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REVIEW PAPER

**MANAGEMENT MODELS
FOR
ANTARCTIC TOURISM**

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It is frequently the very unspoiled and unique nature of natural resources that attracts tourists...In most cases these attractions are irreplaceable. It seems self-evident that it is in the tourism industry's interests to ensure that such resources are managed in a manner that protects their intrinsic values. Regrettably, the logic of this self-interest has not always prevailed ...

INTRODUCTION

Within the tourism literature generated, there has been a development of 'management models' designed to describe, explain, manage, control and predict the spatial organisation of tourism activities in differing contexts. It is pertinent then, to examine the concept of an Antarctic tourism management model, its application in Antarctic tourism, and the value in explaining and predicting tourism development in critical environments such as that of the Antarctic. One hesitates to utilise the term 'tourism development' with regard to Antarctica, where a preference of the terms, 'tourism management', 'tourism restraints' and 'tourism controls' is more readily acceptable. However, in order to identify suitable management models for the Antarctic, some attention must be given to the management models incorporating development, such as the principles for the sustainable development of tourism.

A large proportion of tourism in under-developed and developing countries constitutes nature-based tourism, in particular, tourism in parks and protected areas, a significant number of which are located in mountainous regions. Their potential for tourism has been well exploited, for example, in the Western European Alps, the North American Rockies, and, to some extent, the Himalayas. However, as a mountain destination normally experiences higher intensity of tourism development, the potential for conflict between maintaining a healthy natural environment and economic development also increases. The World Tourism Organisation defines the term sustainable tourism as one which improves the quality of life of host communities, provides a high quality experience for the guest, and maintains the quality of the environment on which they both depend (WTO, 1993). There are numerous examples throughout the world where mitigation efforts in the name of sustainable tourism have been self-serving and reactive,

rather than proactive. The Nepalese Himalaya is only one such area where sustainable development measures were developed in response to foreseeable problems, rather than in order to prevent problems occurring in the first instance.

With regard to Antarctica, Beck heralded management as the key issue ahead for Antarctic Treaty Partners and identified the lack of 'control mechanisms' within the current sketchy framework (1994, p.379). Davis (1999, p. 5) argued that 'current methods utilised to manage Antarctic tourism lack a comprehensive approach to tourism management within a wilderness'. Furthermore, at a regional scale, two of the core objectives of Gateway Antarctica are to 'enhance the management of human impacts and human activities in Antarctica', and to 'co-ordinate the provision of policy advice to government organisations'. These objectives are in alignment with the objectives of this review paper; to provide an informed perspective about various management models utilised, or models proposed as management tools, in order to effectively manage Antarctic tourism. To inform this research, current literature on Antarctic tourism models and management models with potential Antarctic application have been reviewed. This paper discusses and outlines both the management models that have been considered and proposed for Antarctic tourism over the past decade, and the generic management models with a potential Antarctic application.

CONCEPTUAL CONTEXT

The growth of tourism management as a field of research is a reflection of the emergence of tourism as a major sector of the global economy. Antarctica has been a tourist destination for over four decades. At present, management planning for the entire continent of Antarctica relies on guidelines (Recommendation XV111-1, of the Environmental Protocol to the Antarctic Treaty) and the goodwill of tour operators and tourists. Over the last decade there has been recognition of the inadequacies pertaining to the existing system of regulation. The guidelines are predominantly principles of common sense, and whilst they are often conceptually useful, they offer no practical advice on how to achieve the objectives set out in the guidelines. Furthermore, there is no management philosophy save to avoid more than a 'transitory impact' on Antarctica

as it is a natural reserve, devote to peace and science (Protocol, Article 2). Nature teaches us that nature parks and designated wilderness areas necessitates the implementation of a management philosophy to guide specific tourism policies (Hendee, Stankey & Lucas, 1990; Nash, 1982; Runte, 1987).

ANTARCTIC TOURISM DEFINED

Tourism is a major and growing component of the Antarctic economy. It is difficult to decide on the definition of an Antarctic tourist, but one option is to classify all visitors as either business or pleasure tourists. Technically all humans in the history of Antarctica have been tourists, as there are no permanent residents.

In the Antarctic, tourism is defined as all existing human activities other than those directly involved in scientific research and the normal operations of government bases. Tourist activity is primarily concentrated on cruiseship and flight operations in the region of the Antarctic Peninsula, the Ross Sea, and associated Sub-Antarctic islands. However, more recently, increasing interest has been shown in the commercial tourism potential of the Australian and New Zealand Sub-Antarctic islands and associated Antarctic territories (Hall, 1992a).

The study of management models with regard to Antarctic tourism necessitates the discussion of Antarctic tourism for the purposes of this research; what forms of tourism are found in Antarctica. Definition is important because it is the basis for common understanding and communication, and it provides a basis for putting a concept into action through creating and preserving a referent.

