Options for Visitor Management in the Antarctic
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Submitted by ASOC

Summary

Although the ATCM has had extensive discussions on tourism in recent years, few decisions have been made about how to manage tourism. ASOC believes that it is important for the ATCM to establish precautionary rules for the growing number of visitors to minimise human impacts on the Antarctic environment. One method of doing so is to establish a system for visitor management. In this paper, ASOC describes systems for visitor management used in Australia, Svalbard, and the United States and suggests how these lessons could be applied to Antarctic tourism.

Introduction

The ATCM has had extensive discussions on many aspects of tourism over the years. This is likely due to the fact that in the last 20+ years, Antarctica has seen an increase in the number of tour operators, modalities of operation, and number of tourists visiting Antarctica. The ATCM has so far settled on self-regulation and site-specific guidelines as the primary modalities of regulation and on site management. However, if tourism continues to expand this approach may become ineffective. It is important for the ATCM to establish precautionary rules for the growing number of visitors to minimise human impacts on the Antarctic environment.

Over 90% of Antarctic tourism takes place on the Antarctic Peninsula and this creates both challenges and opportunities for visitor management (Student et al. 2015). Even on the Peninsula, the distribution of visitors is extremely unbalanced, with just 8 sites supporting 55% of all landings in 2007-8 (Lynch 2010). Concentrating visitors in just a few areas makes site management easier and reduces the total area impacted by tourism, but there is also a greater potential for sites to be damaged by cumulative impacts (Bender et al. 2016). By creating a precautionary strategy for how visited sites should be managed, the Antarctic Treaty Parties can ensure continued protection of the environment and prevent future management problems. Given uncertainties about the effects of tourism - by itself, and in combination with other stressors - much of this strategy will need to be based on a precautionary approach.

For the past several decades, the International Association of Antarctica Tour Operators (IAATO) has implemented a system of industry self-regulation, while also promoting compliance with ATCM regulations governing all Antarctic activities including those that apply to tourism (which are relatively few and mostly hortatory). Although IAATO represents the majority of companies operating in the region, it remains a voluntary organization. It is ultimately the responsibility of the Antarctic Treaty Consultative Parties (ATCPs) to implement binding rules for activities in Antarctica, including tourism. Effective oversight by ATCPs will therefore benefit the environment as well as the tourism industry by preventing the uncontrolled growth of tourism that could harm the Antarctic environment and by preserving Antarctica’s unique qualities for future generations. This is of particular importance in an era of climate change.

One aspect that the ATCM should focus on is visitor management. At its best, visitor management fosters a connection between people and wilderness that cultivates interest and engagement while ensuring that the increased attention does not result in the degradation of the environment. Many countries and regions have implemented such systems at important sites to preserve important ecological features. ASOC believes that the ATCM can use these examples to create a framework for on the ground management of Antarctic tourism, adapting and improving them as required by the characteristics of Antarctica. As the activities of the tourism industry continue to grow, bringing more visitors and increasing pressure on certain sites, the need for such a framework becomes more urgent.

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In this paper we explore some of the approaches used globally to manage tourism, some of which may be applicable to the Antarctic Treaty area, where the protection of the environment and values shall be a fundamental consideration for the planning and conduct of all activities.

**Examples of visitor management systems**

Adaptive management of visitors to tourist sites, a management style “characterised by cycles of monitoring, evaluation, planning, and action” has found success due to its flexibility and ability to accommodate competing interests (Reigner 2012). In the US, one such system is the Visitor Experience and Resource Protection (VERP) framework established in the early 1990s. VERP was created to manage carrying capacity in the National Park System (Manning 2002). Carrying capacity, a term originally developed with an eye towards wildlife management, has long since been adapted for use in tourism management as well (Kennell 2015). Unlike in wildlife management, the term carrying capacity as it pertains to tourism encompasses both an environmental and a social impact; that is, visitors can have an impact not only on the environment but also on the experience of fellow tourists (Manning 2002).

