



TOURISM IN THE POLAR REGIONS

The Sustainability Challenge

UNITED NATIONS ENVIRONMENT PROGRAMME



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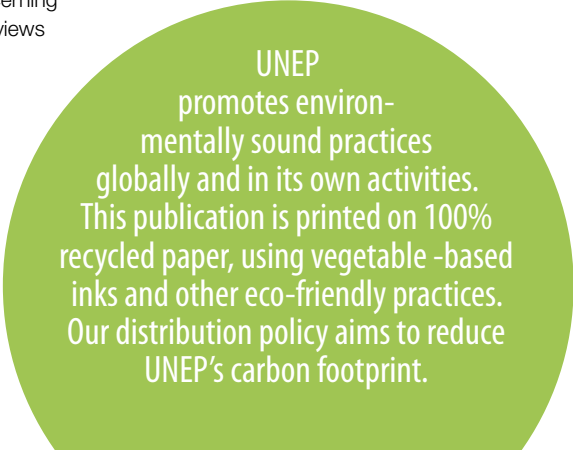
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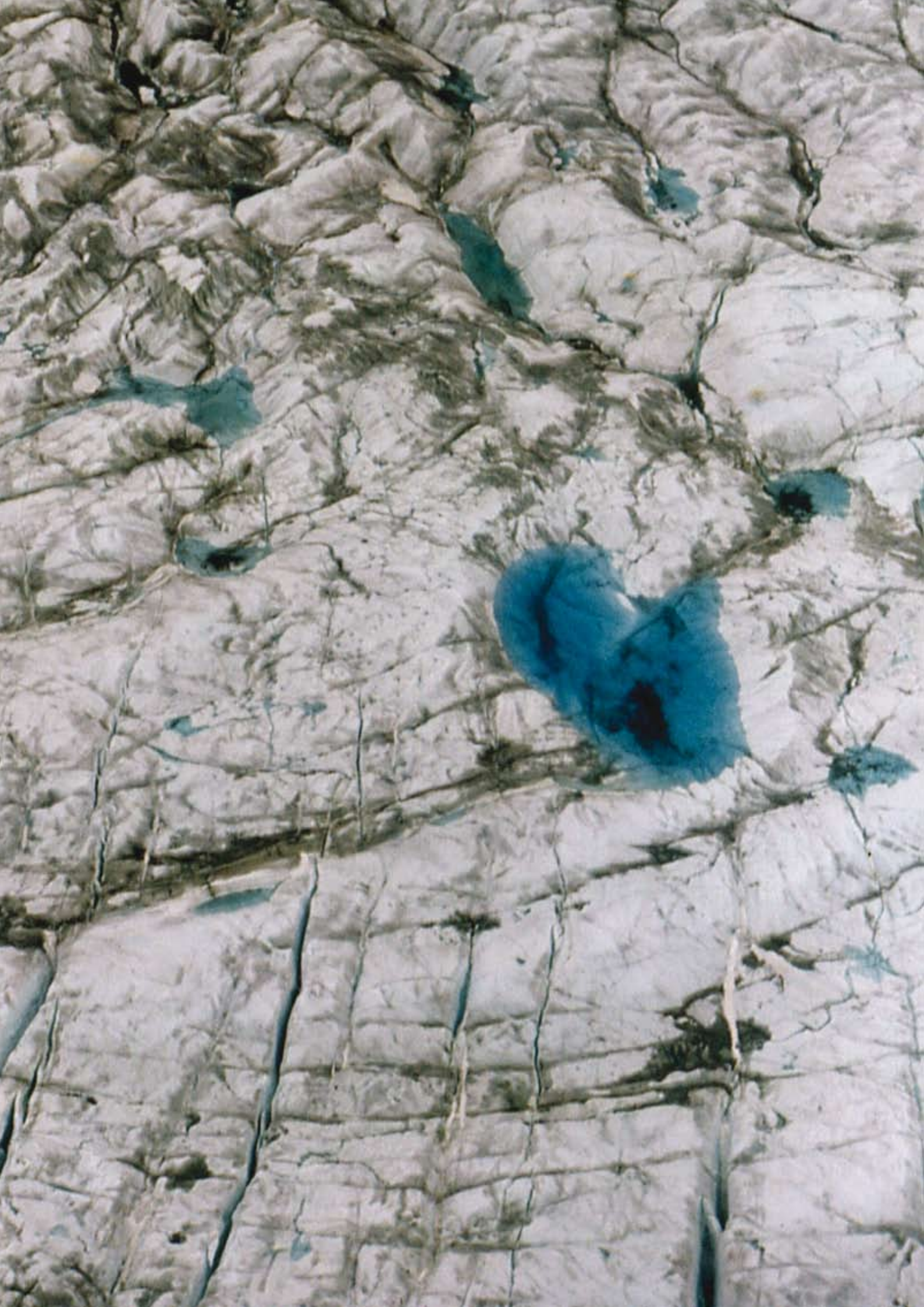
The Sustainability Challenge



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Foreword

The rapid growth of tourism over recent decades presents both challenges and opportunities. No part of the globe is now untouched by the world's biggest industry and that includes the polar regions.

The ability of modern shipping and aircraft to access even the most remote parts of the planet fueled by factors including growing disposable income in developed and increasingly developing economies and a rising interest among consumers for 'new experiences' are leading to more and more visitors looking to the poles for holidays.

Regions, once the preserve of local and indigenous communities and scientists by virtue of their location and often extreme and sometimes harsh weather conditions, are now very much on the fashionable tourist map and cruise line schedules.


Travel to the Polar Regions is now raising concern amid worries that the fragility of some polar environments may be compromised by the number of visitors and the activities undertaken. These in turn may put additional pressure on land, wildlife, water and nature-based resources. There are also safety concerns centered on the capacity of countries and the international communities to respond to an accident involving say a cruise ship.

However, tourism is an activity that sustainably managed and with profits and revenues fairly shared can also contribute to the well-being and livelihoods of local communities in the Arctic. Indeed tourism revenues may provide resources for the conservation of Polar environment by providing greater economic opportunities and choices for local people.

This publication evaluates the extent of the vulnerabilities and proposes an agenda of key issues that may help governments, business stakeholders and NGOs to design and implement management techniques in order to prevent negative impacts, maximize the benefits and conserve the environmental quality and cultural integrity of the Polar Regions.

Tourism in the Polar Regions is being published to mark World Environment Day 2007 with its theme focused on climate change via the slogan 'Melting Ice—A Hot Topic?'

We hope this publication will contribute to a more sustainable future for the Polar Regions, including improved capacity to adapt to the climate change already underway, while helping to forge closer partnerships and ties between the United Nations and interested parties, scientists, companies, Arctic communities and organizations.



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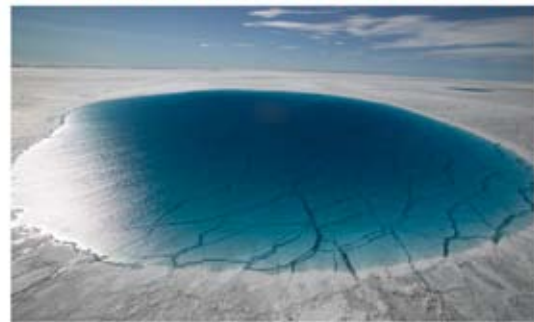
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MELTING ICE - A HOT TOPIC?



ask...



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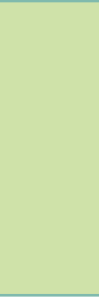


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Introduction and Background

1



The Significance of Polar Tourism

During the past two centuries tourism has grown to become the single largest human presence in many Arctic regions. Visitors to the Arctic now greatly exceed their host population at many popular destinations, and Arctic communities are increasingly reliant on the jobs, income, and business revenues tourism generates. The Russian Arctic and part of Canadian Arctic are the general exceptions to this picture. Many Native Peoples, particularly those recently attaining self-rule, view tourism as a more sustainable economic endeavor than their historically tenuous dependence on either subsistence or resource extraction economies.

In Antarctica, there has been a tremendous growth in tourism activities over the last decades. The number of ship-borne tourists increases by 344% in 13 years and land-based tourists by 917 % in 9 years. By the early 1990's, the number of tourists in Antarctica eclipsed the number of scientists conducting research there. Since then, the disparity between numbers of tourists and scientists has steadily increased. Today improving transport technologies, growing popularity, increasing wealth and leisure time, a moderating climate, and intensive tourism promotion are all contributing to the growth of tourism in the Polar Regions.

Given tourism's prominence in both Polar Regions, and the expected likelihood that it will continue to grow and expand, residents, governments, and Non-Government Organizations (NGOs) want to determine the vulnerability of the polar environment to tourism impacts, mitigate these impacts and design and implement appropriate management responses. The success of management responses depends on their relevance to the environmental, cultural, economic, and jurisdictional conditions that uniquely characterize Polar Regions. This publication briefly outlines those key features and describes tourism's several roles and impacts in both the Arctic and Antarctica. Based on knowledge of polar conditions and the ways in which polar tourism functions, good management practices must be selected for the purpose of conserving the environmental and cultural integrity (wherever applicable) of the Polar Regions.

Unique Features of the Polar Regions

Polar Regions differ from warmer regions of the world in terms of their environmental, socio-cultural, economic, and jurisdictional characteristics. These broad characteristics not only describe the setting within which polar tourism exists and impacts occur, but also define the opportunities and constraints for accomplishing sustainability. These factors are introduced briefly here and more extensively discussed in Sections 2 and 3 of this publication.

The Environmental Setting

The Arctic and Antarctica are among the world's coldest places containing most of the world's ice and snow. But these harsh features loosen their grip during their respective summers when temperatures climb, ice melts, immense populations of migrating wildlife arrive, daylight lasts virtually all day, and, in the Arctic, a profusion of plants bloom. These extreme features are certainly not the world's most popular tourist attractions, but growing numbers of visitors are touring and recreating in the polar environment.



Environmental conditions in both Polar Regions are extremely dynamic. At certain, crucial times of the year locations throughout the Arctic and Antarctic provide critical habitat for a diversity of migrating land, bird, and marine species. The survival of many of these species is entirely dependent upon the seasonal availability of food and nesting sites that only the Arctic and Antarctic biomes can provide. And when the seasons change, many of those same zones can be nearly devoid of obvious life. The environmental conditions of the polar seas and oceans experience similar radical changes. In winter they are dominated by drifting and partly solid ice cover, but during summer seasons they can be relatively ice free and open (Stonehouse, 1989; Paine, 1997).

Arctic's Native People. The interaction of land and the water resources, the amount and extent of sea ice, and the quantity of fish migrating from the ocean to the rivers, have influenced subsistence hunting and fishing, travel, societal relationships, art, and ceremony of Arctic Natives for millennia. These unique environmental interdependencies and the cultural values and lifestyles they sustain must be equally considered when addressing the potential impacts of tourism in the polar world.

Two centuries of study have shown that polar environments, like those of the rest of the world, are constantly changing: and there is now substantial evidence that they are indeed changing faster due to human-induced causes (IPCC, 2007). Significant climate induced environmental impacts and their relevance to polar tourism include:

- Reduced sea ice cover for longer periods of time is facilitating improved tourist access and extending visitor seasons.
- The alteration of ecological zones is causing changes in wildlife habitat boundaries, migratory routes, and predator prey relationships that are in turn impacting tourist attractions such as wildlife viewing and sport fishing.
- According to the 2007 report by WMO/UNEP's Intergovernmental Panel on Climate Change, the warming of the Polar Regions is anticipated to continue for centuries (WMO/UNEP IPCC, 2007). One consequence of this conclusion is that the continued loss of sea ice will enable more ship-based tourists, to visit larger geographic areas for longer periods of time and thus more tools, techniques and regulations focusing on the sustainable development of the areas, will be required to manage tourism in the Polar Regions.

People in the Polar World

The extraordinarily diverse cultural and social settings of the Arctic region are also experiencing major changes. The attainment of self-rule, growing commitments to preserve cultural integrity especially language, customs, and art, and the need to create sustainable economies are critical issues faced by Native Peoples of the Arctic. Tourism impacts, both positive and negative, affect all those aspirations. Arctic residents are well acquainted with the difficulty of balancing cultural and social norms with the need for a viable economy. With the number of tourists now exceeding the population of rural settlements in some regions of the Arctic, the challenge of sustaining cultural values and ways of life competes with the need to provide jobs, income, and a market outlet for local goods and services. Furthermore, the brevity of the polar tourist season applies added pressure. In many instances an annual income must be earned in only a few months.