Many forms of tourism are to be found in Antarctica; wilderness tourism, adventure tourism, wildlife tourism, sustainable tourism, scientific tourism, heritage tourism, the all-embracing nature tourism, and its more elitist 'offspring', eco-tourism. The broadest definition of Antarctic tourism could encompass the broad characteristics of alternative tourism. The common feature of 'alternative tourism' is the suggestion of an attitude diametrically opposed to what is characteristically viewed as mass tourism. Alternative

tourism often is presented as existing in fundamental opposition by attempting to minimise the perceived negative environmental and socio-cultural impacts of people at leisure in the promotion of radically different approaches to tourism; examples of which include ecotourism, green tourism, 'nature-oriented tourism', 'soft tourism' and 'defensive tourism'.

Furthermore, as sub-groups of alternative tourism, adventure tourism, scientific tourism, heritage tourism, wilderness tourism, wildlife tourism, sustainable tourism and ecotourism can be considered components of the 'over-arching' nature tourism. These classifications of tourism can all be found operating to varying degrees in Antarctica.

Certainly, tourism based on interactions with wildlife is increasing in popularity. Reynolds and Braithwaite (2001), present a conceptual framework that begins to classify the major components of wildlife tourism/recreation, and indicates the roles of and the relationship between these components. They suggest that the values of conservation, animal welfare, visitor satisfaction, and profitability are often in conflict in wildlife tourism, and 'trade-offs' are necessary. While there are a range of factors involved, the most germane are impact on the environment and the quality of the experience.

One could argue that contemporary Antarctic tourism is primarily dominated by heritage tourism and wildlife tourism, deeply embedded in the more generic wilderness tourism. The strength of this argument rests on the large numbers of ship-borne tourists visiting Antarctica each season, and the fact that Antarctica is hailed as the 'last great wilderness'. Other forms of tourism that have been increasing in popularity over the last decade are adventure tourism, and the more elitist form of nature tourism, ecotourism.

Whilst adventure tourism is self-explanatory, there is no one definition of ecotourism. Any conception of ecotourism must involve travel to relatively undisturbed or uncontaminated natural areas with the objective of studying, admiring and enjoying the natural environment of that area. An important point is that the person who practices ecotourism has the opportunity of immersing him/herself in nature in a way that most

people cannot enjoy in their routine, 'urban existence's'. As there is no strict consensus on a specific definition of ecotourism, it had been suggested it also is responsible travel that conserves natural environments and sustains the well being of local people.

For the purposes of this paper, the principles of wilderness tourism will be the preferred option in order to identify suitable management models for Antarctica. This form of tourism is adopted due to wilderness tourism being one possible vehicle capable of producing the desired outcome for the future of Antarctic tourism; that of a strong relationship between tourism, recreation and wilderness conservation. An increasingly popular notion of the value of wilderness has been provided by what is often termed a deep ecology perspective. Deep ecologists argue that wilderness should be held as valuable not just because it satisfies a human need (instrumental value), but as an end in itself (intrinsically valuable). Wilderness tourism, therefore, requires further explanation.

Wilderness tourism is an elusive concept with many layers of meaning. Tuan (1974) argues that wilderness cannot be defined objectively, and is as much a state of mind as a 'description of nature'. The problem of defining wilderness was summarised by Nash (1967, p. 1): 'Wilderness has a deceptive 'concreteness' at first glance. The difficulty is that while the word is a noun, it acts like an adjective. There is no specific material object that is wilderness. The term designates a quality that produces a certain mood or feeling in a given individual and, as a consequence, may be assigned by that person to a specific place. Because of this subjectivity, a universally accepted definition of wilderness tourism is also elusive. Wilderness, in short, is so heavily freighted with meaning of a personal, symbolic and changing kind, as to resist easy definition.

The declaration of the Wilderness Act in 1964 marked the beginning of the current legislative era of wilderness protection in the United States. Under the Wilderness Act, wilderness is defined as 'an area where the earth and its community of life are untrammelled by man, where man himself is the visitor that does not remain'. This definition has parallels with the Antarctic ideal.

The four defining qualities of wilderness areas protected under the Act are that such areas:

1. Generally appear to be affected by the forces of nature, with the imprint of man substantially unnoticeable;
2. Have outstanding opportunities for solitude or a primitive and unconfined type of recreation;
3. Have at least 5,000 acres or is of sufficient size to make practical its preservation and use in an unimpaired condition, and;
4. . May also contain ecological, geological or features of scientific, educational, scenic or historical value .