The VERP framework consists of 9 steps divided into 4 distinct phases:

**Framework Foundation**
1. Assemble an Interdisciplinary Project Team
2. Develop a Public Involvement Strategy
3. Develop Statements of Park Purpose, Significance, and Primary Interpretive Themes

**Analysis**
4. Analyse Park Resources and Existing Visitor Use

**Prescriptions**
5. Describe a Potential Range of Visitor Experiences and Resource Conditions (Potential Prescriptive Zones)
6. Allocate the Potential Zones to Specific Locations in the Park (Prescriptive Management Zoning)
7. Select Indicators and Specify Standards for Each Zone; Develop a Monitoring Plan

**Monitoring and Management**
8. Monitor Resource and Social Indicators
9. Take Management Action

VERP was first implemented in Arches National Park in the US and has subsequently been used in parks ranging from Denali to Alcatraz (Manning 2002). One of the most common issues to be addressed by VERP is that of overcrowding. Alcatraz, Denali, and Arches all determined acceptable levels of crowding for guests so that visitor limits could be set, parking areas shifted, or bus routes adjusted (Manning 2002; Manning & Hallo 2010). VERP has also been used as a template for forming management plans in other countries (Fefer 2016). Fefer (2016) found VERP to be an effective framework when the capacity (i.e. human resources, funding, etc.) to implement it existed. Problems occurred primarily when an organization had failed to plan enough in advance to determine whether implementing VERP would be possible given time and resource constraints.

Australia has its own version of this process, called the Tourism Optimization Management Model (TOMM). TOMM was developed in response to a dramatic increase in visitors to a remote “tourism icon destination” (Jiricka et al. 2014). Recognizing the opportunities and challenges of such an influx of people, community members, environmental groups, tourism groups, and government agencies collaborated with the help of a consulting agency to create a managing plan for a particular area. TOMM integrates social, environmental, and economic values by providing a consistent flow of information from a robust monitoring system (Miller et al. 2005). First introduced on Kangaroo Island, TOMM has subsequently been adapted and used in remote tourist locations in seven European countries (Jiricka et al. 2014). The TOMM framework’s effectiveness hinges upon the long-term commitment of stakeholders to maintain an effective monitoring program. A set of agreed upon sustainability indicators are tracked and used to inform management decisions in a transparent and evidence-based process.
There are also a number of lessons that can be taken from visitor management in the Arctic, where accessibility, safety, and environmental concerns share many similarities to those in the Antarctic. Particularly, the high Arctic archipelago of Svalbard\(^2\) bears close scrutiny as it has no native population, is sparsely populated, and has also seen an increase on tourism in recent decades. Although more than 65\% of land in the archipelago is under some form of protection, there is some argument whether monitoring is sufficient to determine the true impacts of tourism on the islands. East Svalbard, where protection is highest, has been the focus of the fiercest debate, with some groups demanding outright closure of visited sites due to the lack of monitoring (Viken et al. 2016) - and equally other groups of tour operators asking for sites to remain open.

The most recent management plan for East Svalbard, which will be in effect from 2015-2023, strengthens environmental protection, increases travel restrictions without dramatically curtailing existing tourism activities and limits the potential for expansion into areas that are not currently in use (Pedersen et al. 2015). Hagen (2012), suggests that more site specific and evidence based management plans could be more effective and alleviate the frustrations of stakeholders while leading to a more effective and transparent management scheme. Creating a comprehensive and scientifically rigorous monitoring program for all of Svalbard would be impossible, so a compromise of some sort between effective monitoring, use of the precautionary principle, and trusting the responsible behavior on the part of tour operators seems likely (Nyseth 2016).

**Visitor management in the Antarctic context**

ASOC hopes that ATCPs can draw relevant lessons learned from the above examples, while emphasising that any system of visitor management will need to be specific to the Antarctic context. In addition, visitor management is often a challenging process. For example, carrying capacity per se has been proposed as a tool to manage tourism, but it has been considered exceedingly difficult to apply, since it requires time-consuming assessments of what the environment can withstand at particular locations. It is important to note that determining carrying capacity of the visitor experience (as distinct from the environment's carrying capacity) also requires that managers make value judgements as to the visitors’ desired outcome (Booth and Espiner 2006). Only after a goal has been decided is it possible to create a coherent strategy for managing an area subject to high standards of protection. Input (either direct or inferred) from tourists, scientists, and other stakeholders can help clarify management goals.

IAATO’s system of scheduling vessels and groups so that interaction is avoided indicates an effort to create a special experience based on the absence of a significant (or apparent) human presence. This is something that tourists appreciate in a remote and isolated natural area like Antarctica. ASOC suggests that carrying capacity of the visitor experience might be easier to measure and can be used as an indicator that the environment is under pressure. The quality of the tourism experience can be used as a proxy to measure tourism pressure on the environment. In other words, a deterioration of the tourism experience at some locations might indicate that the tourism pressure is excessive. Implementing a system of visitor management that takes this indicator into account could help preserve the current experience, and indirectly reduce pressure on the Antarctic environment.

