Paul F.J. Eagles*

Department of Recreation and Leisure Studies, University of Waterloo, Waterloo, ON N2L 3G1, Canada

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All park planning and management decisions in parks are ultimately based on values. These values and meanings are translated into various forms and functions within parks. Dearden and Rollins (2009) stated that in Canada there has been a changing emphasis in park roles, and therefore changes in the underlying values and meanings over time, largely from an overt emphasis on recreation to an increased emphasis on ecological protection. This article traces the changes in values underlying the planning and management activities in Pinery Provincial Park in Ontario from 1957 to 2009. After the park establishment in 1957, increases in use reached a high of 1.2 million visitors in 1970. The recognition of problems associated with this very high use, by sectors of civil society and within the Parks Branch, led to a major evaluation of park management. New staff members were hired and a new approach to park planning and management was implemented. In 1971 a park Master Plan was approved for Pinery Provincial Park, the first of its type in Canadian park history. This plan used the concept of carrying capacity, with recreational and ecological components, as the underlying theoretical construct. This was the first time this theory had been used in park planning in Canada, and possibly anywhere. The plan and its implementation revealed that value changes, a domain change, can cause domain changes, leading into a new management regime.

Keywords: park planning; carrying capacity; regime change; history

Les valeurs sociales guident tous les aspects de la gestion d'aires protégées. La signification de ces valeurs est traduite en différentes fonctions au sein des parcs. Dearden et Rollins (2009) on déclaré qu'il ya eu un changement de philosophie envers les rôles des parcs canadiens, le loisir et la protection écologique. Ce document retrace l'évolution des valeurs sous-jacentes de la gestion du parc provincial Pinery en Ontario de 1957 à 2009. Après la création du parc en 1957, la consommation du loisir a atteint une somme de 1,2 million visiteurs en 1970. La reconnaissance des problèmes associés à cette utilisation très élevée, par les secteurs de la société civile et au sein de la direction des parcs, a conduit à une importante évaluation de cette gestion. De nouveaux employés ont été embauchés et une nouvelle approche de gestion a été mise en œuvre. En 1971, un plan directeur a été approuvé pour le parc Pinery, ce plan fut le premier de son genre dans l'histoire des parcs canadiens. Ce plan est basé sur le concept de capacité de charge et est composé d'aspects récréatifs et écologiques. Ce fut la première fois que ce concept et cette approche furent utilisés dans la gestion des aires protégées au Canada et peut-être ailleurs. Le plan et sa mise en œuvre démontrent que les changements de valeur et changement de régime peuvent provoquer

*Email: eagles@uwaterloo.ca

des transformations importantes dans ce domaine, donnant naissance à un nouveau régime de gestion.

Mots-clés: gestion d'aire protégée; capacité de charge; changement de régime; histoire

Introduction

All park planning and management decisions in parks are ultimately based on values. Dearden and Rollins (2009) suggested that these values include aesthetic, wildlife viewing, historical, spiritual, recreation, tourism, education, science, ecological capital, ecological processes and ecological benefits. Eagles and McCool (2002) discussed that parks represent different meanings to people including wilderness, community social function, hunting, business and profit, physical and emotional health, ecological preservation, recreation, meaning of life, native peoples' land conservation and historical and cultural preservation. Over time, each of these values and meanings were translated into various forms and functions of the parks across Canada. These values became parks, activities in parks, cultural facilities of parks and educational programs in parks. Any activity, human use or decision can be considered to be negative, neutral or positive depending on the values assigned to the site.

Dearden and Rollins (2009) stated that in Canada there has been a changing emphasis in park roles, and therefore changes in the underlying values and meanings over time. The values underlying park management have changed from a strong emphasis on recreation to a strong emphasis on ecological protection. In addition, the threats to parks have changed from internal, caused by high visitation, to external, caused by factors outside the control of parks (see Figure 1). This is a simplistic approach as it deals with only a small number of the values outlined above. This model possibly represents changes in the most dominant roles, from recreational to ecological, and changes in the most overarching threats, from internal to external. However, Dearden and Rollins (2009) provide scant evidence for these changes.

Values are translated into policies through a political process involving governments, citizen groups, corporations and individuals. Each stakeholder group has varying levels of power, depending upon the different circumstances. These groups often existed in the past and today continue to influence the creation and management of parks.

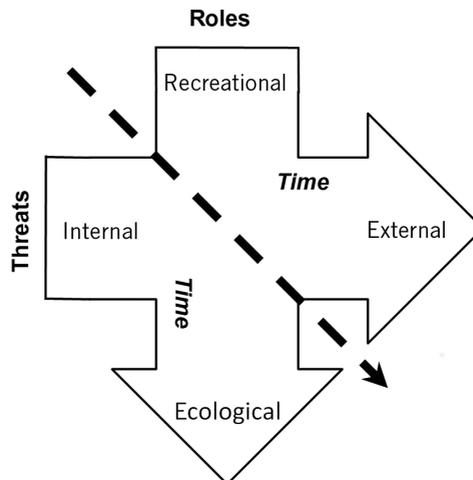


Figure 1. Changing role and threats in parks (Dearden & Rollins, 2009).

Whitelaw (2006) maintained that for change to occur in complex societal institutions there must first be a domain creation. A domain is a social space, as perceived and defined by the people and groups that share it (Francis, 2003). A domain change occurs when a new set of concepts and values predominate. With a new domain, a regime change is possible. A regime is created by the rules (laws, regulations and customs) which regulate interactions (Francis, 2003). Whitelaw, Eagles, Gibson, and Seasons (2008) showed how environmental movement organizations created new domains for two geographical areas in Ontario (Niagara Escarpment and the Oak Ridges Moraine), then assisted with regime changes for both areas involving entirely new legal frameworks and planning procedures. One of the major regime changes that occurred in park management took place with the introduction of the concept of carrying capacity.