According to Dasman's (1973, p.12) classification of national parks and equivalent reserves, wilderness areas have two principle purposes , 'that of protecting nature (defined as primary) and that of providing recreation for those capable of enduring the vicissitudes of wilderness travel by primitive means'. These principle purposes are in strong alignment with the Antarctic ideal. The area is maintained in a state in which its wilderness or primitive appearance is not impaired by any form of development , and in which the continued existence of indigenous animal and plant species is assured (Dasman, 1973, p.12). However , unlike some of the use limitations of strict natural areas, wilderness is available to visitors .

One could argue, that the ideal extreme Antarctic wilderness could evoke a feeling of absolute aloneness, a feeling of sole dependence on one's own capacities as new sights and experiences are encountered. The challenge and the refreshing and recreating power of the unknown are provided by unadulterated natural wilderness large enough in space for us to get 'lost' in. In Antarctica it is possible once again to depend upon our own personal faculties and to hone our bodies and spirits. Noble words, but an experienced Antarctic visitor is well aware that the individual in Antarctica is largely dependent on an extremely structured support network. Nonetheless , the true experience of the Antarctic wilderness as outlined above can become a possibility, if only fleetingly, if managed

accordingly. The wilderness tourism principles, though idealistic, have potential application for tourism within the Antarctic environment.

TOURISM MANAGEMENT MODELS

As outlined in the conceptual context, management planning for the entire continent of Antarctica relies on guidelines, and the goodwill of tourists and tour operators. Whilst these guidelines are largely principles of common sense, their ongoing role in protecting the Antarctic continent has been questioned by researchers (Enzenbacher, 1995; Stonehouse & Crosbie, 1995). In addition to this, the significant management challenge arising from the unusual legal status of Antarctica is further complicated by the fact that there is no permanent secretariat. Furthermore, tourism activity is almost exclusively confined to the two months of relatively open waters, mid-December through mid-February, which coincides with the austral summer research season, when scientific stations are operating at full capacity. Davis (1999) argues that the first step towards devising a comprehensive management plan for the Antarctic would be to specify the goals and objectives. Davis (1999) has recently proposed the Limits of Acceptable Change (LAC) visitor management model for use and application in the Antarctic environment. National parks in the United States and Australia have adopted this model over the last decade. This approach acknowledges the inevitability of change with use in a natural environment and focuses on the limits managers set for change. One must postulate – is this a potential 'dumbing-down' of Antarctic tourism, and is there an element of inevitability embedded in the LAC model? Also, who are the managers? The LAC framework has been developed for application in wilderness and natural areas where recreation or resource needs are threatening to intrude on the values of these areas. An integral part of the LAC process is the development of classes based on environmental conditions. This is a theoretical means of compartmentalising the forms of recreation sought in settings ranging from wilderness to urban (Davis, 1999). The nine steps of this model are designed to gather information and provide guidance for decision-making:

- Step 1 is concerned with the identifying of area issues and concerns. According to Davis (1999), this step has largely been undertaken through the writing of management plans for specific areas under Amlex V, Article 5 (SCAR, 1993), of the environmental Protocol.
- Step 2 defines and describes the opportunity classes; managers decide what level of tourism use or development is permitted. By setting standards for conditions users and managers will agree on appropriate activities and agree on a certain level of change. An example of this is where a 'pristine' wilderness area, within the group of established tourism sites, could be described as an area of unmodified environment, low interaction among ships, no more than a specified number of tourists per season and no overnight camping.
- Step 3 selects indicators of resource and social conditions. Due to the fact that the LAC model is issue-driven, the result is that indicators that identify how the issue is affecting the given area must then guide it. Thus, in order to know if an area is to be 'pristine', (a value judgment made by managers), the indicators might be quantified in such a way as to relate to that quality. For example, this may involve no other ships being seen at site, no more than 100 tourists in a single day, and no more than one landing per week.
- Step 4 deals with inventory existing resource and social conditions. According to Davis (1999), as in the case of other models, an inventory process must be undertaken. For the LAC model it is not necessary to inventory all the conditions at each site. The focus is intended to be selecting conditions that can be defined by the indicators.
- Step 5 specifies standards for resource and social indicators, and in doing so, decides upon the actual quantitative measure for each indicator, thereby establishing the standard. Davis (1999, p. 526)) argues that the lack of development in Antarctica means that the range of environmental classes would be different for those of most natural areas. This is because the LAC model is designed for existing areas, and therefore the establishment of standards will be different in Antarctica from those of existing areas (Yellowstone National Park, for example).

- Step 6 is designed to identify alternative opportunity class allocations, with the objective being to decide what each area will represent in the wilderness area.
- Step 7 identifies management options for each alternative. This is carried out by a comparison between current conditions and the standards set for that area.
- Step 8 involves the evaluation and selection of a preferred alternative, where managers need to evaluate the situation and select a strategy from the list of prescriptions obtained in Step 7.
- The final stage, Step 9, is concerned with implementing actions and monitoring. Davis (1999) advocates that once the prescription has been selected, the program must be implemented and its effectiveness monitored. The frequency of monitoring is a function of cost, and because of this, the establishment of monitoring priorities for the given situation is encouraged. Davis (1999) argues that in Antarctica, the 10-15 heaviest visited sites would be the most appropriate to monitor.