1

In sharp contrast with the Arctic, Antarctica has no traditional communities and no living cultures to sustain. Heritage sites associated with the 'Heroic Age' of exploration receive sincere but sporadic attention from various national governments and conservation organizations. Human inhabitants are to be found in many scientific stations scattered throughout the continent and its offshore islands, but these people do not have the mandate (and in addition, neither the inclination nor the resources) to engage with or manage tourists.

Polar Economies – Many Actors and Many Agendas

When evaluating the impacts of polar tourism and crafting appropriate management responses, we recognize that other economic development interests are also at work. The Arctic contains enormous quantities of natural resources, especially hydrocarbons, minerals, and marine living resources that create intense economic development pressures. Economic enterprises with large-scale development agendas matched by huge capital expenditures are actively pursuing those resources. In addition, global demand for food products keeps large-scale international commercial fishing fleets operating in both Arctic waters and the Southern Ocean. Timber harvesting completes the list of largest industries seeking to acquire economic value from Arctic resources. It is also acknowledged that all of these economic endeavors are supported by Arctic governments justifiably concerned about their economies.

The Role of Sovereignty in Polar Regions

The Arctic is encircled by eight sovereign nations that govern the lands and offshore waters located within their jurisdictional boundaries. They are also empowered to ratify international agreements that legitimize either allowable or prohibited uses of Arctic resources that extend across sovereign boundaries. The eight nations include Canada, Denmark (including Greenland and the Faroe Islands), Iceland, Norway, Sweden, Finland, Russia, and the United States. In addition to these governments, Native People and Native Communities less formally, but no less effectively nor important, implement long held customs to manage territorial resources. All of these entities actively enforce their laws, regulations, treaties and customs, but they are severely restricted by scarce law enforcement resources spread thin across vast regions.

Like other aspects of the polar world, the Arctic's jurisdictional setting has experienced substantial changes in the past few decades these contribute to the growth of polar tourism. The most significant change occurred in 1991 when the Soviet Union was replaced by the Russian Federation. Tourist entry to the single largest Arctic land mass not only became a reality, but an economic development objective. The attainment of self-rule by the Nunavut in the Canadian Arctic; the Inuit's creation of Home Rule in Greenland; enfranchisements secured by the Saami throughout Scandinavia; and the creation of Native Corporations in Alaska are enabling Native Peoples to regain more control of their resources. But indigenous communities must also work towards sustainable local economies and this is also contributing to the growth of polar tourism.

In contrast to the Arctic, no State has internationally recognized sovereign rights over the Antarctica. States only can exercise jurisdiction over their nationals to a limited amount and the monitoring and enforcement of laws remains a challenge. At the time of the signing of the 1959 Antarctic Treaty, tourism was non-existent in Antarctica and therefore was not given any specific attention in the Treaty. Subsequently, the first regulations dealing with tourism



were adopted by the Antarctic Treaty in 1966 with the emergence of commercial tourism activities. The absence of sovereign authority and on site enforcement resources means that conventional rules and regulations cannot be easily applied to Antarctic tourism. Instead, innovative approaches to environmental and heritage resource protection, monitoring, and visitor safety must be created to manage Antarctic tourism.

The Tourists – Increasing Access and Numbers

The invention of new transport technologies and personal motivations to visit new areas, have overwhelmingly demonstrated that no parts of the globe, including the Polar Regions, are beyond tourist access. Greater personal wealth, educational attainment, and leisure time are fuelling increased demand for tourism. These dynamics will be further accelerated by the retirement of the “baby boom” generation, the world’s largest and most wealthy demographic cohort.

The Sustainability Challenge

Dynamic natural events and human forces now present in the Polar Regions are affecting the environmental conditions, social norms, cultural integrity, and economic structure of the polar world. Within this unstable setting, tourism is also significantly producing change and exerting impacts. Therefore, there is no doubt that polar tourism will affect the environmental quality, cultural integrity, economic structure, and governance of the Polar Regions. It is also certain that tourism itself will be impacted by the natural and human-induced changes now occurring and anticipated to occur. **Evaluating the extent of those vulnerabilities and then applying appropriate responses in order to prevent negative impacts and conserve the environmental quality and cultural integrity of the Polar Regions is the sustainability challenge.**

An appropriate response to that challenge requires the selection of conservation and sustainable development objectives that will protect the polar environment and its people. The identification of management techniques exemplified in good practices is necessary for accomplishing those objectives. Based on years of work involving consultations with numerous stakeholders, the United Nations Environment Programme (UNEP) and the World Tourism Organization (UNWTO) have formulated 12 principles for the advancement of sustainable tourism (UNEP/UNWTO, 2005). A full presentation of those principles is provided in Section 4 of this publication, but for introductory purposes, a summary of them reveals four distinct sustainable tourism objectives.

- Conserving environmental quality
- Preserving cultural and social values by means of participatory decision-making
- Creating sustainable economies
- Ensuring positive visitor behavior, safety, and enjoyment

The order in which these objectives are listed does not imply any order of priority, as the UNEP/UNWTO publication states: “Each one is equally important.” Management practices that are relevant to the unique conditions of the Polar Regions and designed to achieve those objectives are required to respond to the sustainability challenge.



The Polar Environment

2

This section describes the environmental setting within which polar tourism now exists and environmental conditions and factors that will influence its future. The Polar Regions are defined both geographically and politically, and changes in polar ecosystems resulting from both human-induced and natural events are briefly discussed.



The Geography of Polar Tourism

The geography of polar tourism extends beyond scientifically defined polar boundaries. Several cities located near the edge of those boundaries provide vital transportation gateways to the Polar Regions at both ends of the world. Tourist entry points surrounding the north, such as Vancouver and Winnipeg in Canada and many Scandinavian cities, provide key transportation linkages, hospitality infrastructure, and the incredibly diverse supplies and services needed to conduct tourism in the Arctic. In the southern hemisphere gateway ports, such as Ushuaia (Argentina), Punta Arenas (Chile), Stanley (Falkland Islands/Malvinas), Cape Town (South Africa), Hobart (Australia) and Christchurch / Lyttelton (New Zealand) serve a more critical role. The Antarctic gateway ports are the main land based sources of tourist support facilities, services and supplies (Bertram, Muir and Stonehouse, 2007).

Environmental changes

Polar environments are experiencing significant, long-term changes caused by both human-induced and natural events converging on the regions. Throughout the 19th and 20th century changes in polar environments resulted from economic exploitation at both ends of the world. Irreversible environmental impacts resulting from this type of behavior are especially present throughout the Arctic. For example, entire species, such as the Stella's Sea Cow, were exterminated by sealers, and vast watersheds were irreparably transformed in Alaska and the Yukon by massive dredging and hydraulic mining practices (Elliott, 1898; Wharton, 1972). More recent examples include the leaving of relics from the Cold War in the Arctic, and from scientific and technological exploration in the Antarctic. Against this backdrop is the appearance of tourism, which is an actual and a potential source of greater damage to Polar Regions. Superimposed on all changes due to direct human intrusion, is the dramatic change in the climate, the consequences of which will clearly affect the future of polar tourism.

In summary, the two kinds of environmental changes impacting Polar Regions are: (1) those unequivocally induced by humans, exemplified by despoliation of animal and plant communities through extractive commercial activities, and (2) significant climatic changes most certainly caused by the observed increase in anthropogenic greenhouse gas concentrations (IPCC, 2007). In planning for a sustainable future, both the public and private sectors need to evaluate the dynamic events described below and would be well-advised to fully consider the cumulative impacts.

Changes due to human activities

Human intrusions and exploitation in Polar Regions have included:

- Use of Arctic resources by indigenous populations utilizing modern technology
- Fur trapping for non-indigenous markets throughout the arctic tundra and subarctic forest regions;
- Whaling and sealing for oil, baleen and skins, including walrus hunting for ivory;
- Commercial fishing;
- Extraction of minerals, including ores and hydrocarbons; and
- Establishment of military and scientific stations.



Intrusions from the outside are a dominant characteristic of all of these forms of exploitation. Fur trapping for southern markets was the original motive for colonization of much of the Arctic. Commercial whaling, and to a lesser extent sealing, exploited the maritime ecosystems at both ends of the world, from which some stocks have never fully recovered. Commercial fishing, both controlled and clandestine, continues today. All of those endeavors have resulted in the collision of both economic systems and cultural values. Mineral extraction has so far been limited to the Arctic, being specifically proscribed in Antarctica under the Antarctic Treaty System. The Arctic has been affected by the presence of long-term military installations and the Antarctic numerous scientific stations, particularly during the second half of the 20th century. The structures and contents of abandoned whaling and sealing stations, military and scientific stations, and caches of supplies scattered throughout the Polar Regions contain highly toxic environmental hazards that now present huge and costly environmental challenges (Snyder and Stonehouse, 2007).

No less damaging have been more recent forms of exploitation, particularly in the former Soviet Arctic. The mass “movement” of millions of people to the Arctic during Stalin’s time to establish new mining towns, such as Norilsk, began one of the largest human induced changes the Arctic has experienced. Equally significant, are the impacts resulting from the diversion of water resources.

Antarctica, the Southern Ocean and the sub-polar islands have also experienced economic exploitation, especially in regards to marine living resources and fisheries. Terrestrial remnants of these activities are the whaling and sealing stations and camps located throughout the sub-polar islands and the Peninsula Region. Huts, depots, and the original supplies left by early explorers provide vivid and haunting reminders of their lives and deeds. And, unfortunately, the discarded waste surrounding many scientific stations exhibit a time when environmental clean up was rarely a consideration. A concerted effort is now underway at all scientific stations to remove debris and environmental contaminants.

Changes due to climatic warming

The Arctic Council is a high-level, intergovernmental forum for cooperation, coordination, and interaction between the eight Arctic nations, indigenous communities, and other Arctic residents. Along with its other activities, it also commissions reports on changing conditions within the Arctic region. In 2004 it published a comprehensive report on Arctic climate changes entitled the Arctic Climate Impact Assessment (ACIA). This publication supplies compelling evidence about the environmental changes occurring in the region and the rest of the world and in part is summarized below (ACIA, 2004 and <http://www.acia.uaf.edu>).

World-wide climatic warming is particularly intense in the Arctic, where mean temperatures have recently risen twice as fast as in the rest of the world. This trend is likely to accelerate during the current century, due to accumulation of greenhouse gases in the atmosphere. The Arctic also receives increased ultraviolet radiation, due to depletion of the stratospheric ozone layer. Warming is evidenced in widespread melting of glaciers, reductions in extent and persistence of sea ice, and of snow and ice cover on land, increasing precipitation, and shorter and warmer winters. Melting of land ice results in rises in global sea level, and may slow and alter oceanic circulation that carries tropical heat poleward.



Likely consequences of warming in the Arctic, generally regarded as negative to the polar environment and its wildlife and human populations, include:

- Contraction of the region, manifest in poleward migration of the tree line, with consequent loss of tundra and diminution of cold polar waters;
- Flooding of parts of the tundra due to enhanced river-flow, drying-out of other parts, with consequent redistribution of tundra plants and animals, and possible invasions of competitive alien species and pathogens;
- Changes in coasts and coastal features, including increased erosion and loss of traditional terrestrial and inshore marine feeding grounds;
- Retreating sea ice, with consequent environmental challenges to ice-dependent marine mammals (seals, polar bears) and cold-water stocks of whales, birds, fish and planktonic organisms;
- Challenges to indigenous human populations from flooding rivers and thawing permafrost, including disruption of buildings and communications;
- Loss of traditional hunting and fishing grounds on land, in rivers, on pack ice, and in the sea, on some or all of which indigenous human communities are at least part-dependent.
- Not all the changes are spread evenly throughout the Arctic: the report considers slightly differing scenarios sector by sector.
- Overall it stresses that many of these changes are already detectable, and all will be considerable before the end of the 21st century.

Since the ACIA, a crescendo of scientific evidence has been published that reinforces its findings. The strongest and most persuasive evidence concerning an increasingly warmer world was published in February 2007 by the WMO/UNEP Intergovernmental Panel on Climate Change (IPCC, 2007). This report not only confirms that global climate change is producing a warmer globe, but also gives reasons for its cause, and forecasts that warming will continue for centuries.