The first scientific approach to carrying capacity within the field of parks and recreation was produced by Wagar (1964, 1968). He moved the concept from natural resources, as understood within forestry and fisheries, into social aspects, as occurs in recreation. Lucas (1964) applied the concept to the Boundary Waters Canoe Area in Minnesota in the USA. These three early papers established three elements within carrying capacity: a resource capacity, a visitor experience capacity and a managerial role in understanding and allocating capacity.

The publication of the paper by Hardin in 1968, entitled “The tragedy of the commons,” is often cited as representing a major change in the approach to the management of common property (Manning, 2007). In that paper, Hardin emphasized that dealing with overuse is a concept in morality, or in other words one of value. He emphasized that with regards to parks, the concept of open use for everyone can be seen as one example of overuse caused by common property concepts (Hardin, 1968).

The National Parks present another instance of the working out of the tragedy of the commons. At present, they are open to all, without limit. The parks themselves are limited in extent there is only one Yosemite Valley whereas population seems to grow without limit. The values that visitors seek in the parks are steadily eroded. Plainly, we must soon cease to treat the parks as commons or they will be of no value to anyone (Hardin, 1968, p. 1245).

One approach to assessing the validity of the Dearden and Rollins (2009) approach is to review the values and threats that occur in a case study site, over a sufficiently long period of time. Pinery Provincial Park in Ontario was chosen as a case study site because its initial development, in 1957, occurred the period three critical periods of park development in Ontario. These are described by Killan as the “Outdoor Recreation Boom” (1945–1967) and the “Problems of Expansion” (1954–1967). This boom and problem reconciliation was followed by the “Politics of Preservation” (1968–1974), all of which lead to the creation of modern Ontario Provincial Park System (Killan, 1993). The abundant visitor use data, planning documents and related literature on Pinery Provincial Park allows for a review of the Dearden and Rollins (2009) approach. This paper undertakes such a review by evaluating the planning and management activities in Pinery Provincial Park from 1957 to 2009.

Ontario Provincial Parks consist of a very large system of provincial parks and conservation reserves scattered across the entire province. The Ontario Provincial Park system started in 1893 with the creation of Algonquin National Park by the Government of Ontario. The name was changed to Algonquin Provincial Park in 1913 (Eagles & Bandoh, 2009). By 2009, the park system comprised 330 provincial parks and 292 conservation reserves encompassing approximately 7 million hectares of land and water and covering 9% of the province (Ontario Parks, 2008, 2009). After the creation of Pinery Provincial Park in 1957, it quickly became the most visited park in the Ontario Provincial Park system.

The Ontario Provincial Park system has had a consistent and comprehensive visitor monitoring system since 1956, providing a long-term data base on which to evaluate visitor use changes over time.

Methods

The methodology involved a review of the published literature on park planning in general and Ontario Provincial Parks specifically, as well as the planning and management documents available for the case study park. This was done in order to attempt to detect the values underlying park planning over time. In addition, a comprehensive data base of the case study park's visitor use data was compiled and analyzed. The Ontario Provincial Parks agency has published a visitor monitoring report each year since 1957. Reports were collected for all years from 1956 onward (Department of Lands and Forests, 1958, 1961, 1962, 1963, 1968, 1969, 1970, 1971; Division of Parks, 1958; Ontario Parks, 2007, 2008; Parks Branch, 1960, 1963, 1964, 1965, 1966). The literature and data base findings provided a description of what happened and the sequence of events.

In addition, two key people involved in creating the first management plan for the park were contacted to provide important factual and contextual background. These contacts were interviewed in an attempt to confirm and elucidate the causative factors for the planning decisions that were made. The interviews were critically important in that they enabled the development of an understanding of why decisions were made.

This information was used to assess changing societal values and the associated managerial responses, over a 52-year time period.

Results

In 1947, the Canada Land Company offered forested land along the shore of Lake Huron south of Grand Bend to the Ontario government for \$250,000. This land contained the largest oak savannah landscape in southwestern Ontario, approximately 10 km of beach, and a major sand dune system. The Minister of Lands and Forests of the day declined the offer because of the high cost. In 1951, a delegation from local municipalities in the area asked the provincial government to acquire the land, but was rebuffed. At that time, senior officials in the Department of Lands and Forests believed provincial parks should be vast crown lands in Northern Ontario, not small recreation-oriented parks in Southern Ontario (Killan, 1993).

In 1954, the government of Premier Leslie Frost introduced a bill into the Ontario Parliament to create a new legal structure for all provincial parks in Ontario. Previous to that time, each park had been created by orders in council or special purpose legislation. Quickly passed by the Ontario Parliament, this new Provincial Parks Act provided for two major functions: (1) the creation of provincial parks by regulation and (2) a legal structure underpinning management (Eagles, 1984). Also in 1954, the Frost government created the Division of Parks in the Department of Lands and Forests. This new unit was the first park management agency for provincial parks in Canada. Ben Greenwood was appointed the first director and served in this role until his death in 1960. Greenwood was dedicated towards creating a system of provincial parks throughout southern Ontario in order to satisfy burgeoning outdoor recreation demand. He acted quickly on the idea of purchasing the lands on Lake Huron south of Grand Bend. During 1955 and 1956, Greenwood worked on acquiring the lands for the Pinery Provincial Park. The Pinery acquisition was part of a

major program of park establishment in Southern Ontario, largely in response to the burgeoning outdoor recreation demand occurring in Ontario (Killan, 1993).