Whilst the LAC model is the sole management model proposed for Antarctic tourism to date, an important concept in the context of Antarctic tourism management is carrying capacity. Carrying capacity has been utilised in Antarctica to some extent and with some success, within heritage and wildlife tourism. Four different carrying capacity types are generally identified within this concept: physical; psychological or perceptual; social; and economic. With respect to the physical carrying capacity of tourism, it denotes the maximum number of tourists that can use a specific area over a specified length of time without serious interruption of the natural habitat. If this capacity level is exceeded, the environment is seriously damaged and may never recover. Carrying capacity also has another meaning in the experiential sphere:

Carrying capacity is the maximum number of people who can use a site without a unacceptable alteration in the physical environment and without an unacceptable decline in the quality of the experience gained by the visitors.

(Mathieson & Wall, 1982, p.21)

Research in recreational settings in North America suggests that the most impact upon the biophysical environment occurs within the first few years of development and that there are critical stages in the progressive change of the environment (Mitchell, 1979). This suggestion is most relevant in the Antarctic environment. Thus, any research into physical effects of tourism development should start before the first development occurs in order to establish a meaningful baseline inventory (De Pomier, 2001). In addition, longitudinal investigations are needed to allow for better planning and management of future tourism developments.

A further factor that has affected the management and development of Antarctic tourism over the past decade, is the recent history of the International Association of Antarctic Tour Operators (IAATO). Its impmiance in coordinating tourism industry activities in Antarctica, and its acceptance by the Antarctic Treaty Community has led to IAATO being considered a valuable tool for successful tourism management. However, one major problem to note is that mandatory membership of IAATO cannot be enforced. This serves to limit its scope as a 'regulatory body'. It has been of some concern that Adventure Network International recently revoked its membership to IAATO.

But should Antarctic tourism be linked with the concept of 'development' in the first instance? Most definitely this will be a future issue with regard to Antarctic tourism. In order to redress some of the concepts discussed, and to give some weight to the positive aspects of tourism in the Antarctic, the idea of the sustainable development of tourism is briefly discussed. The sustainable development of tourism causes many people to feel good because it reconciles consumerism and environmentalism. These are contrary values existing side-by-side in many individuals' personalities that can be sharply opposed in relation to tourism. Sustainable development does not mean 'no environmental impacts': that is an impossibility in tourism. Tourism requires open interactions with a range of environments, a condition technically known as 'open systems'. The better argument in favour of the sustainable development of tourism in the Antarctic is not that it would potentially help tourism, but that it would potentially conserve life. Policies for environmental sustainability in other activities, such as

manufacturing and mining, are not justified because they help manufacturing and mining. Therefore, similar attempts to justify the sustainable development of tourism should seem suspicious. However, the argument for a special case with tourism is spurious. The best justification for the sustainable development of Antarctic tourism in the future, despite the many complexities, is that it conserves Antarctic life, in all its essential diversity, conserving the complex and fragile eco-system of the southern-most biosphere. Benefits for Antarctic tourism should be seen as a byproduct of that argument, not its basis. If this could continue to be recognised in the Antarctic environment, tourism industry associations would endorse pro-environmental policies in general, not merely those which help certain forms of tourism.

CONCLUSION

Tourism in its usual modern styles cannot be totally managed, by managers employed in tourism industries, by managers in regional or national bureaucracies, by individual tourists, or by all those categories in combination. Inevitably there will be future experiences which cannot be planned or coordinated or controlled. However, increased public awareness of the environment, sustainable development, World Heritage areas, Biosphere Reserves, and other sites of international conservation significance, highlight the worldwide attention given to the preservation of the earth's remaining wilderness areas. Davis (1999) has argued that the limits of Acceptable Change (LAC) model lend itself to a general application in Antarctica. However, one must question the difficulty of selecting site indicators in the Antarctic environment, and caution the complacency demonstrated when inevitable change as a result of increased tourism is accepted. IAATO as an organisation and regulatory body are only just keeping the tide of potential consumerism and commerce at bay. Current methods of Antarctic management do lack a comprehensive approach to tourism management within a wilderness, with existing regulations being only general and reactive.

Furthermore, based on current scientific knowledge of tourism development in Antarctica, neither an unconditional endorsement nor an overall rejection of tourism can be rationally justified. Without sufficient management and a realistic threshold based on

adequate coherent data, the ecological, environmental, and socio-cultural problems associated with the tourism industry will significantly increase. Antarctica's potential tourism-induced environmental problems are part of a larger picture in which environmental deterioration and politics are intertwined.

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