It is the IPCC's forecast of future environmental conditions that should be of particular concern to those seeking to sustain the Polar Regions by managing tourism. Scientific evidence reveals that environmental factors normally used to monitor ecological conditions are experiencing radical transformation. Thus if we are to accurately attribute the impacts of tourism on polar environments then we must also be aware of the ways natural events are independently modifying those environments.

Conclusion

This brief summary of the highly dynamic polar environments represents the setting within which tourism exists. Continued alterations of the natural and human ecology of the regions will inevitably influence the polar tourism experience, the industry, and the success of sustainable management responses. It is important to highlight the link between sustainable transportation and tourism in relation to global warming. Polar Regions as long-haul destinations from the primary outbound markets require extensive consumption of fossil fuels and result in high levels of carbon emissions. Accurately discerning how tourism is affected by these processes, and how tourism itself affects change, is essential for understanding how the industry should be managed in the future. With this need in mind, the role of tourism in the polar world is the subject of the next section of this publication.

Tourism in the Polar Regions: Facts, Trends and Impacts

3

This section describes how polar tourism grew to become a mature and highly diversified industry in both Polar Regions; the characteristics of its current operations; and prominent factors that will affect its future. This information is essential for understanding tourism's present and future impacts on the Polar Regions.

Evaluating tourism impacts, both beneficial and otherwise, requires knowledge of total numbers as well as where, when, and how tourists cause impacts. For example, the many thousand cruise-ship passengers who passively view the Arctic from offshore, and occasionally disembark to visit land based souvenir shops, affect the region in ways that differ from the smaller numbers actively engaged in ecotourism or wilderness recreations activities such as river rafting, mountaineering, and sport fishing. By accurately identifying the full array of tourist activities and their behavioral patterns, then placing that information within the context of their natural and human resource settings, we can begin to understand key relationships.



A Brief History of Polar Tourism

Nearly Two Centuries of Arctic Tourism

The Arctic has attracted tourists since the early 1800's. The earliest Arctic tourists were individual anglers, hunters, mountaineers, and adventurers attracted to abundant fisheries, exotic wildlife species, and remote regions. Many articles describing their recreational pursuits appeared in the growing genre of recreation, mountaineering, hunting, and fishing periodicals that emerged in the mid-1800's (Conway, 1897; Williams, 1859; Suydam, 1899). During the same era, several pioneering travelers to the Arctic published journals that became popular guide books for future Arctic tourists (Lainige, 1807; Scidmore, 1885, 1896).

Mass tourism in the Arctic has thrived since the mid-1800's when steamships and railroads aggressively expanded their transportation networks providing access to numerous destinations throughout the Arctic. Tourism entrepreneurs, such as Thomas Cook, formed partnerships with railroad and steamship companies and thereby pioneered the popular tourism industry (Brendon, 1991). By the 1880's, the "Land of the Midnight Sun" in the Scandinavian Arctic, Alaska, and the popular excitement of the Klondike Gold Rushes firmly established the Arctic's mass tourism market (Dufferin, 1873; duChailou, 1881, Pacific Steamship Company, 1885).

During the past two centuries numerous advances in transport technologies have contributed to the steady growth of Arctic tourism. At the present time, advanced ship technologies together with improved marine charts and navigational aids have allowed cruise ship travel to increase exponentially. Diesel locomotives, four wheel drive and tracked vehicles further opened access to vast regions of the Arctic (Rand McNally, 1922). And, most importantly, air transport in all of its forms, provides immediate travel to the Arctic. Collectively, these improved transport technologies not only added numbers of tourists, but also expanded the seasonal and geographical reach of Arctic tourism (Armstrong, 1972, 1991; Glines, 1964; Van Doren, 1993).

Antarctic Tourism

Antarctic tourism began in 1957-59 with four visits by Argentinean and Chilean naval transports, which accommodated tourists whose fares helped to pay costs of servicing the national expeditions (Reich, 1980). Antarctica received extensive international publicity from the explorations led by Richard Byrd, Vivian Fuchs and Edmund Hillary.

Entrepreneurial tour operators recognized the commercial value of feasible access and positive international publicity. In 1966 Lars Eric Lindblad began expedition cruising to the Antarctic and initiated the use of zodiacs to land passengers at diverse sites. As a result of the success of the Lindblad model, government affiliated voyages were quickly superseded by dedicated cruises in small 'expedition' ships carrying 50-120 passengers. For many years this type of travel dominated the trade. Increasing numbers of expedition ships are transporting larger numbers of passengers, and making more landings at several hundred sites. The first larger cruise ship to enter the field, Ocean Princess in 1990-93, had a capacity of 480 passengers, but carried only 250-400 on its annual Antarctic voyages. The most recent development has been the advent from 2000 of liners carrying between 800 and 3,700 passengers, including crew members.

Over the last decades, tourism activities have expanded tremendously with the number of ship-borne tourists increasing by 430 % in 14 years and land-based tourists by 757 % in 10 years (IAATO 2007). The tremendous increase of ship-borne tourism and its impacts on the Antarctic environment resulted in the members of the Antarctic Treaty adopting a resolution (May 2007) which recommends the Parties of the Treaty to:

1. Discourage or decline to authorize tour operators that use vessels carrying more than 500 passengers from making any landings in Antarctica; and
2. Encourage or require tour operators to:
 - a) Coordinate with each other such that not more than one tourist vessel is at a landing site at any one time;
 - b) Restrict the number of passengers on shore at any one time to 100 or fewer, unless otherwise specified in applicable ATCM Measures or Resolutions; and
 - c) Maintain a minimum 1:20 guide-to-passenger ratio while ashore, unless otherwise specified in applicable ATCM Measures or Resolutions.

Commercial air transport of tourists to the Antarctic includes both small groups traveling to the continent and larger numbers viewing from overflights. Adventure Network International (ANI) has been providing flight services to Patriot Hills in the Heritage Range since 1985 and other charter air companies have provided tourist transport between South Africa and Dronning Maud Land, and between Punta Arenas, Chile and King George Island (Swithinbank, 2000).

Polar Tourism Today – Diverse and Growing

Polar tourism is now a mature industry providing diverse experiences in both Polar Regions. The polar tourism industry is enticing an increasing clientele with expanding numbers of attractions, recreational activities, international destinations, and visitor accommodations. And now that regularly scheduled excursion travel is provided to both the Arctic and Antarctic, year-round polar tourism has become a reality.





Polar Tourism's Diverse Markets

Polar tourism is not a single, monolithic industry, but rather a collection of diverse specialty markets that appeal to an equally diverse clientele. Each of these distinct markets is growing and expanding for an obvious reason – they appeal to tourists who are willing to pay for the unique experiences they offer. The five highly specialized market segments currently dominating the polar tourism economy are best defined in terms of their primary attractions and the ways in which those attractions are experienced. This approach to classifying tourist markets explicitly acknowledges tourist expectations, the service delivery methods used to realize those expectations, and the distinct impacts resulting from those activities. The five markets are:

1. The mass market, comprised of tourists primarily attracted to sightseeing within the pleasurable surroundings of comfortable transport and accommodations.
2. The sport fishing and hunting market, with participants who pursue unique fish and game species within a wilderness setting.
3. The ecotourism market, consisting of tourists who seek to observe wildlife species in their natural habitats, and experience the beauty and solitude of natural areas. These tourists are also concerned with conserving the environment and improving the well-being of local people.
4. The adventure tourism market, providing a sense of personal achievement and exhilaration from meeting challenges and potential perils of outdoor sport activities.
5. The culture and heritage tourism market, a very distinct market comprised of tourists who either want to experience personal interaction with the lives and traditions of native people, learn more about a historical topic that interests them, or personally experience historic places and artifacts.

Each market has distinct visitor experiences and economic dimensions, involving different tourists' motivations, expectations, on-site behavior, and resource uses. Market segmentation provides a useful framework for understanding polar tourism in terms of the use of natural and cultural resources, economic activity, and visitor behavior. But obviously, tourists themselves are not constrained by this classification: they participate freely in many types of activities (Snyder and Stonehouse, 2007).

The enormous geographic scope of the five markets deserves emphasis. All eight Arctic nations, and their seas and oceans host all five markets, while Antarctica hosts most of them with the exception of the sport fishing and hunting and the culture and heritage markets. Most of that geography consists of land masses that are true wilderness and oceans with the world's most severe maritime conditions. The challenge of managing tourism across those vast lands and seas is well known to the Arctic nations and to those concerned about Antarctic tourism.

Environmental, Economic, Social and Cultural Impacts of Polar Tourism

Environmental impacts

There are serious concerns that tourism is promoting environmental degradation in the Polar Regions (especially in the Arctic) by putting extra pressures on land, wildlife, water and other basic necessities, and on transportation facilities (GEO 2002 and GEO 2006). According to the Arctic Council Working Group on the Conservation of Arctic Flora and Fauna (CAFF), the main environmental impacts of tourism in the Arctic are the following (CAFF 1997, 1998, 2001):

- The transport of tourists to the Arctic, in itself, increases the volume of ship and airplane traffic. In addition to the impacts on climate by long distance air and water traffic, increased ship traffic in these waters could lead to increased risks of groundings and other accidents, the results of which can include oil spills and other environmental consequences.
- Many visitors want to see areas of great beauty or richness, such as bird colonies, marine mammal haul-outs, and caribou aggregations. Because there are relatively few places where such sights are accessible and reliable, tourist traffic is often concentrated. Arctic vegetation is typically unable to withstand repeated trampling, and paths of bare ground have appeared in some heavily visited spots.
- Helicopters, used sometimes for recreational purposes, are noisy and produce a variety of sounds that are disturbing to seabirds. Helicopters cause panic flights and can lead to egg loss particularly in birds.
- In the forest-tundra areas of the Arctic, tourism, including sport hunting and fishing, attracts moderate though increasing numbers of visitors. This places additional pressure on the region's resources, sometimes leading to conflicts between local and visiting hunters. The forest-tundra in general has a low tolerance for trampling. Even the temporary presence of humans often leaves a lasting impact.
- Visits to Arctic seabird colonies by tourists are rapidly growing. Currently cruise ships visit or sail by colonies in the low and high Arctic of Canada, west Greenland, Iceland, Norwegian coast and Svalbard, eastern Russia, and the US (Alaska). Colonies chosen for visitation tend to be large and spectacular and usually are home to species such as murre, puffins, kittiwakes, and fulmars. During a colony visit, passengers typically board smaller boats from the larger ships, and cruise by colonies observing the seabirds and taking pictures. Occasionally passengers make landings at suitable colonies and view the seabirds from above or below the cliffs.
- Recreational activities, such as boating and fishing, cause local disturbance at bird colonies in several Arctic countries. In the Russian far-east, coastal and lowland species such as ducks, gulls, terns and Spectacled Guillemots are frequently disturbed by visitors.
- Garbage, waste, and pollution are significant problems for many tourism operations, especially as decomposition is slow and waste remains visible atop the permafrost in many Arctic areas.



In the Antarctic the most important impact of tourism concerns the disturbance of cetaceans. Certain studies have lent increasing strength to concerns that human activities may be influencing the fitness of these animals. Tourism activities in Antarctica present also a risk to the marine environment (pollution resulting from operations or maritime accident (e.g. grounding)) as well as to terrestrial ecosystems as over 80 % of the tourists land one or more times during their journey (introduction of alien species; disturbance of birds colonies; damage to the vegetative cover (e.g. lichen). In addition, high-risk unsupported (adventure) tourism can potentially impact on national research programmes in terms of search and rescue operations.

The main positive impact of polar tourism, if well done, is its educational value. Arctic and Antarctic visitors are fascinated by the sheer beauty, wilderness and natural phenomena of the polar environment. This can be used to make them not only to ambassadors for the protection of the visited regions, but also supporters of conservation activities and organizations worldwide.