Killan (1993) maintained that the new Division of Parks of 1954 “launched the provincial parks expansion program, determined that sound planning would precede any development” (p. 99). From 1954 onward, the new management structure for Ontario Provincial parks focused on developing a professional framework for Ontario provincial park management. Two key aspects that governed this development were the new overarching legislation and a park agency with government employees dedicated to park management. This new structure enables an aggressive period of park creation, largely based on public demand for outdoor recreation.

In 1957, the Division of Parks was renamed the Parks Branch (Killan, 1993), a name and an institution to remain in the same form until 1996.

Following land acquisition along the shores of Lake Huron in 1956, the Parks Branch moved quickly to designate the land as a provincial park by regulation. Pinery Provincial Park was created by Regulation under the Provincial Parks Act by the Ontario cabinet on 11 October 1957 (Department of Lands and Forests, 1971). The park contained a spectacular landscape of forested sand dunes on the Lake Huron shore (see Figure 2). It was large, for a southern Ontario park, at 1909 hectares. It was enlarged in 1963, 1965 and 1967 to increase the size to 2532 hectares (Department of Lands and Forests, 1971). Its location in southwestern Ontario meant it was accessible to a large recreational market from the many nearby cities in Ontario including Kitchener, Waterloo, Cambridge, London and Windsor, as well as the major cities in southeastern Michigan, such as Detroit.

Recreational development started very quickly at Pinery after park creation in 1957. The park was opened for recreation use in 1959 (Ontario Parks, 2009). By 1961, 4 years after its establishment, Pinery had 900 camping sites and was the second most popular camping site in Ontario, after Algonquin Provincial Park (Killan, 1993). The development



Figure 2. The Ausable River in Pinery Provincial Park.

continued and by 1963 Pinery had 1075 campsites (Department of Lands and Forests, 1963). After 1983, no further campsite development was undertaken (Department of Lands and Forests, 1970). By 2008 the number of campsites was reduced to 1000, as some sites were removed because of environmental impact concerns on significant habitat types (Ontario Parks, 2008).

Since the Division of Parks of the Department of Lands and Forests was established in 1954, the initial Pinery park development from 1957 to 1961 occurred during the very early years of this novice provincial park agency. In 1954, the Division of Parks consisted of only the Director, three permanent staff and one part-time staff person. None of these people had any formal training in park management, largely since no such training was available in Canada at that time. All of their training was in some branch of forestry. In 1954, this small group had responsibility for the management of eight provincial parks. From 1954 to 1957, the new parks agency created 63 provincial parks, so by 1957 there were 75 parks open for public use (Division of Parks, 1958). In 1958, the Parks Division reported that since “practically all campground facilities were over-crowded during 1957, we should be prepared to increase all camper facilities by a very minimum of 50%” (Division of Parks, 1958, p. 5). This edict from the head office in 1958 to “increase all camper facilities” precipitated a rapid campground development in many parks, including Pinery. It is important to note that Pinery’s creation and development occurred during a time of administrative immaturity of the newly-created park management agency. The small number of enthusiastic, but poorly-trained, staff members engineered a massive park creation and park development effort. The rapid development would have some unfortunate and unanticipated outcomes, as will be noted below.

The rapid creation and development of provincial parks for outdoor recreation in Ontario was financed by the provincial government, responding to burgeoning public demand. From no development budget in 1954/1955, the budget increased to \$1.3 million by 1960. In 1960, the Ontario park budget was so large that only three US states spent more on parks than Ontario (Killan, 1993). Even with all this development, an estimated 30,000 people were denied access to provincial parks on the summer holiday week-ends of 1963 (Killan, 1993). This unfilled demand was recognized by the government of Premier John Roberts when he announced, in 1962, another increase, a \$200 million, 20-year parkland acquisition program (Killan, 1993). Burgeoning outdoor recreation demand had created a political impetus to quickly enlarge and develop provincial parks in Ontario.

As a result of a massive demand for camping and the associated head office edict to increase camping capacity, the initial mandate for the new Pinery Provincial Park was one of rapid tourism development. The underlying value was the creation of a park system to fulfill outdoor recreation demand.

As far as can be ascertained, in the initial period of Pinery development no overall plan was used for the development of tourism activities, infrastructure and outdoor recreation products. All development at Pinery was directed by the first two park superintendents, Keith Cameron and later Mel Jackson. Both men had graduated from the Ontario Forest Ranger School, with training in logging and road construction (R. Mitton, personal communication, May 29, 2009), but none had training in parks and recreation management. During this initial development, all senior employees of the Parks Division, later the Parks Branch, were university-trained foresters who also had no academic training in parks and recreation management. Therefore, the Pinery field staff members’ expertise was similar to others in the park agency.

For the initial development at Pinery Park, no ecological studies were undertaken and no social impact studies were done. For the initial development, the park superintendent

directed road and campsite development by using methods for locating logging roads, based on topography, drainage and soil factors, that were taught to forest rangers at the Ontario Forest Ranger School (R. Mitton, personal communication, May 25, 2009). This involved walking through the forest and finding a route based on the physical features observed.