One of the biggest hurdles facing the implementation of adaptive management plans – the costs associated with long term monitoring – is being steadily chipped away at by technological improvements. For example, remote camera networks can be used to cost-effectively monitor sea-bird populations over large spatial scales (Southwell 2014) and satellite imagery has advanced far enough to make a global census of Adélie penguins possible (Lynch 2014). Adapting these techniques to monitor indicators in a tourism management plan can complement on-the-ground monitoring of individual sites and increase its effectiveness.

Developing a strategy for visitor management in Antarctica has the benefit of being able to draw on the successes and failures of tourism management schemes from around the world - including Antarctica itself. It is not a coincidence that many fairly successful management frameworks tend to take a similar shape-set goals, create a monitoring system, and decide on a plan for management action. It is a logical progression that remains effective even if the specific context of the location substantially influences the ultimate results. Manning (2006) has even suggested that frameworks like VERP should not be considered independent

\(^2\) Svalbard is the modern Norwegian name of the archipelago historically known as Spitsbergen (or Spitzbergen).
processes to be applied to a park or conservation area but rather should become an integral part of the park management and indistinguishable from everyday activities. It is the commitment to the original goals and the capacity to enact them that sets apart a successful management scheme from a failed one. Therefore, any management plan for Antarctic tourism must be founded upon a set of goals decided upon by the ATS with awareness of the particular Antarctic context. Namely, the Antarctic does not have a central competent authority to regularly monitor implementation as is found in the examples discussed above; and furthermore, the protection of environmental, wilderness, science and other values plays a stronger role than in other parts of the world.

For the past many years, the ATCM has examined various aspects of tourism in Antarctica, often inconclusively, including discussions on a strategic vision and on the implementation of the recommendations of the CEP Tourism Study. Thus far, ATCPs have acknowledged that the ATCM is ultimately responsible for managing tourism in Antarctica. Resolution 7 (2009) recommends (among others) that “Antarctic Treaty Parties…should…aim to ensure, as far as practicable, that they continue to proactively develop regulations relating to tourism activities that should provide for a consistent framework for the management of tourism” (ATCM 2009). Many of the recommendations of the CEP Tourism Study, including Recommendation 6 (establishing an on-site monitoring programme) and Recommendation 8 (identifying a range of potential management options for tourism activities) similarly point towards the need for a comprehensive system of monitoring and management driven by ATCPs.

Finally, recent discussions on developing a strategic approach to managing tourism identified as priority areas the “development of a work plan focused on tourism,” “how best to prevent or regulate the further expansion of tourism activities in Antarctica” and “increasing and encouraging the level of monitoring of tourism activities” (New Zealand and India 2016). Carrying out a process similar to those described in above would be a logical next step towards turning these discussions, recommendations and resolutions into concrete management and monitoring tools.

**Recommendations**

ASOC recommends that the ATCM should re-start a process of determining specific goals for Antarctic tourism, with the objective of creating a management framework within 10 years. The experiences of managing tourism around the world - such as the examples used here - may help to identify what works, what does not work, and what might work in Antarctica, at least for those regions and sites that are under significant pressure from tourism (different approaches may be necessary at other regions where tourism is developing, for instance with respect to land based tourism). Unlike other natural areas, Antarctica is a region declared "a natural reserve, devoted to peace and science" where environmental protection is paramount, and this should guide visions as to how tourism should be managed, both by stakeholders as applicable, and by Antarctic Treaty Parties.

ASOC recommends that key outcomes from this process should be to:

- Establish tourism strategic management goals.
- Identify practical tools available to manage tourism on the ground, and monitoring tools as appropriate.
- Identify locations where tourism pressure has resulted in an apparent decline of the tourism experience and make those locations a priority for monitoring. Use data from these locations to develop indicators of environmental pressures that can be used for all tourist sites.

A sample timeline for this process could be:

- Agree on a common vision for Antarctic tourism (2017-2020)
- Update CEP Tourism Study to analyse current tourism sites and their use (2018-2020)
- Develop a management and monitoring program, including indicators of environmental pressure (can be linked to current work on site sensitivity analysis) (2020 – 2024)
- Implement monitoring and management (2025-2027).
References:


Nyseth, T., & Viken, A. (2016). Communities of practice in the management of an Arctic environment: monitoring knowledge as complementary to scientific knowledge and the precautionary principle?. Polar Record, 52(01), 66-75.