Economic impacts

Growing public and private resource commitments to promote and further develop tourism demonstrate strong intentions to strengthen tourism's economic role in the Arctic. Given these circumstances, economic impacts, both positive and negative, include the following:

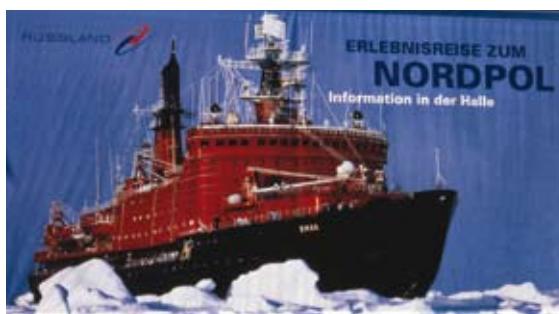
- Many Arctic people seeking economic security perceive tourism as a positive means for improving economic stability. From their perspective, reliance on predictably arriving tourists offers a more stable economic outlook than exhausting finite natural resources to meet the boom and bust needs of world markets.
- Arctic communities generally appreciate the economic benefits resulting specifically from the angling, hunting, and nature tourism market because most tourist expenditures remain in the community. Tourists employ local guides, pilots, charter boat captains and crews, outfitters, and suppliers. They use local transport, stay in local accommodations, and eat in local establishments.
- Culture and heritage tourism provides critical support for language preservation, the practice of traditional ceremonies, and the perpetuation of ancient customs and art forms. The presence of appropriate and effective interpretation and education methodologies will dramatically impact effectiveness. Additionally, this form of tourism creates a market for art and other native manufactures and services.
- The cost of building, operating, and maintaining tourism infrastructure is a huge economic burden for Arctic communities and governments. Support facilities and services of all types are built and maintained to serve relatively large numbers of persons that exceed the resident population. Transport facilities, law enforcement, medical services, other emergency services, water and wastewater utilities, and waste collection and disposal incur capital and operating costs, require advanced work force skills, spare parts, and need specialized supplies in order to sustain these functions. Tourism normally occurs for a few months of the year, but the infrastructure must be maintained under adverse conditions for the entire year.
- The economic and human costs of providing emergency services deserve special attention. Highly trained personnel, many of whom are volunteers, risk their lives in search and rescue operations. Expensive transport and medical equipment and supplies are required to evacuate victims and treat their injuries. Law enforcement

resources must respond to large populations visiting their communities and need specialized equipment to patrol backcountry regions. Fire suppression service faces similar challenges.

- The cost of responding to environmental hazards is included in the budgets of all Arctic nations, but may not be sufficient. Oil spill containment and recovery, hazardous materials handling and storage, and hazardous waste disposal all represent substantial costs. Adequate funds and the availability of specialized equipment, trained personnel, and essential supplies may or may not be sufficient to respond to events.
- Finally, the question of who benefits economically from large-scale Arctic tourism is a very sensitive issue. Many of the transport, tour and hotel corporations conducting tourism in the Arctic are headquartered outside the region. Consequently, much of the money paid by polar tourists to those non-resident corporations escapes the Arctic people.

The continent of Antarctica derives absolutely no economic benefits from tourism, but can suffer environmental and heritage resource costs. Unlike most parts of the world, there are no indigenous people to benefit from tourism in Antarctica and thus tourism is not an alternative to local unsustainable economics activities. This blunt fact is a serious consideration for anyone motivated to propose tourism management practices on the southern continent. There is no continuous stream of money devoted to tourism management, environmental monitoring, emergency services, waste collection and disposal, the design and implementation of risk minimization or mitigation programmes, or any other “best practices” normally associated with reasonably managed tourism. Specifically:

- Aside from the fees collected by the Antarctic Historic Places Trust to maintain heroic era huts in the Ross Sea region, no revenues or fees of any sort are collected from either tour operators or the tourists themselves for the management of Antarctica’s environmental resources. Some scientific stations and heritage sites generate revenues from the sale of souvenirs, but these are neither dedicated to resource management nor sufficient to support tourism management programmes.
- As with all who travel to Antarctica, costs are incurred by tour operators for the preparation of environmental impact assessments required by the Protocol on Environmental Protection to the Antarctic Treaty. Scientific stations incur costs for the assistance they provide in emergency situations such as search and rescue or medical support. The true costs of emergency response include not only direct expenses for personnel and equipment, but the risk to additional lives and distraction from scientific missions.
- To the credit of many tourists who learn about Antarctica’s economic dilemma, generous personal donations have been given in support of environmental research and heritage preservation projects in Antarctica and the sub-polar islands.





Social impacts

There are serious concerns regarding the negative impacts of a growing tourism industry to the people in the Arctic world. Social norms, values and unique ways of life are all subjected to impacts from polar tourism. Tourism impacts affecting polar communities and their people are presented below.

- The most obvious social impacts result from the number of visitors that temporarily overwhelm the social norms of some Arctic communities during tourist season. Community institutions such as educational, religious, and civic organizations often experience altered roles and functions when the tourists are in town. Based on the attitude of the community, this may or may not be a major disruption, but large numbers of tourists relative to local populations always exerts a dominant presence.
- Social impacts of Arctic tourism can be mitigated by the terms and conditions of collaborative agreements between the tour operators and the local community. In some instances, tax revenues and special fees can offset local costs. When tourist seasons are expanded there are greater economies of scale and efficiencies result from the extended use of infrastructure and longer duration of employment and income benefits.

Cultural impacts

The Arctic environment is not merely a setting in which a rich diversity of Native People live, but rather it encompasses the essential resources upon which the lives and culture depend. Consequently, any events that endanger those resources place Native People at grave risk. By their own declarations the most severe threat facing Native People is climate change. The loss of Arctic sea ice with its attendant effects on wildlife habitat, numbers, and migratory behavior; the transport routes needed to subsist; the duration of seasons; and the condition of fisheries are of critical importance to the cultural and economic well-being of Arctic people. According to a statement by Sheila Watt-Cloutier, former International Chair, Inuit Circumpolar Conference (Pegg, 2004):

“What is at stake here is not just the extinction of animals but the extinction of Inuit as a hunting culture. Climate change in the Arctic is a human issue, a family issue, a community issue, and an issue of cultural survival.”

The cultural impacts described below must be evaluated from that perspective.

- Large numbers of tourists can produce significant cultural resource impacts. They further stress increasingly scarce natural resources and that results in a variety of pressures on indigenous subsistence practices and value systems.
- Ironically, as traditional indigenous lifestyles succumb to change resulting from climate change, there will be fewer opportunities for tourists to support authentic cultural traditions. This will affect Arctic culture and economies.
- In addition to their numbers, the introduction of technologies and tourist service amenities can impact Native People's desires to maintain traditional lifestyles.
- Intrusive, inappropriate visitor behavior violates traditional customs. Tours that do not include educational practices can generate conflicts that damage both Native People's quality of life and the tourist experience. When that happens, both parties lose (Snyder and Stonehouse, 2007).

In summary, the ways in which Arctic communities allow their natural and cultural resources to be used affects the character of those communities. As Arctic communities continue to achieve self-determination, they will increasingly decide how their natural and cultural resources will be utilized and this will ultimately determine how those resources are managed. Arctic communities and Native People must determine how tourism will, or will not, occur and how natural and cultural resources should be used and safeguarded. They can be aided by good management practices that are relevant to their objectives. But the final decisions regarding natural and cultural resource uses must be made locally. Any other solution would be yet another example of intrusion from the “outside”.

The Outlook for Polar Tourism: Reduced “Barriers to Entry”

Polar tourism expands because of a continuous reduction of what economists call “barriers to entry”. The concept suggests that the extent to which these barriers are increased, reduced, altered, or eliminated directly controls the amount, geographic distribution, seasonal duration, and types of tourism likely to occur (Clawson and Knetsch 1966, Walsh 1986). Since its inception, the most difficult barriers confronting polar travel include difficulty of access, environmental conditions (both real and perceived), cost of travel, time to travel, and jurisdictional restraints.

Both human-induced and natural events are making the Polar Regions increasingly accessible. Vastly improved geographic and hydrographic knowledge; advancements in transport and navigational technologies; more comfortable clothing; more durable recreational equipment; significant reductions in the amount, extent and duration of sea ice; and a relatively more tolerable climate are all contributing to growing access to the Polar Regions. The cumulative impacts of these events are larger numbers of polar tourists spending more time in more locations.

Conclusion

Polar tourism was slow to start, but is now a popular and rapidly-growing industry that is expanding in terms of tourists, tour operators, diverse recreational pursuits, geographic scope, and seasons of use. Arctic economies have seen it evolve from an incidental activity to a vital sector upon which they increasingly rely. This has been particularly true for newly enfranchised indigenous people of the Arctic seeking self-sufficiency, and for gateway cities in the southern hemisphere eager to realize the economic benefits of Antarctic tourism.





Sustainable Tourism in the Polar Regions: Setting an Agenda

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The conservation and sustainable management of polar environments and cultures including by means of good tourism practices will require both mutually accepted goals and a solid commitment to implement appropriate management techniques. Fortunately, the first of those tasks has been carefully deliberated by the international community. As previously stated, the United Nations Environment Programme and the United Nations World Tourism Organization engaged diverse stakeholders from around the world to establish 12 sustainability principles that are fully listed below. When summarized, those principles identify goals essential for achieving sustainable tourism. Again, those goals are:

- *Conserving environmental quality*
- *Preserving cultural and social values by means of participatory decision-making*
- *Creating sustainable economies*
- *Ensuring positive visitor behavior, safety, and enjoyment*

Though relatively new, polar tourism is old enough to have established recognizable patterns of procedure, and mature enough - even in its newest venue Antarctica - to have accumulated extensive management experiences. Well documented knowledge of tourism management techniques, resource conservation programmes, industry practices, jurisdictional responses, economic strategies, and community opinions and expectations currently exist to provide the basis for sustainable polar tourism policies and practices. Simultaneously, while tourism's presence is growing numerically and spatially, the polar environment itself is experiencing significant change.

This section describes tourism management conditions, issues and techniques that are relevant to sustaining the environmental and cultural integrity of the Polar Regions. This information is further reinforced by examples of good polar management practices presented in the final section of this publication.



Management Conditions: Wilderness

Polar tourism most frequently occurs in immense wilderness regions, either de-facto or officially designated, and these vast areas are exceedingly difficult to manage. The Polar Regions contain the world's largest expanses of wilderness - places where human presence and development are virtually absent or not readily apparent. The continent of Antarctica is entirely a wilderness land mass. North America's and Eurasia's largest wilderness regions are located in the Arctic. Fully reliable sets of marine charts and hydrographic information for the Southern and Arctic oceans are not yet available.

These enormous wilderness areas and relatively unknown marine regions provide permanent habitat for highly adapted indigenous wildlife and seasonal habitat for immense populations of migratory wildlife. Arctic wilderness is the homeland of diverse Native Peoples who have practiced cultural traditions for millennia. The Antarctic contains important artifacts of the history of exploration and scientific discovery. Wilderness regions also possess highly esteemed scientific, inspirational and conservation values. For most of their existence these polar resources and values were protected by their remoteness and climatic conditions.

Again, wilderness regions present unique management challenges. Comprehensive inventories of their natural and cultural resources are time-consuming and expensive to obtain. A competent knowledge of their dynamic ecological systems requires long-term investigations that are equally complicated and costly to accomplish. Establishing mutually acceptable methods to facilitate stakeholder participation in wilderness planning and management are difficult to implement, and frequently contentious (Wright, 2001).

Management Issues

Scarce Management Resources

The absence of development may be essential for sustaining the integrity of wilderness values, but it is also a huge obstacle in the performance of environmental and tourism management. The Arctic's scarce infrastructure in terms of transportation systems, number of trained personnel, and service facilities are severe constraints on managing the impacts of tourism. Operational functions essential for meeting the demands of large numbers of tourists, such as resource conservation, resource monitoring, scientific research, security patrolling, visitor safety, waste collection and disposal, and emergency response capabilities are all affected by the scarcity of infrastructure.

In the Antarctic the situation is even worse. Unlike the Arctic, there are no resources located on the continent specifically dedicated to supporting tourism's expanding presence and growing access. International policy strongly advocates environmental conservation of the entire continent, but the fact remains that because the Antarctic Treaty System cannot tax, there is no money to support on site management. Consequently, there are neither land nor marine Antarctic-based resources dedicated to the management of tourism activities. The Protocol on Environmental Protection to the Antarctic Treaty requires environmental impact assessments of tour operations. Although the inspection regime established under article 14 of the Madrid Protocol could also apply to tourism activities, there are no adequate international monitors to ensure compliance with assessment requirements or that proposed mitigation measures are implemented.

Both Arctic resource managers and Antarctic tour operators are keenly aware of these constraints and have adapted to them. Specialized wilderness management techniques affecting the number and distribution of tourists; educational programmes to promote appropriate behavior; and self-reliant practices extending from waste collection to the provision of emergency services have been implemented. Valuable information regarding their effectiveness may be found in the wilderness recreation management studies published during the past 40 years.

Environmental management issues – who did what?