In 1967, 10 years after the creation of Pinery Provincial Park, a major staffing expansion started within the Parks Branch, with many new staff hired. Tom Lee and Russell Irvine were hired in 1967, both of whom had M.Sc. degrees in Recreation Management from the University of Illinois. They were the first professionally trained park planners hired for the Parks Branch (Killan, 1993) and would ultimately have a major impact on the parks system by introducing more systematic and professional approaches to park planning and management. Tom Lee had the task of working on park level master plans. Russ Irvine worked on long range system plans. Ismet Olcay, a landscape architect, did site level planning (T. Lee, personal communication, May 27, 2009). These professionals in head office relied on the park naturalists within the parks for on-site park planning, since these individuals were the only university-trained staff in the field in parks at the time (T. Lee, personal communication, May 27, 2009). Robert Mitton, District Naturalist in the Aylmer District of the MNR, was an example of field naturalist with a university education. After his graduation from the forestry program at the University of Toronto in 1969, he started work as the Assistant Park Naturalist in Algonquin Park. He transferred to Rondeau Provincial Park in 1970 and was given Aylmer District responsibilities in the fall of 1970. In his role as the park naturalist for the parks of southwestern Ontario and his training in Forestry from the University of Toronto, he became the planning leader for Pinery's first Master Plan in 1971 (R. Mitton, personal communication, May 30, 2009). This staffing expansion in the late 1960s had created a new planning capability with the Parks Branch, with both head office personnel and field personnel who would then invoke systematic and more modern methods of park planning.

As the concept of ecology emerged in the 1960s, some people started to question the negative impacts of development and heavy recreation use on the sand dune forests as well as on the campers themselves. The concept of limits to use started to emerge.

Questioning of the impact of the development on the Pinery Park's flora and fauna started to occur in the 1960s within both the Ministry of Natural Resources staff and in academia. In 1964, Peter Addison, a regional forester reported that "the load of camping . . . is destroying the Pinery Provincial Park" (Killan, 1993, p. 142.). In 1967, Professor John Sparling was concerned about the visitor use and stated "At the present rate of use the park will be valueless [for educational and scientific purposes] in less than 10 years" (Killan, 1993, p. 142) (see Figure 3). Hardin's comment that the parks are "open to all, without limit" (Hardin, 1968, p. 1245) was valid for Pinery in the 1960s. In addition, his prediction that the "values that visitors seek in the parks are steadily eroded" (Hardin, 1968, p. 1245) is also a prediction of what would occur in Pinery Provincial Park because of overuse.

In addition, the massive numbers of park users overwhelmed the capacity of the park managers to maintain control. Rowdiness by large numbers of young people started to become a problem at Pinery. By 1963, the Parks' Chief Mr. Wheatley reported that he had received a flood of complaints from distressed family campers who "were subjected to the obnoxious, irresponsible and sometimes threatening behaviour of bands of inebriated youths" (Killan, 1993, p. 142). By 1967, park officials reported that on the 24th May, Victoria Day, holiday weekend they were "unable to cope with the situation" and the "teenagers were in control of the park" (Killan, 1993, p. 142). In one notorious incident in 1970, a



Figure 3. The Sensitive Sand Dune System of Pinery Provincial Park.

gang of 200 motorcyclists invaded the park, ignoring park regulations, riding their machines through the fragile dune systems and defying park staff (Killan, 1993). What had started as a noble desire to provide more camping for southern Ontario citizens in 1957, had turned into a major management problem by 1970. The outdoor recreation activity encouraged by the extensive park facility development had spiralled out of control.

These problems would later be labelled as negative environmental and social impact, but in the 1960s these terms were not used in the Ontario Parks Branch and were not widely used in park management.

In 1967, the Parks Branch introduced a new park policy that was designed to establish a policy framework for “positive and effective development and management” (Killan, 1993, p. 166). Two important elements of that policy were a park classification system and a zoning policy for Ontario Provincial Parks. Henceforth, all parks would be classed into one of five categories: primitive, wild river, natural environment, recreation, or nature reserve. Each class had a unique set of management policies and allowable activities. The policy dictated that each park would use a standardized zoning system, with zones such as primitive, natural, historic, recreation and in Algonquin Provincial Park a multiple-use zone was also used to accommodate logging. The zoning would be implemented through the development of a master plan for each park. This 1967 policy, which had largely been developed by Jim Kennan, the first supervisor of long-range planning with the Parks Branch (R. Mitton, personal communication, May 25, 2009) and encouraged by non-government organizations such as the Federation of Ontario Naturalists (Killan, 1993), moved park management in Ontario into a more systematic and professional realm. When Tom Lee became the first master planner for Ontario Provincial Parks, the class and zoning policies were in place but had not yet been operationalized (T. Lee, personal communication, May 27, 2009). Lee started to put into place a system of park-level plans that would use this overarching policy envelope in the field.

This 1967 policy encouraged the creation of statements of management policy for individual parks, first known as Master Plans and later renamed Management Plans. It took several years after the recognition of the problems emerging at Pinery, in the mid 1960s, for the park agency to hire staff members who had the skills and responsibility to rethink park management through the creation of a Master Plan. In 1971 Peter Addison, by then the Chief of the Parks Branch, engaged Tom Lee and Russ Irvine as park planners. Since Pete Addison had observed the problems at Pinery when he was stationed in southwestern Ontario in the late 1960s, he dictated that a plan be developed for Pinery Provincial Park. Tom Lee, the Park Master Planner in head office, was given the job to direct the project, whereas Robert Mitton, the District Naturalist for southwestern Ontario, was assigned the main field planning role in the park (R. Mitton, personal communication, May 30, 2009)

During the last 6 months of 1971, Tom Lee and Robert Mitton authored the first Master Plan for Pinery Provincial Park. Mel Jackson, the Park Superintendent, is credited by G. Killan (1993) as being an author, but his only role was to inform the authors of law enforcement issues (R. Mitton, personal communication, May 25, 2009). The plan was written, approved and implementation began in the last six months of 1971. The speed of plan creation, approval and implementation was a major accomplishment (T. Lee, personal communication, May 27, 2009). The plan “proposed an effective zoning system, the redesigned of campgrounds and day use areas and new operational policies to control rowdiness and the degradation of the environment” (Killan, 1993, p 240). The creation and implementation of Pinery Master Plan in 1971 was the first time that the Parks Branch’s overall policies of park classification and zoning were put into practice within a park in Ontario.

It is important to note that the concept of creating a master plan for each park had been formulated in the mid 1960s by the National Park Service of the USA (T. Lee, personal communication, May 27, 2009). The idea was investigated in the 1960s within Canada by the Canadian National Parks officials and by the Ontario Provincial Parks Branch head office employees. However, the Pinery Provincial Park Master Plan of 1971 was the first park-level master plan formerly approved and implemented for a provincial park or national park in Canada. An earlier park master plan had been written for Cypress Lake Provincial Park in 1968 by Tom Lee, but was never formally approved (Killan, 1993; T. Lee, personal communication, May 27, 2009). Other park master plans were underway at the time in Canada, such as for Algonquin Provincial Park and Banff National Park, but the plans were not finalized until after 1971 (T. Lee, personal communication, May 27, 2009). Therefore, the creation of the 1971 Pinery Master Plan was a precedent-setting event in Canadian park history.

The Minister of Natural Resources, René Brunelle, recognized the urgent need for better planning at Pinery. In his Foreword within the 1971 Master Plan he stated: “The urgency of planning in Pinery Park has been recognized as being of first magnitude. The pressures of increasing public use as well as the unique values which the park possesses warrant the detailed analysis provided by a master planning program” (Department of Lands and Forests, 1971, p. 5.). However, the planning was constrained by a lack of detailed information on many aspects of the park, such as the plants, wildlife, fisheries, waterfowl and surficial geology. The planners found that “no reliable information has been made on the environmental deterioration that has occurred in areas of heavy use” (Department of Lands and Forests, 1971, p. 35). The Plan contained a section entitled: Problem areas in Need of Resolution. These problem areas included:

- Conflicts between day users and campers;
- Severe traffic congestion;
- Severe environmental damage along the dune areas adjacent to the beach;

- Conflict over a high number of campers trying to choose a finite number of sites;
- Dune damage due to snowmobiling in the winter;
- Dune damage due to trail bikes, four-wheeled vehicles and pedestrian traffic in the summer;
- Lack of reliable information on the vegetation, landforms and wildlife;
- Delinquent activities of some users;
- Problems with user access through non official trails and access points; and,
- Poor traffic circulation system (Department of Lands and Forests, 1971).

Virtually all of these problems were related to recreational use. The problems had been created by previous decisions of the field staff members, including the park superintendents, towards excessive development and ineffective recreation management. In 1971 new staff members, with their up-to-date ideas from their recent university training, started to take charge from the old guard field personnel in order to solve a major management problem. The crisis situation at Pinery provided an opportunity for a major and rapid advance in park planning and park management practice. A regime change occurred quickly, with a whole new approach and new staff members.

The 1971 Master Plan introduced the concept of an “official policy relating to capacity and types of use” (Department of Lands and Forests, 1971, p. 10). This was the introduction of the concept of carrying capacity into Ontario Provincial Park planning. The plan stated flatly that “The Park has now reached capacity levels of development” (Department of Lands and Forests, 1971, p. 14). The plan used the concept of visitor capacities to “ensure the retention of quality recreational experiences” (Department of Lands and Forests, 1971, p. 13). These concepts were introduced into Ontario park planning by Tom Lee, based on his graduate education in recreation at the University of Illinois, and Bob Mitton, based on his forestry education at the University of Toronto (T. Lee, personal communication, May 27, 2009; R. Mitton, personal communication, May 30, 2009). They took on the task of moving carrying capacity theory into park planning practice.

This plan changed the overarching management emphasis from the quantity of outdoor recreational activities to an emphasis on quality. The planners recognized that this plan was the first of many to come, at Pinery and elsewhere, and therefore this plan would have a leadership role. The plan stated that, “Pinery Park can make a significant contribution to man’s understanding and appreciation of his environment” (Department of Lands and Forests, 1971, p. 13).

This 1971 plan introduced major changes into the operation of the park. Prominent new policies included:

- A change from an emphasis on tourism volume to one of experience quality;
- A major reduction in tourism volume;
- The pre-selection of a camping sites;
- The removal of some inappropriate facilities;
- The prohibition of all-terrain vehicles, horseback riding and motorcycles;
- The prohibition of organized sports that required facilities;
- The prohibition of commercial recreation facilities that required facilities, such as golf courses;
- A prohibition of power boating on the Ausable River;
- The building of new visitor facilities more compatible with environmental resources;

- Enhanced education and visitor programs;
- The restoration of damaged ecosystems;
- The restriction of camping to designated campsites;
- A special program for youth;
- The designation of nature reserves within natural zones;
- No commercial logging;
- No waterfowl hunting;
- Encouragement of field research on targeted species and ecosystems;
- Encouragement of specialized plans for deer, fish and beaver to be developed in the future;
- Recommended planning for an outdoor center for educational, laboratory, interpretation and museum facilities;
- Planning for a public transit system;
- Increasing the training and capacity of park rangers as police officers; and,
- Strict enforcement of new rules governing visitor behaviour.

All of the recreation and management activities were assigned to a series of zones outlined by map in the Master Plan. Implementation of the plan started immediately after publication and approval. The recreation activities moved from high volumes of a wide number of activities, to smaller volumes of a few activities that were more appropriate to the sensitive natural landscape. This can be described as a movement from quantity to quality.

A revised Master Plan was published in 1977 (Ministry of Natural Resources, 1977), and a third plan was produced in 1986 (Ministry of Natural Resources, 1986). No other management plans have been produced since 1986.