Polar tourism must be conducted in a responsible manner and tourism management techniques are often suggested for conserving the polar environment. One of the supreme difficulties for accomplishing this objective is to accurately determine the environmental cause and effect and then manage tourism accordingly. In other words, when an environmental condition changes, the question becomes whether it was caused by a natural event, by tourism activity, or by some combination of both? The capacity to accurately monitor tourism, revise tourism management plans, alter visitor activities and behavior, and implement appropriate environmental conservation measures depends on the answers to those questions. Realistically, the ability to assess and manage tourism impacts in the Polar Regions is vitally dependent on a competent understanding of those relationships (Mieczkowski, 1995; Cater, 1994).

Environmental cause and effect relationships affecting the Polar Regions also result from events occurring well beyond the high latitudes. Wildlife populations that seasonally migrate to the Polar Regions from other regions of the world are impacted by changing oceanographic conditions, environmental pollution, hunting and fishing pressures, and habitat transformations that are well beyond the jurisdictional boundaries of polar resource agencies. The cumulative impacts of these complex environmental changes are a colossal challenge to comprehend, much less competently manage. When polar tourism is mixed with this collection of dynamic, naturally occurring events, reliable understanding of those interdependencies is further complicated (Watson, 1998; Stonehouse, 2007).

Cultural management issues

Numerous cultural traditions pervade the Arctic, many of them derived from centuries of habitation by indigenous people. Others are the culmination of settlement patterns, resource uses, economic systems, and social customs evolved from empire building and the desires of sovereign nations. These very complex heritage and cultural traditions of Arctic societies are simultaneously tourist attractions and sensitive management issues.

In Antarctica defining the 'allowable and acceptable' visitor uses of heritage sites and resources is a particularly difficult task. Internationally significant heritage resources associated with polar discovery, scientific inquiry, historical economic development, and human settlement are located throughout the southern polar region. The abandonment of those sites, the absence of a permanent population to perform conservation, and severe weather has resulted in deterioration. Resource management issues at these sites include environmental remediation, heritage conservation, visitor safety, and the creation of interpretive services that simultaneously preserve the story of these places and enlist the respect of their visitors. These are daunting tasks given the absence of resources dedicated to these purposes.



The sub-polar islands in the southern hemisphere possess sovereignty status and the authority to implement heritage conservation programmes (Tracey, 2007). Many resource conservation activities have taken place, but the scarcity of financial resources and the remoteness of the sites are ever-present impediments to this effort (UNEP-WCMC, 2006,a,b,c).

Managing tourist behavior and numbers

The history of tourism proves that increased access inevitably leads to increased numbers. This is a serious management concern. In fact, improved access causes various numbers to increase, e.g., number of sites visited, extended use of seasons, greater duration of stay, types of recreational activities pursued, additional support staff required, and more services needed. The results are an increased exposure of environmental resources to additional risks, the economic dependencies of local communities on tourism, threats to privacy, more cultural contacts, and growing demands on infrastructure.

An enduring criticism of tourism is tourist behavior. Since its inception, tourists have been universally criticized for “inappropriate” behavior and cultural insensitivities. When tourist behavior results in resource damage, then condemnations and tough responses are well deserved. On other occasions, criticisms of visitor behavior more accurately reflect opinion rather than proof of harm. In all instances, efforts are required to hold both the tourist and the tourism industry accountable (Snyder and Stonehouse, 2007).

From the tourist’s viewpoint, the issue of numbers equates to perceptions of congestion, and this directly affects the quality of their tourism experience. The tourist’s perception of congestion in the Polar Regions is an especially critical issue because these locations are strongly promoted as wilderness.

International policy issues

Polar climate and associated ecological changes are fueling international discussions concerning foreign policy. For tourism management, the resolution of those issues will be critical. Decisions regarding sovereign powers and jurisdictional boundaries determine the terms and conditions for allowable uses of Arctic resources. Alteration of wildlife, fishery and marine mammal treaty obligations, management practices and jurisdictional boundaries will directly impact tourism activities such as wildlife viewing, nature tours, angling, and hunting.

Arctic governance issues

The wilderness management dilemma faced by Arctic governments is to determine when, where, and how people should be allowed to use areas without destroying the natural character. In other words, what human activity should be permitted in an area universally defined as having no human presence? Governments throughout the world have responded to this challenge in a variety of ways (Loomis, 1993). Management techniques range from strict restrictions of public access to participatory approaches that combine resource inventories, environmental assessments, and public involvement to define allowable uses. The most severe restrictions seek to achieve preservation by preventing human entry. The goal of the more collaborative approaches is to identify allowable uses based on science and citizen input and then test the effectiveness of those decisions by means of careful resource monitoring (Lucas, 1985; Stankey, 1985).

Enormous expanses of the Arctic are governed by the customs and traditional laws established and enforced by Native Communities. The Inuit in Canada, Greenland, and Eastern Russia, the Saami in Scandinavia, and diverse Native Peoples in both Russia and Alaska exercise combinations of traditions and sovereignty to determine the allowable recreational use of their land and water. These customs and the terms and conditions expressed in their management approaches offer valuable experiences that can be replicated in other parts of the Polar Regions.

Finally, it is acknowledged that politics and the competition for budgets are perpetual management issues affecting the governance of Arctic tourism. Officials responsible for wilderness recreation management realize that success in the political and budget arenas depends on providing quality tourism experiences to the public and economic benefits to local communities. They must demonstrate that the fees they collect from recreation activities and associated economic benefits to local communities justify their budgetary requests. Recreation managers have navigated this difficult course for a long time, and make considerable efforts to demonstrate that recreation participation is strong and growing.

Human activities in Antarctica are primarily regulated by the complex of multilateral agreements of the Antarctic Treaty System, in particular the Antarctic Treaty itself and its Madrid Protocol on Environmental Protection. The Antarctic Treaty was adopted on 1 December 1959. Its primary purpose is to ensure, in the interest of all mankind, that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord. The Treaty provides for freedom of scientific investigation and promotes international cooperation in scientific research. It also prohibits any nuclear explosions and the disposal of radioactive waste material in Antarctica.

In order to further the protection of the Antarctic environment, a Protocol to the Antarctic Treaty on Environmental Protection was adopted in 1991. The main purpose of the Protocol is to provide for the comprehensive protection of the Antarctic environment and dependent and associated ecosystems. The Protocol designates Antarctica as a natural reserve, devoted to peace and science; prohibits mineral resource activities other than scientific research; and sets principles and measures for the planning and conduct of all activities in the Antarctic Treaty area. Guidelines have been developed under this protocol to provide a framework for regulation of the potential negative impacts of tourism in the Antarctic. As tourist activities on the continent continue to grow the ATS is intensifying its focus on these issues.



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Management Techniques

The UNEP and UNWTO have established 12 principles essential for accomplishing sustainable tourism. These principles represent guidelines for establishing and evaluating effective tourism management techniques. "The twelve aims for an agenda for sustainable tourism" are presented below and comprehensively discussed in the UNEP/UNWTO publication entitled *Making Tourism More Sustainable A Guide for Policy Makers* (UNEP/UNWTO 2005).

- 1) **Economic Viability:** To ensure the viability and competitiveness of tourism destinations and enterprises, so that they are able to continue to prosper and deliver benefits in the long term.
- 2) **Local Prosperity:** To maximize the contribution of tourism to the economic prosperity of the host destination, including the proportion of visitor spending that is retained locally.
- 3) **Employment Quality:** To strengthen the number and quality of local jobs created and supported by tourism, including the level of pay, conditions of service and availability to all without discrimination by gender, race, disability or in other ways.
- 4) **Social Equity:** To seek a widespread and fair distribution of economic and social benefits from tourism throughout the recipient community, including improving opportunities, income and services available to the poor.
- 5) **Visitor Fulfillment:** To provide a safe, satisfying and fulfilling experience for visitors, available to all without discrimination by gender, race, disability or in other ways.
- 6) **Local Control:** To engage and empower local communities in planning and decision making about the management and future development of tourism in their area, in consultation with other stakeholders.
- 7) **Community Wellbeing:** To maintain and strengthen the quality of life in local communities, including social structures and access to resources, amenities and life support systems, avoiding any form of social degradation or exploitation.
- 8) **Cultural Richness:** To respect and enhance the historic heritage, authentic culture, traditions and distinctiveness of host communities.
- 9) **Physical Integrity:** To maintain and enhance the quality of landscapes, both urban and rural, and avoid the physical and visual degradation of the environment.
- 10) **Biological Diversity:** To support the conservation of natural areas, habitats and wildlife, and minimize damage to them.
- 11) **Resource Efficiency:** To minimize the use of scarce and non-renewable resources in the development and operation of tourism facilities and services.
- 12) **Environmental Purity:** To minimize the pollution of air, water and land and the generation of waste by tourism enterprises and visitors.



As stated in the UNEP/UNWTO publication: “The order in which these twelve aims are listed does not imply any order of priority. Each one is equally important.” (UNEP/UNWTO, 2005)

While all of these principles cannot be applied in the Antarctic and some Arctic regions (because of the absence of indigenous population and the non existence of local economies), they provide a solid basis of management objectives and evaluative criteria for creating, implementing and evaluating sustainable polar tourism. Each principle also contains key words and phrases that identify factors that can be monitored to evaluate the effectiveness, equity and efficiency of those plans, strategies and techniques. Notably, the principles include factors that address both the quantity and quality aspects of the host region and the tourism experience. Given the diverse conditions found throughout the Polar Regions, the principles must be adapted to fit special circumstances.

The remainder of this section outlines tourism management techniques that have been effectively used in the Polar Regions. They are relevant to polar conditions and to the several distinct tourism markets operating in those regions.

Recreation Management in the Arctic Wilderness

As outlined in Section 3, the polar tourism market is now a highly diversified industry that attracts people to many wilderness recreation activities. Nature tourism, wildlife viewing, sport fishing, hunting, and wilderness adventures of all types are actively pursued throughout all regions of the Arctic. In response to these recreation demands, Arctic resource managers have established numerous, specialized techniques to safeguard both the environment and the tourist. These techniques have an extensive history of addressing the Arctic’s environmental conservation issues and the opportunity exists to expand their use in the Arctic.

Wilderness recreation approaches used in the Arctic are normally an integral part of comprehensive wilderness resource plans. Responsible stewardship, defined as the conservation of its natural and cultural resources, requires the selection of objectives that define the appropriate and allowable uses of those resources and the establishment of management techniques that protect those resources from loss or damage. In the Arctic, as elsewhere, the primary wilderness management objective associated with tourism is to protect both polar resources and tourists from harm. This approach to wilderness management is employed by all Arctic nations.

Wilderness management plans and the recreation management techniques they endorse are the result of substantial stakeholder involvement. Government agencies responsible for resource management of protected areas seek advice from a variety of stakeholders. Participatory processes and competing interests vary among jurisdictions, but the issue of allowable tourism is always part of these lively discussions. Significantly, polar tourism is only one of many competing resource uses confronting Arctic wilderness managers as they attempt to reconcile economic development interests with the protection of wilderness values. A wealth of tourism management experience can be obtained from the public records that document those decision making processes.

The techniques described below are utilized by wilderness agencies to manage both the independent backcountry traveler and small groups pursuing recreation activities. The techniques are designed to optimize scarce management resources and, to a considerable

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extent, hold tourists personally responsible for their own safety. They also respond to the need to manage both general, short term use of wilderness resources and recreation activities requiring special expertise and the use of specific locations. They are especially applicable to three distinct polar tourism market groups: (1) the nature and ecotourism market; (2) the sport fishing and hunting market; and (3) the adventure market.