In 1978 an alcohol ban was introduced for holiday periods in Pinery and many other parks (Killan, 1993). This policy proved to be so successful in reducing rowdy behaviour that it has been continued to the present time.

In later years, two of the authors of the first plan became very prominent in park management in Canada. Over the years they had many successively important positions in parks in Canada, with Tom Lee becoming the Chief Executive Officer of the Parks Canada Agency and Robert Mitton becoming the Deputy Minister of the Ontario Ministry of Natural Resources. Mel Jackson left the park agency and operated a local auto repair shop in the Grand Bend area.

The effect of the planning and management policies in regards to tourism can be assessed by looking at visitor use volumes over time. Since 1956 Ontario Parks operated a visitor use monitoring program, with the publication of annual reports. Therefore, visitor use data are available for the entire history of Pinery Provincial Park.

There was no visitor use recorded in the first years of 1957 and 1958, as the park was not yet open to visitation. In the first 10 years of operation, from 1959 to 1968, the visitor use grew to 500,000 visitors, and then dramatically tripled in the next 4 years as the park staff emphasized fulfillment of recreation demand. By 1970, 15 years after park establishment, the park facilities were fully developed and the use had increased to 1.72 million visitors per year (see Figure 4). This problems associated with this massive levels of use were a major factor in giving the impetus to the Parks Branch to approach planning and management in an entirely new way.

After the first Master Plan implementation started in late 1971, there was in a steady reduction in visitation volume in the period of 1972 to 1975. By 1975, the use was reduced to 400,000 visitor days of recreation per year, a reduction of 68% over 4 years. Over the

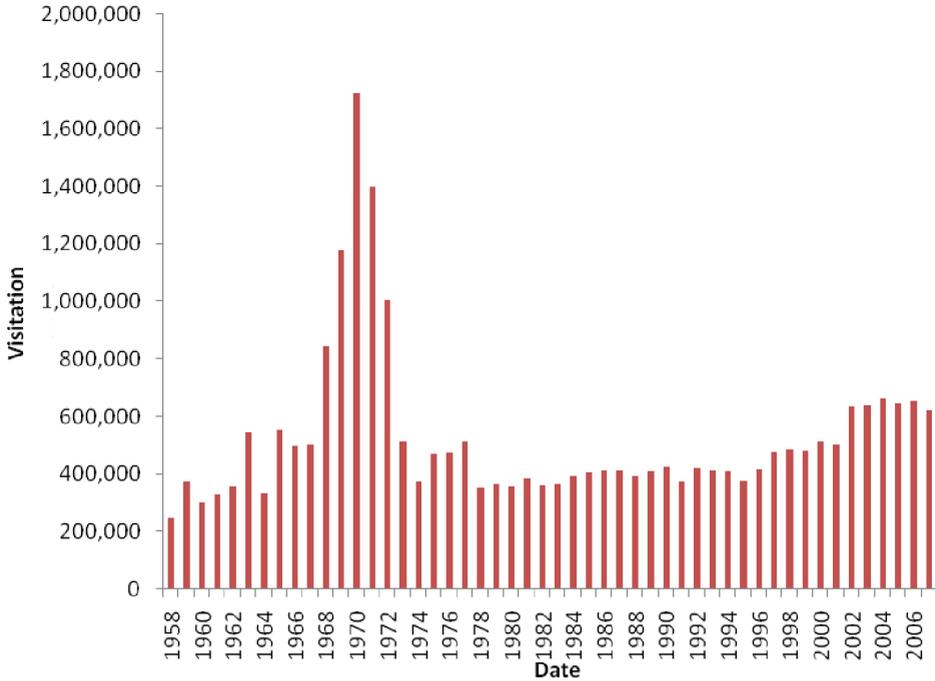


Figure 4. Visitor Use of Pinery Provincial Park (1957–2008).

next 30 years, visitor use grew gradually to 633,000 visitor days in 2003. The use remained close to that figure over the next 6 years, from 2003 to 2008 (Ontario Parks, 2007, 2008).

These data reveal that the 1971 Master Plan was very successful in achieving its objective of reducing visitor use to a carrying capacity level that was more appropriate to the ecological and social carrying capacity of this sensitive landscape.

The data shown in Figure 4 were collected using two different field methods. From 1956 to 1977 visitor counts were obtained by axle count methods, whereby mechanical hoses stretched across a park road measured the number of wheels that passed by. A survey found the composition of the traffic which led to the creation of a constant for the number of axles per vehicle. A survey found the average number of people per vehicle which was translated into a constant. The visitor number was a calculated figure obtained from the axle count, a vehicle type constant and the vehicle contents' constant. This method is well known to inflate visitation, due to the counting of entrants as well as visitors (Eagles, 2007). From 1979 onward, visitor numbers were calculated from permit sales. The year 1978 was a transition year (Eagles, 2007). However, the dramatic swelling in Pinery visitation took place from 1969 to 1975, during the axle count period. Therefore, the changes shown occurred during a time of consistent data collection methods and are not the result in a change of methods.

All major recommendations of the 1971 plan were implemented, except for one. As the visitation declined in the 1970s, the need for a public transit system was eliminated. It is important to note the difficulty involved in implementation all of the policies found in the 1971 plan. The reduction in the numbers of visitors involved high levels of enforcement and policing. It took many years of difficult public relation efforts to get public acceptance on the limits on the types, volumes and areas of recreational use. In addition,

changes were made in the field personnel in order to obtain managers with a higher level of skill in dealing with recreation management.

In 1971 formal procedures for park planning were just getting underway in Ontario Provincial Parks. All of the planning staff members were recent university graduates and recently hired employees of the Ministry of Natural Resources. These young people reported to foresters and forest rangers who held all the positions of power in the Parks Branch. R. Mitton (personal communication, May 29, 2009) reported that up to that time “nobody working in planning was very powerful in those days.” In addition, “Pinery was the first time that planners were called into a situation that presented problems that the park managers could not cope with.” (R. Mitton, personal communication, May 29, 2009). The edict from the Director of the Parks Branch Pete Addison that a park plan be developed for Pinery was “not welcomed by the district manager” (R. Mitton, personal communication, May 29, 2009). The obstacles in front of the young planners were considerable, but the crisis situation also provided an opportunity for people with foresight and strength of character.

It is also important to note that in 1971 the park superintendent had several hundred thousand dollars available for capital development in Pinery Park (R. Mitton, personal communication, May 30, 2009). The planners were under pressure to develop a rational plan at the same time as rampant development proceeded unabated. A dramatic example of the conflict is illustrated by the following story told by the park planner, Robert Mitton (personal communication, May 27, 2009):

During the 60s and 70s there was tension between the planning and interpretive people and the line managers who developed and operated parks. The operations managers were under the gun to get the parks system expanded in terms of capacity. They viewed the planning and interpretive types as either slowing them down or trying to block their “progress.” This was certainly the case during the master planning for Pinery. I found myself nose to nose with the District Parks Supervisor, Keith Cameron, my boss, and the District Forester, Bill Clarke (my boss’s boss). They had several hundred thousand dollars for capital development at the Pinery and planning or no planning they were going to spend it. At the park level the superintendent was, typically, completely in accord with forging ahead. One of the projects was a large comfort station in an existing campground. The comfort station and associated large septic field had been located in a moist flat meadow rich in botanical values and surrounded by sand dunes. The master plan, then in its first draft identified these values and had designated this area as a natural zone. I tried every avenue in the district office to get the building stopped or deferred without success. Finally, the stakes were in the ground and excavation was to begin on a Monday morning. On Sunday evening after dark, I went to the park and removed all the stakes and took them away in my trunk. Over the next few days I kept a fairly low profile knowing that my act of insubordination could be terminal. Actually, I think I did tell Tom Lee and Bill Charlton at HQ because they were mentors and confidants and I was a very young and furious person. Anyway, the missing stakes did delay the project . . . pending the completion of the master plan.

That wetland is now recognized as a nationally-significant wet meadow containing the nationally-endangered plant Bluehearts (*Buchnera americana*). The wet meadow was first recognized in a nature reserve zone in the park management plan of 1971 and subsequently was protected by the installation of a chain link fence. In 2009 the park managers permanently removed 12 campsites from the Burley campground, near to this wet meadow, in an effort to restore more of the nationally-significant ecosystem that is in or under the campsites (Ontario Parks, 2009). This entire ecosystem would no longer exist except for the dramatic efforts of a “very young and furious” park planner who put his job on the line to save it. This one story from the Pinery planning effort is an example of a

regime change. The people who held the new values supplanted the older regime with new approaches and rules.

The Pinery planning effort was a professional-driven exercise. It was essentially one group of young, highly-educated professionals with new ecologically-sensitive values taking power from an older group of technically-trained people fulfilling an early mandate of rapid recreation development. The changeover was so rapid because of the perception of a crisis situation that needed a solution.

After the approval of the Pinery Master Plan in 1971, other planning efforts produced approved plans in quick succession for Bronte Creek in 1972, Forks of the Credit in 1973, Algonquin, Killarney, Fathom Five, and Short Hills in 1974, Mono Cliffs, Frontenac, Ouimet Canyon in 1975, Quetico in 1977 and Polar Bear in 1980 (Killan, 1993; T. Lee, personal communication, May 27, 2009). As anticipated in the Pinery Master Plan, that effort had created a template for a cascade of similar efforts in other provincial parks.

Interestingly, the 1986 Management Plan listed 41 references, where the first 1971 plan had none. These references in the 1986 plan reveal that the policy in the 1971 plan to encourage scientific studies had been successfully implemented. In 1986, a new direction in resource management occurred with the draft publication of the park's first comprehensive resource management strategy (Crabe, Bonenberg, & Klinkenberg, 1986). The final report was released in 1988 (Crabe, Bonenberg, & Klinkenberg, 1988). This document was assisted by the findings from 42 scientific research projects conducted in the park from 1977 to 1986. This report was a highly specific refinement of the various recommendations of the 1986 Management Plan. Some of the recommendations included: removal of planted white pines, more dune stabilization with dune grasses, conservation work on endangered species and, very significantly, the introduction of fire management. This report signalled the movement into science-based, site-specific resource management for this park. Subsequently, other natural resource topics were addressed, such as the creation of a detailed plant inventory (Bakowsky, 1990) and the impacts on vegetation of an overpopulation of White-tailed Deer (Mainguy, 1992). However, this science research and policy development was largely concerned with natural heritage issues, while very little research was done on visitor management and tourism. No other major planning or management efforts have occurred at Pinery since the early 1990s.

Conclusions

The Pinery Provincial Park in Ontario provides an example of how changes in values over time lead to different interpretations of what is acceptable in terms of tourism development and environmental protection. Pinery had an initial rapid development, a major reassessment of priorities, and then a substantial policy change designed to bring recreation impact more into line with an emerging ecological value and recreation quality rather than *laissez faire* approach to fulfilling recreational demand.

The 1957–1971 period was marked by administrative immaturity combined with an overt emphasis on fulfilling a burgeoning outdoor recreant demand, which had led to a very rapid and destructive initial period of development. The period of 1971–1986 was one of the implementation of a sophisticated overarching policy of planning and zoning, as well as increasing professionalism. The period of 1986 onward was one of advanced, science-based management for natural resources.