Controlling and Monitoring Backcountry Use

Arctic wilderness managers implement land and water resource management plans that designate specific recreation entry points. These gateways to diverse wilderness experiences may be trail heads, information kiosks, interpretive centers, ranger stations, boat ramps, hunting zones, fishing sites, or kayak put-in sites. The primary purpose of these widely publicized locations is to intercept the tourist before they venture into the wilderness. When this “capture technique” is successful, managers can dispense vital information while simultaneously learning when, where, and how people are traveling through wilderness lands and waters. This technique requires agencies to designate allowable recreation uses in specific locations and relies on tourists to let them know exactly how and when those resources are being used. Managers then monitor recreation activity locations to determine if current recreational use should be continued, modified or prohibited. Elements of this approach include:

- Before departure the tourists are advised to read all pertinent regulations, obtain maps, essential supplies and equipment, and relevant guide books.
- Given a scarcity of agency personnel or lack of funds for visitor centers, wilderness recreation information is often provided at entry kiosks, or by means of signage. Obviously, selecting the foreign languages to be used will directly impact the effectiveness of this information.
- Backcountry travelers are requested to identify their route and mode of travel. This is generally done by means of registrations at trailheads and boat launch sites. Identification of their intermediate camp sites and destinations is accomplished by back country permit registrations. Known hazards are identified and they are advised that their personal safety, including clothing and equipment, is their personal responsibility.
- In locations where search and rescue services are available, emergency instructions, such as communication frequencies and weather radio broadcasts, are provided with the assumption that the tourist has compatible communication equipment. Persons traveling by boat or kayak are required to possess proper vessel licenses and to have marine charts, tide tables, and adequate safety and navigational equipment on board. But there are rarely coast guard vessels to conduct inspections.
- Management objectives are enforced by periodic patrolling by authorized resource agency personnel. Patrolling is accomplished from strategically located fixed or seasonal bases. Patrols may be conducted by boat, aircraft and various modes of land travel. The availability and frequency of these enforcement resources is affected by financial and personnel resources, the ruggedness of the terrain, and weather conditions.

- Search and rescue and emergency response capabilities vary widely in the Arctic's wilderness areas. Their availability is generally dependent on agency resources, proximity to communities, terrain conditions, and the severity of the weather. For all remote Arctic settlements, the commitment by volunteers to perform these functions is vital.
- Resource monitoring is conducted by resource agency personnel or designated persons with special skills. The frequency and rigor of these monitoring and evaluation endeavors are dependent on the budgetary and personnel resources of the lead agency and support received from NGO's dedicated to support the agency's resource conservation mission. Arctic NGO's play a vital role in this regard. Their commitment of volunteer personnel, fund raising, public awareness, and political advocacy provide invaluable contributions to the conservation of Arctic resources. Therefore, it is well justified to ask polar tourists to become active supporters of such organizations.

These management techniques have been used by Arctic resource agencies in national parks for more than a century. National governance of Arctic wildlife refuges, forest reserves, and UNESCO World Heritage and Biosphere sites rounds out a list of prominent environmental settings offering important sustainability experiences. Site management practices, participatory decision making processes, partnerships with stakeholders, and commitment to international resource conservation agreements are all embodied in the roles and responsibilities of these resource agencies.

Licensed guides and special use permits

One of the most successful management techniques for conserving Arctic resources and directly influencing lawful visitor behavior is guide licensing. Wildlife managers realized long ago that an effective way to insure regulatory compliance was to require anglers and hunters to employ licensed guides. Guide licensing programmes have been established by wildlife management agencies in all Arctic nations. The programmes instruct specialized knowledge of environmental conditions, resource laws and regulations, survival skills, and emergency response skills. Guide licenses are issued based on demonstrated competency of that knowledge and skills. In most jurisdictions refresher courses are required to sustain both educational knowledge and practical skills.

Guide licensing in the Arctic has expanded well beyond angling and hunting. The pursuit of Arctic recreation activities such as mountaineering, rafting, kayaking, and wildlife photography frequently require licensed guides with the special skills required to safely conduct those activities. Licensing requirements vary considerably among Arctic jurisdictions and responsible resource agencies, but fundamental requirements required by all include: proven knowledge of specific locations, technical skills, safe and efficient recreation delivery systems, waste removal, emergency response systems, and detailed reporting of activities and observations. This skill and knowledge takes time to acquire, thus Arctic jurisdictions established a process that evolves from apprenticeship to master status.

States exercising jurisdiction in the Arctic hold guides directly responsible for both resource protection and visitor safety. Critical management issues concerning liability for resource damage and human harm are explicitly addressed by a combination of license requirements that include adequate insurance coverage, bonding, and indemnification. Based on the



huge risks they are legally required to accept, guides very diligently monitor the behavior of their clients. Guides accept the professional and financial risks of their profession for the privilege of pursuing a unique way of life. They generally spend a considerable amount of time teaching their clients appropriate behavior, and respond quickly to instances when clients willfully disregard this information.

Guide licensing regulations not only have beneficial affects on tourist behavior, but on tourist numbers also. Legal prescriptions effectively limit tourist access by requiring they be accompanied by a licensed guide. Numbers are controlled by means of guide to visitor ratios, length of season, and sometimes duration of stay at a particular location. All of these methods strictly control the maximum number of people that may be on site. These requirements may be further specified in special use permits used to govern recreation activities. By example, the terms and conditions of river rafting, mountaineering, and wildlife viewing expeditions can be defined by special use permits.

Arctic guide licensing and the issuance of special use permits have proven to be effective polar tourism management techniques. They are an integral part of resource conservation programmes, such as wildlife management; they directly affect appropriate visitor behavior and numbers; and the reports filed by guides provide vital resource monitoring information that would otherwise be unavailable. This approach to sustainable tourism has also established mutually beneficial partnerships between local communities and resource agencies. Native People and local residents who depend on polar resources for their cultural and economic well-being often serve as guides or possess special use permits to conduct recreation activities. They are the strongest advocates of sustainable management of polar resources, and as guides, they provide a direct method for accomplishing wise stewardship.

The application of a guide licensing programme to Antarctica deserves serious consideration. To date, Antarctic tourism has been conducted by knowledgeable persons who often have distinguished records of scientific service in Antarctica, but no formal training in the skills and techniques of guiding. As the number of Antarctic tourists increase there will be a corresponding need to supply more qualified guides. Proficiency in variety of skills including subject expertise, knowledge of the landing sites, emergency response and communication skills, and tourist management should constitute the basic requirements of the Antarctic guide. These skills would help protect Antarctic resources; enhance the safety of the tourism experience; and advance the development of universal operational and communication protocols needed to respond to emergencies.

For ship-based tourism, in particular, an education programme in polar tourism for guides should be considered. Cruise companies interested in high quality educational skills of their guides may support such an initiative and could request a certificate for their guides. Cooperation with environmental organizations in this field could lead to increasing benefits for conservation through advanced education.

The Special Case of Adventure Tourism

The Arctic

Significant management challenges confront those responsible for accommodating the adventure tourism market. Principally, it is nearly impossible for Arctic recreation resource managers and licensed guides to competently know if the skill levels, health and psychological preparation of the participant are sufficient to meet the rigors of their sports. Inspection of equipment should be conducted, but managers, guides and operators rarely have that opportunity, and usually do not have spare parts and repair facilities to correct deficiencies. Maps, marine charts, tide tables can be supplied and it is hoped that adventurers will responsibly seek these essential aids to navigation. Emergency communication instructions in the form of emergency radio frequencies, protocols, directional beacons, and Standard Operating Procedures for search and rescue (if available) can also be provided. Again, it is essential for the adventurer to avail themselves of these in order to safely pursue their activities (Snyder, 2007).

The Antarctic

For several decades Antarctica has attracted increasing numbers of adventure tourists. These activities range from relatively traditional outdoor sports to extreme events. More traditional pursuits have included mountaineering expeditions and numerous cross country skiing challenges. The more extreme sports include sky diving at the South Pole and scuba diving. A comprehensive discussion of this market and its management implications are found in Lamers, Stel, Amelung 2007.

Cultural Resource Management

The Arctic

A fundamental Arctic tourism management goal is to achieve balance between the public, commercial display of cultural features and the preservation of cultural integrity. Each culture has its own tolerance level for visitation and sharing its resources. Individual Arctic societies define acceptable visitor behavior in terms of the types, magnitude, geographic location, and seasons of resource use. Consequently, cultural tourism management in the Arctic is subject to a set of 'host conditions' in which cultural preservation, economic necessity, and scarce natural resources are continuously debated. The conservation of ancestral homelands, scarce resources, and vulnerability to irreversible change are all significant tourism management issues facing Arctic indigenous societies (Dressler, Berke and Mathias, 2001).

From approximately the mid-1970s to the present, Native People have implemented a variety of policies, programmes, and techniques designed to uniquely reflect their approach to cultural tourism. In many instances these approaches are an affirmation of self-rule. When Alaskan Native Corporations and Villages were established they were empowered and capitalized to create economic development programmes. Several organizations pursued very conventional tourism development, such as hotels and similar commercial attractions, others instituted heritage tour programmes that represented their cultures. In the Canadian Arctic, the Inuit attained governance of Nunavut, a territory spanning one fifth of Canada's entire land mass. Nunavut has pursued various forms of tourism development during the



past 25 years in response to this opportunity (Robbins, 2007). Attainment of Homeland Rule by the Inuit of Greenland in 1979 resulted in the initiation of a very aggressive tourism development programme that includes ambitious commercial activity in Nuuk and diverse venues in rural areas. The Saami throughout Norway, Sweden and Finland are especially active in designing, funding, and operating numerous types of tourism venues that reflect the diversity of their cultures. And the most recent entrant to the Arctic cultural tourism market is Russia's Association of Indigenous People of the North (RAIPON), established in 1990 to accomplish many goals, one of which is tourism development.

As with other forms of tourism management, there is a substantial history of cultural tourism experience in the Arctic. The lessons learned, both good and bad, provide valuable guidance for those seeking to either establish or modify cultural tourism programmes. But the foremost lesson is that Native People and their governments must be vitally involved in decisions regarding how their culture and resources are shared with others.

The Antarctic

Antarctic heritage sites are popular attractions because of their historical significance and because of family and cultural ties to the pioneering settlers who once worked there. Management responses to these demands for visitation have ranged from prohibited entry to cordial invitations. For example, despite the popularity of Sir Ernest Shackleton's exploits, tourist access is denied to Stromness, South Georgia because of environmental protection concerns, while visitor access to Grytviken, where 'the Boss' is traditionally toasted at his graveside, is encouraged. Antarctic heritage sites in the Ross Sea are permitted with strict, but hospitable controls, and the refurbished 1940s research station at Port Lockroy, in the Antarctic Peninsula Region, actively promotes tourism to share its colorful heritage and to commercially support its postal concession (Hughes, 2000; Blanchette, 2002).

Managing the Mass Market

The Arctic

The Arctic's tourism management opportunities and constraints are obviously well known to its people, governments, conservation organizations, and the tour companies that operate there. In response to a strong desire to influence the growth and development of polar tourism, a meeting of affected stakeholders was facilitated in 1995 by the World Wildlife Fund Arctic International Programme (WWF Arctic, 1996). The result of that collaborative effort was the publication in 1996 of *Linking Tourism and Conservation in the Arctic* which contains ten principles for Arctic tourism and associated codes of conduct for both tour operators and tourists. The participatory process and its product, as described by WWF Arctic, involved:

'Representatives from local communities, governments, different sectors of the tourism industry, conservation organizations and scientific institutions used their experience to create these guidelines for arctic tourism. The principles were also adopted into Codes of Conduct for tourism business and tourists which contain more specific information on what to consider when doing business or traveling in the Arctic.'

The Arctic's consensus-based Principles and Codes of Conduct offer a responsible approach to polar tourism management. The ten principles contain an appropriate collection of resource conservation goals, the essential starting point for resource management. Environmental conservation, cultural integrity, economic benefits, visitor safety, and respect for polar resources are comprehensively included in the Principles for Arctic Tourism. The principles are to be realized by two ten point Codes of Conduct for Tour Operators and Tourists in the Arctic, respectively. The direct relationships between the conservation goals and tourism practices by both operators and tourists are clearly described and represent the strength of this approach.

The Principles and Codes are implemented by means of a comprehensive advocacy programme. Stakeholders collectively promote the Principles and Codes through information dissemination, consumer education, and personnel training. To date, they have been diligent in their efforts. The Principles and Codes are described in further detail in the Good Practices section of this publication.

The Antarctic

The first tourism-specific regulations were adopted by the Antarctic Treaty as early as 1966 with the emergence of commercial tourism activities. These regulations were setting rules for visits by tourist groups to Antarctic stations maintained by the Parties. In 1975 a Statement of Accepted Practices was adopted. This was modified and expanded several times and resulted in the Tourism Guidelines adopted in 1994 by the Parties to the Antarctic Treaty. Aside from establishing guidelines for tourist expeditions, the Parties to the Antarctic Treaty also require tourist expeditions to submit reports on their visits.