Cole (2003) maintained that “The ability to make these decisions appears to be the limiting factor in progress related to carrying capacity” (p. 5). This case study revealed that as early as 1971 the Ontario Parks Branch had the ability to make hard decisions in

regards to carrying capacity issues. In addition, the agency had the ability to successfully implement those decisions relatively quickly. This is an early and successful implementation of the carrying capacity principle.

The concept of zoning had been proposed for the national parks of Canada in 1960, with refinement of the concept throughout the 1960s (Yapp & Barrow, 1979). The concepts of zoning and carrying capacity were closely related in Canadian park planning and by 1979 the implementation of carrying capacity concepts through zoning was apparent in Ontario Provincial Park planning. By 1979 within Canada, only national parks and Ontario provincial parks had a master planning efforts underway (Yapp & Barrow, 1979). Therefore, Ontario Provincial Parks was the first provincial park system in Canada to utilize the concepts of carrying capacity, zoning and master planning. It is significant that the high profile Pinery management problems encouraged a progressive park agency to hire young staff members with advanced education in parks and recreation planning and then encouraged them to provide solutions to the problems through the adoption of the carrying capacity concept which was operationalized through zoning within a park-level master plan. The successful implementation of the 1971 Pinery Master Plan encouraged the adoption of these concepts throughout the Ontario Provincial Park system, and later in provincial park systems across Canada.

Simplistically, this case study can be seen as an example of a conflict between tourism development and ecological protection in a park. This case study partially confirms the model of changing roles and threats proposed by Dearden and Rollins (2009). Overall from 1960 to 1980 there was a change in policy emphasis from recreation to environmental protection, confirming part of that model. The recreation overuse was replaced by lowered use levels and more emphasis on recreation quality. None of the official park plans make any reference to external threats becoming more prominent than internal issues in the later years, a disagreement with the model. Over time, science-based resource management replaced a virtual ignorance of natural environment values. Technically-trained managers were replaced by professionally-trained people. As ecological protection matured as a value, it became refined as scientific research provided a better foundation on which to base decisions. However, it would be wrong to say that recreation was replaced by ecological protection, the concept was more nuanced. In the Pinery case study, high recreation volume was replaced by lowered volume, and *laissez faire* recreation was replaced by appreciative recreation which was more suited to the sensitive natural environment. Initial emphasis on the importance of tourism development was replaced by a value system that called for a different balance between recreation use and ecological protection.

It is important to note that the initial Pinery development occurred between 1954 and 1970. When the major management re-evaluation took place in 1971, environmental impact assessment legislation did not exist in Ontario (the Environmental Assessment Act was passed in 1976), the first recreation management program at a Canadian university had not yet produced graduates (the Department of Recreation and Leisure Studies at the University of Waterloo, the first of its type in Canada, started in 1968), the teaching of ecology was getting established at universities, and land use planning had recently become a university program (The School of Planning at the University of Waterloo, now the largest Planning School in Canada, started in 1968). In this context, the 1971 Pinery Master Plan can be seen as progressive and responding quickly to changing values about recreational activities in parks and emerging ecological management trends.

This Pinery case study shows how changes in society's attitudes towards recreation, ecology and park management worked together to produce changing concepts of values within park planning and management. These newer values were translated into practice

by aggressive and capable young professionals. This case study revealed that the key change agents were individuals given a task to solve a problem in a crisis situation.

This Master Plan process at Pinery showed that the Ontario Provincial Parks system policy of requiring the preparation of an overall park management plan for every park could be successfully undertaken. Subsequently, the preparation of policy plans for each park became an agency-wide policy, and in 2006 became a legal requirement (Eagles, 2007).

To the park agency's eternal credit, when problems were detected, new people with the latest ideas from an American and Canadian universities brought in new theory, new policies and plans to deal with the problems. These staff members were able to successfully move the early carrying capacity theory (Lucas, 1964; Wagar, 1964, 1968) into practice. The Pinery Master Plan was the first successful use of this concept in parks planning in Canada. The emerging professionalism of the park agency was a critical element of the issue not mentioned in the Dearden and Rollins (2009) model.

This case study revealed that the concept of capacity limits was used effectively in Ontario Provincial Parks in 1971. This contrasts with Manning's (2007) statement that the National Park Service of the United States only got "serious about addressing the issue of carrying capacity" (p. xi) in the early 1990s, 20 years later than occurred in Ontario. It is possible that the Pinery Master Plan was the first park plan anywhere to effectively use the concept of carrying capacity within the creation of park management policies.

The rapid increases in park use leading at Pinery up 1970 created an impetus in some sectors of civil society and in the Parks Branch for change. The paper reveals that a new domain creation (new or modified planning boundaries) based on the theory of carrying capacity led to a regime change (new planning rules and new staff members) within a new land use planning system. The changeover was remarkably fast, as new ideas and people quickly supplanted older ideas and earlier power brokers. The key actors implementing the new regime were government staff members who were able to make substantial change due to the perception of a crisis situation in some sectors of civil society and at the highest levels in the park agency.

This case study shows that as values changed in society, the park management priorities in this park agency changed accordingly. It showed how the park agency developed new procedures, in this case a whole new management planning policy, in response to perceived value shifts. In the long run, it showed how changing societal values on acceptable activities are reflected in park management. As discussed earlier, all park management is ultimately concerned with the social values. As values change, planning priorities change. Effective organizations are those that are able to adjust to these changes. A key factor in the effectiveness of an organization is the hiring of people who have the knowledge and ability to implement change based on new ideas.

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