On August 2005 the UN Secretary General reported on the UN General Assembly on the "question of the Antarctica". The report recognizes (article 107) that "Antarctic tourism activities are increasing, as is their diversity (camping, climbing, kayaking and scuba-diving), presenting new management challenges". As a first step towards a more rigorous control of tourism activities, the Antarctic Treaty Consultative Meetings (ATCMs) adopted two resolutions to enhance information exchange and consultation and to further the development and implementation of site-specific guidelines. However, according to the Secretary General report (paragraph 109), "no consensus has yet been reached on critical issues, such as land-based and high-risk (adventure) tourism, leaving tourism to be regulated to a large extent by the industry itself".

The annual Antarctic Treaty Consultative Meetings (ATCMs) have been discussing tourism and tourism regulation in details since 2001. The Antarctic Treaty parties have adopted guidelines for visitors to the Antarctic. These guidelines are intended to ensure that wildlife and vegetation are not disturbed, protected areas and research programmes are respected, and activities are conducted with a high regard for safety. Guidelines for operators request that they provide advance notification of their activities, confirm visits to scientific stations, ensure that their passengers are properly supervised and report on their expeditions.

The requirements of the Madrid Protocol and other components of the Antarctic Treaty System are implemented by each Treaty party in its own laws, according to its legal system. Visitors to the Antarctic should ensure that they are familiar with the legal requirements that apply to them - for example, the applicable laws may be those of the country where the expedition is



being planned, or the country from which the expedition departs. The most important legal requirements relate to prior environmental assessment of the proposed activities, prohibition on taking or harming flora and fauna, waste disposal, contingency planning and the need for permits if visits to protected areas are contemplated.

Complimentary to the regulatory framework created by the Antarctic Treaty System, one on-site management technique currently available for conserving the resources of the entire continent is self regulation of tourist operations and behavior. The International Association of Antarctic Tour Operators was founded by seven private tour operators in 1991 and, as of 2007, had grown to include 80 members from 14 countries. The majority of tourist ships to Antarctica are members of the Association and some yacht operators are joining them. The members of IAATO endeavored to comply with Recommendation XVIII-I: Guidance for Visitors to the Antarctic by creating visitor guidelines that addressed the environmental protection of landing sites, the safety of the guests, and the establishment of operational protocols to provide emergency assistance. Both guests and all tour operator personnel receive these instructions.

As the UN Secretary-General's Report to the GA in 2005 on the Question of Antarctica states, "since the Twenty-fifth Antarctic Treaty Consultative Meeting, the IAATO has continued to focus its activities on increasing cooperation and field coordination among its members; promoting effective environmental impact assessments; preventing the introduction of alien organisms; promoting self-sufficiency and proper conduct among visitors; developing emergency response and contingency plans; and promoting specific guidelines for sites where the growing bulk of tourism occurs".

The self-regulated approach to tourism management in Antarctica, developed in accordance with the existing regulatory framework, currently depends on the following premises: (1) the tourist industry instructs their clients about appropriate behavior and does not alienate them; (2) voluntary coordination among cruise and tour directors is the only means of managing site visits; and (3) responses to emergency situations are completely dependent on voluntary efforts and the skills of those who, fortuitously, are willing to respond. To date this approach has been effective, but the inherent environmental conditions of Antarctica, its remoteness, and, most importantly, the growing number of tourists will test the sustainability of this approach. As passenger numbers increase, there is a need for increased vigilance at some of the sites. Towards this end, the indicators proposed by UNWTO for the assessment of the sustainability of tourism in Antarctica provide a good base for a monitoring programme. (UNWTO 2004)

Conclusion

Key elements of an agenda for sustainable tourism development in Polar Regions have been developed through the efforts of a combination of governments, inter-governmental bodies, NGOs, business initiatives. They are:

- The 12 principles for sustainable tourism development that have been endorsed by UNEP/UNWTO. While all of these principles cannot be applied in the Antarctic and some Arctic regions (because of the absence of indigenous population and the non existence of local economies), they provide a solid basis of management objectives and evaluative criteria for creating, implementing and evaluating sustainable polar tourism.

- In response to unique circumstances, Arctic governments, Arctic natural resource agencies, NGOs, the tour industry operating in both hemispheres, and Native People have created innovative management techniques that are now applied in both Polar Regions. Some of the most important of these techniques include the Antarctic Treaty tourism Guidelines, and the WWF 10 Arctic Principles.
- Recognizing the need to simultaneously protect many resources from adverse impacts, existing tourism management techniques employ a comprehensive approach to influence appropriate tourist behavior and resource conservation practices.
- An immense amount of information pertaining to the laws, participatory decision-making process, native customs, and numerous techniques employed to manage polar tourism and polar resources has been produced.
- A multitude of good tourism management practices exist throughout both the Arctic and Antarctic that should be evaluated for either expansion to new regions or modified for current tourist activity zones.
- Improved knowledge of the many natural events affecting the environmental conditions of the Polar Regions is growing rapidly. This knowledge is an essential ingredient in the design of tourism management policies and programmes, which must also be adjusted and as necessary reinforced in the face of growing tourist numbers.

What is now needed to advance sustainable polar tourism policies and programmes is the assembly of existing information and open access to that information. Since virtually all polar tourism management documents are in the public record and the Arctic is supremely well connected in this digital age, this is a very feasible agenda that can produce immediate positive results. Remote Arctic communities seeking to manage tourism in a timely manner need immediate access to this type of information. Stakeholders concerned about Antarctic tourism should have access to the full spectrum of available resource conservation and tourism management techniques. The collection and dissemination of appropriate tourism management and resource conservation laws, customs, treaties, codes of conduct, techniques, and customs will provide significant benefits to both Polar Regions.

This free flow of information will allow the benefits derived from tourism in Antarctica by a limited number of persons or commercial entities to be weighed against the global values at risk. Antarctica offers unique opportunities for scientific monitoring of, and research on processes of global and regional importance and was declared a natural reserve devoted to science and peace. A regime for its protection was also developed in the interest of mankind as a whole. As stated in the SG report, “the tourism industry has increased tremendously over the last decade. [...] Efforts should be continued to ensure that commercial activities will not impact on the successes of the Antarctic Treaty system, in particular in securing Antarctica as a natural reserve, devoted to peace and science”





Good Practices in Polar Regions

5

The following tourism management techniques represent good practices currently being used in both the Arctic and Antarctica. These practices were created, implemented and then modified by a diversity of stakeholders concerned about the conservation of polar resources, the preservation of cultural integrity, implementing safe and enjoyable visitor operations, and optimizing economic benefits to local communities. Both the Arctic and the Antarctic have benefited from a remarkably strong consensus based approaches to tourism management. Governments, the private sector, NGOs, and local communities have been vigorous participants in the creation, implementation and evaluation of the several good practices presented in this section.

An equally important characteristic of these practices is that they have all been utilized for a long period of time. A substantial amount of management experience has been gained from their extensive use. Their effectiveness is well known and this represents opportunities for either extending their application or adapting them to new circumstances.

Finally, these good practices are notable because they can add up to a comprehensive approach to tourism management, and have been derived from national authorities, intergovernmental discussions or guidelines and commitments developed independently by the private sector. They recognize the urgent need to address several sustainable management issues simultaneously, with the aim of eliminating or minimizing a range of negative environmental and social impacts while maximizing economic benefits which may also be fed back into environmental management and social gains. The examples below provide a sample of these approaches, which together offer a range of actions and guidelines which could be synthesized into comprehensive framework for sustainable tourism development in Polar Regions.



The Arctic

In order to accurately represent these good practices, they are, to a considerable extent, presented in the words of the organizations that created and implemented them.

1. WWF Arctic Programme's Principles and Codes of Conduct

Recognizing both the positive and negative potential of tourism, in 1995 the World Wide Fund For Nature (WWF) Arctic Programme began developing principles and codes of conduct for Arctic tourism, and a mechanism for implementing them. The goal was to encourage the development of a type of tourism that protected the environment as much as possible, educated tourists about the Arctic's environment and peoples, respected the rights and cultures of Arctic residents, and increased the share of tourism revenues that go to northern communities. WWF believes that the development of this type of tourism is in the best interest not only of conservation, but of residents, business, and government.

The Principles and Codes for Arctic Tourism were developed in cooperation between WWF Arctic Programme, tour operators, conservation organizations, managers, researchers, and representatives from indigenous communities during workshops held on Svalbard in 1996 and 1997. The participants developed a List of Potential Benefits and Potential Problems of Arctic Tourism, Ten Principles for Arctic Tourism, a Code of Conduct for Tour Operators, and a Code of Conduct for Tourists. These guidelines and codes are available in all languages of the eight Arctic nations.

The Ten Principles for Arctic Tourism

Make tourism and conservation compatible

1. Support the preservation of wilderness and biodiversity
2. Use natural resources in a sustainable way
3. Minimize consumption, waste and pollution
4. Respect local cultures
5. Respect historic and scientific sites
6. Arctic communities should benefit from tourism
7. Trained staff are the key to responsible tourism
8. Make your trip an opportunity to learn about the arctic
9. Follow safety rules

Code of Conduct for Tour Operators in the Arctic

1. Make tourism and conservation compatible
1. Support the preservation of wilderness and biodiversity
2. Use natural resources in a sustainable way
3. Minimize consumption, waste and pollution
4. Respect local cultures
5. Respect historic and scientific sites
6. Arctic communities should benefit from tourism
7. Educate staff
8. Make your trip an opportunity to learn about the Arctic
9. Follow safety rules

Code of Conduct for Arctic Tourists

1. Make tourism and conservation compatible
2. Support the preservation of wilderness and biodiversity
3. Use natural resources in a sustainable way
4. Minimize consumption, waste and pollution
5. Respect local cultures
6. Respect historic and scientific sites
7. Arctic communities should benefit from tourism
8. Choose tours with well trained, professional staff
9. Make your trip an opportunity to learn about the Arctic
10. Follow safety rules

The WWF International Arctic Programme sees tourism as one way to support the protection of the arctic environment. According to WWF Arctic, tourism can be conducted responsibly so that visitors learn to appreciate and respect arctic nature and cultures, as well as provide additional income to local communities and traditional lifestyles (www.panda.org, 2007). For a number of years now, WWF has also presented an award for the “best link between tourism and conservation” and thereby produced incentives to concretely apply the 10 principles.





2. Natural Habitat Adventures: WWF Conservation Travel Provider

The effectiveness of WWF Arctic's Code of Conduct for Tour Operators relies on the efforts of the private sector to voluntarily comply. Fortunately, many tour companies throughout the Arctic actively participate in the WWF Arctic Programme. For 20 years Natural Habitat Adventures has demonstrated commitment to conservation and consistent quality in the delivery of wildlife and nature based tour operation experiences. Based on that record, WWF in the United States of America selected Natural Habitat Adventures as their sole Conservation Travel Provider. As stated by the Travel Director of WWF-US:

“Integral to the mission of Natural Habitat Adventures is the understanding that a complete travel experience includes protecting and preserving our natural assets and the wildlife that live in these remarkable places. Because of their dedication to this philosophy, WWF has selected Natural Habitat as their official Conservation Travel Provider to offer travel opportunities in conjunction with WWF” (Natural Habitat Adventures, 2007).

Natural Habitat Adventures conducts polar tourism operations in the Arctic, Antarctic, and South Georgia. As of the 2007-2008 season, they offer 15 Arctic tours with a wide range of experiences extending from wildlife viewing of polar bears, brown bears, orcas, and harp seals in the Canadian and Alaskan Arctic to nature tours of Iceland and Spitsbergen, and visits to several Arctic Protected Areas. Operational good practices include:

- A philosophy of respect for the conservation of nature and local culture.
- Small groups of travelers that both minimize impacts and enhance tourist satisfaction.
- Well qualified expedition leaders that have specialized knowledge of the destinations and possess essential safety and hospitality skills. The ratio of guide to tourist is well designed to facilitate both increased appreciation of the local environment and personal safety.
- The use of the most secluded accommodations, which benefit local communities, appropriately represent native culture, and reduce congestion.
- Revenue sharing with conservation organizations is an integral part of the company's philosophy and a cost knowingly paid by the tourists.
- Tourist education programmes are implemented prior to travel as well as during the tour. The information contained in the programmes introduce the tourist to local environments and culture, the physical conditions likely to be encountered, essential equipment and clothing, and safety considerations. All of these educational efforts are intended to directly affect appropriate visitor behavior, safety, and enjoyment.
- Close coordination with local governments and communities.
- Selection of most appropriate and safe modes of travel in wilderness regions. From the tourists' perspective, this minimizes potential dangers resulting from wildlife encounters, inclement weather, and natural hazards. From a resource conservation perspective, human impacts are reduced by selective routes of travel, alleviating crowding, and minimal contact with the environment.
- Strong efforts are made to enlist the long term support of the tourists for conservation programmes and policies.

- Active participation in a variety of sustainable tourism programmes such as the Carbon Pollution Reduction Program, the Conde Naste Traveler Green List, the Adventure Alliance, and of course WWF.

Most recently, a collection of competing tour operators are collaborating to promote sustainable polar tourism practices similar to those employed by Natural Habitat Adventures. This organization is called the Adventure Collection. It currently has 11 members that include Lindblad Expeditions, National Geographic Expeditions, Canadian Mountain Holidays, Backroads, O.A.R.S., Off the Beaten Path, and Natural Habitat Adventures. The Adventure Collection is also strongly affiliated with Luxury Alliance comprised of cruise companies and luxury hotel organizations. The significance of these alliances is that they offer strong evidence that the good practices advocated by WWF Arctic Programme are gaining acceptance by the polar tourism industry.

3. Arctic Guide Licensing: The Alaskan Sport Fishing Guide Program

Licensed guides perform several important environmental conservation and tourism management functions in the Arctic. They are simultaneously responsible for: (1) the legal and ethical behavior of their clients; (2) the conservation of wildlife and environmental resources in accordance with the laws and regulations that govern their use; (3) the accurate reporting of their activities and their observations of wildlife numbers and environmental conditions; and (4) maintaining sufficient insurance in order to assume liability for loss or damage. All Arctic jurisdictions have a variety of guide licensing programmes and each is designed to manage either specific resources or specific recreational activities.

A representative example of Arctic Guide Licensing is the State of Alaska's Sport Fishing Guide License Program. The programme consists of three requirements that include business requirements, logbook requirements, and guide license requirements. The State of Alaska's Division of Corporations, Business, and Professional Licensing requirements follows:

Business Requirements

Sport Fishing Charter/Guide Business Requirements in 2007:

- All businesses must have a logbook.
- A business must have a current State of Alaska Occupational Business License Number which is available from the Dept. of Commerce and Economic Development, Division of Occupational Licensing. A business license for an unrelated business is not adequate. The license must be specific for sport fish guiding services. Insurance - liability or marine protection policy providing coverage of at least \$100,000 for each incident, and \$300,000 for incidents in a year covering all periods of time when the owner or owner's employees are providing sport fishing services to clients.



Other requirements:

- Provide all guides with a copy of the business license to have on their person while guiding.
- Must ensure that guides employed by that business accurately and completely maintain the logbooks.
- Review and be familiar with the current year Fishing Regulations for Special Guiding Regulations.
- Before operating a charter business or guiding sport anglers on the Kenai River, each guide and vessel must be licensed annually with both ADF&G and the Soldotna office of the Alaska Department of Natural Resources/Division of Parks. For more information call the Kenai River Center at +1 (907) 260-4882.
- Non-profit organizations need to get licensed as a sport fishing business if they are charging clients.
- Guides must carry their own guide license and a copy of the business license issued by ADF&G on their person while guiding.

Logbook Requirements for salt water and fresh water sport fish charter operators

- A logbook is required by ALL sport fish charter/guide operators in both salt waters and fresh waters, regardless of whether a vessel is used or not.
- It is the business owners' responsibility to obtain the logbook. Logbooks can be picked up at all ADF&G offices.
- Once fishing services have commenced, daily trips must be recorded in the log book. All trips must be recorded until the last trip of the season.
- All logbook sheets with activity MUST be returned to the Dept. of Fish and Game no later than the date specified in the Logbook.
- It is the responsibility of the GUIDE to assure that daily fishing activity is recorded in a timely manner (as described in the logbook).
- It is the responsibility of the BUSINESS OWNER to assure that all data for fishing activities in the calendar year are submitted to ADF&G.
- Any local representative of ADF&G or any State of Alaska Peace Officer must be shown a logbook upon request.
- Historical logbook information is available only to the owner of the business. A Notary Public must witness the owner's signature.
- Amendments to the original data can be made once the data entry error has been verified. All edits, additions, amendments, etc. that an owner wants to submit will be accepted. The business operator's records in the "official" database will not be amended. The information will be included in a separate database from the original database. The original hard copies will be saved.

4. Iceland's Comprehensive Tourism Program

Numerous Arctic jurisdictions have produced tourism development strategies that involve residents, Native People, local communities, resource agencies, and diverse businesses. Significant products of these collaborative endeavors include promotional materials, capital improvement programmes, skills training programmes, resource conservation policies and management plans, and cultural preservation programmes. Tourism cooperation among diverse stakeholders has a long history in the Arctic where remoteness and scarce financial resources prevail. More recently, the digital age and the internet have enabled Arctic people to compete more effectively for tourists. It has also provided a means of educating the public about polar conditions, cultural issues, and acceptable behavior. Canada, the United States, Norway, Iceland, and Sweden have an extensive history of comprehensive tourism management and development. Greenland, Finland, and Russia are more recent entrants to this market, but their commitment to quality, sustainable polar tourism is undeniable.

Comprehensive tourism programmes, such as Iceland's, represent examples of good practices because of the important messages they provide to the polar tourist. The ways in which the Arctic communicates with the rest of the world will: influence tourist behavior, build esteem for Arctic cultures and values, and identify allowable uses of Arctic environmental resources. Accurately characterizing appropriate behavior and allowable recreational pursuits prior to the arrival of tourists is a vital management function. Scarce Arctic resources can be more effectively directed toward regions designated for recreational activities and the tourist's expectations can be more successfully realized.

Iceland, like many Arctic jurisdictions, prepares annual vacation planners that are distributed in a variety of formats. Examples of these include:

- Publications by the Icelandic Tourist Board's entitled: Pure. Natural. Unspoiled Iceland 2007; Visit Iceland.
- DVD distributed by the Icelandic Tourist Board entitled: Pure. Natural Unspoiled. Iceland the way Life Should Be.
- A website hosted by the Icelandic Tourist Board, www.admin@goiceland.org, that regularly informs potential tourists about topics ranging from weather conditions to cultural and environmental events.
- These communication techniques are supplemented by alliances with collaborating organizations such as Icelandaire, and The Scandinavian Tourist Board that produce and distribute Travel Planners.
- All of this is further reinforced by a sophisticated telecommunications network that enables the potential tourist to obtain a wealth of information concerning diverse attractions and activities and then design their travel itineraries.

In summary, the Arctic's host nations and communities have a remarkable opportunity to characterize and deliver tourism experiences that are compatible with their environmental conditions and cultural values. Their comprehensive tourism plans and programmes define allowable uses, acceptable behavior, and locations where recreation can occur. In these ways, plans and programmes such as those implemented by Iceland, serve as an important tourism management tool.



Antarctica and the Sub-polar Islands

1. The Lindblad Model

In 1966, Lars Eric Lindblad initiated an Antarctic tour experience that continues to the present. The experience consists of an educational format that personally involves the tourist with the continent. The elements of that experience are as follows:

- Prior to any contact with Antarctica, the tourists are informed about appropriate behavior, safety issues and procedures, and the natural history and historical significance of landing sites.
- Landing sites are selected based on their attractions, vulnerability to intrusion, as well as communication with all tour ships in the region in order to reduce disturbance and congestion.
- Ship personal inspect the landing site before tourists arrive in order to verify their environmental and safety conditions.
- Tourists are embarked on zodiacs with trained naturalists and maritime personnel that insure adequate staff to guest ratios.
- Shore activities involve viewing, photography and hiking within manageable boundaries. The number of persons allowed ashore is limited in order to prevent wildlife disturbance and eliminate perceptions of congestion.
- When all tourists are returned to the ship, a presentation by the naturalist guide is given to reinforce the experience and answer questions.

A fundamental principle of all aspects of this tourism model is that the scale of operations remains small, i.e., small vessels transporting few tourists, with small numbers of persons going ashore. This remarkably sensitive approach to Antarctic tourism has been steadfastly replicated by ship based tour operators, and is strongly endorsed by the members of the International Association of Antarctica Tour Operators (IAATO).

The Lindblad shore excursion model represents the following historically desirable characteristics: (1) small visitor to staff ratios, (2) the use of knowledgeable naturalist and scientists, (3) careful consideration of site conditions prior to landings, (4) preservation of a wilderness experience for guests, (5) coordination among tour operators regarding condition of the sites and alleviation of congestion, (6) careful reporting of frequency of site landings and numbers of passengers put ashore, and (7) the opportunity for tourists to gain a “close-up, intimate” relationship with the continent’s natural and cultural history.

2. IAATO Guidance for Visitors to the Antarctic

Recommendation XVIII-1, adopted at the Antarctic Treaty Meeting, Kyoto, 1994

Activities in the Antarctic are governed by the Antarctic Treaty of 1959 and associated agreements, referred to collectively as the Antarctic Treaty System. The Treaty established Antarctica as a zone of peace and science.

In 1991, the Antarctic Treaty Consultative Parties adopted the Protocol on Environmental Protection to the Antarctic Treaty, which designates the Antarctic as a natural reserve. The Protocol sets out environmental principles, procedures and obligations for the comprehensive protection of the Antarctic environment, and its dependent and associated ecosystems. The Consultative Parties have agreed that, pending its entry into force, as far as possible and in accordance with their legal system, the provisions of the Protocol should be applied as appropriate.

The Environmental Protocol applies to tourism and non-governmental activities, as well as governmental activities in the Antarctic Treaty Area. It is intended to ensure that these activities do not have adverse impacts on the Antarctic environment, or on its scientific and aesthetic values.





This Guidance for Visitors to the Antarctic is intended to ensure that all visitors are aware of, and are therefore able to comply with, the Treaty and the Protocol. Visitors are, of course, bound by national laws and regulations applicable to activities in the Antarctic. All members of the IAATO organization provide their clients a thorough briefing of these principles and regulatory requirements before arrival in Antarctica. These elements are reproduced in the box below.

Protect Antarctic Wildlife

Taking or harmful interference with Antarctic wildlife is prohibited except in accordance with a permit issued by a national authority.

- Do not use aircraft, vessels, small boats, or other means of transport in ways that disturb wildlife, either at sea or on land.
- Do not feed, touch, or handle birds or seals, or approach or photograph them in ways that cause them to alter their behavior. Special care is needed when animals are breeding or moulting.
- Do not damage plants, for example by walking, driving, or landing on extensive moss beds or lichen-covered scree slopes.
- Do not use guns or explosives. Keep noise to the minimum to avoid frightening wildlife.
- Do not bring non-native plants or animals into the Antarctic such as live poultry, pet dogs and cats or house plants.

Respect Protected Areas

A variety of areas in the Antarctic have been afforded special protection because of their particular ecological, scientific, historic or other values. Entry into certain areas may be prohibited except in accordance with a permit issued by an appropriate national authority. Activities in and near designated Historic Sites and Monuments and certain other areas may be subject to special restrictions.

- Know the locations of areas that have been afforded special protection and any restrictions regarding entry and activities that can be carried out in and near them.
- Observe applicable restrictions.
- Do not damage, remove, or destroy Historic Sites or Monuments or any artifacts associated with them.

Respect Scientific Research

Do not interfere with scientific research, facilities or equipment.

- Obtain permission before visiting Antarctic science and support facilities; reconfirm arrangements 24-72 hours before arrival; and comply with the rules regarding such visits.
- Do not interfere with, or remove, scientific equipment or marker posts, and do not disturb experimental study sites, field camps or supplies.

Be Safe

Be prepared for severe and changeable weather and ensure that your equipment and clothing meet Antarctic standards. Remember that the Antarctic environment is inhospitable, unpredictable, and potentially dangerous.

- Know your capabilities, the dangers posed by the Antarctic environment, and act accordingly. Plan activities with safety in mind at all times.
- Keep a safe distance from all wildlife, both on land and at sea.
- Take note of, and act on, the advice and instructions from your leaders; do not stray from your group.
- Do not walk onto glaciers or large snow fields without the proper equipment and experience; there is a real danger of falling into hidden crevasses.
- Do not expect a rescue service. Self-sufficiency is increased and risks reduced by sound planning, quality equipment, and trained personnel.
- Do not enter emergency refuges (except in emergencies). If you use equipment or food from a refuge, inform the nearest research station or national authority once the emergency is over.
- Respect any smoking restrictions, particularly around buildings, and take great care to safeguard against the danger of fire. This is a real hazard in the dry environment of Antarctica.

Keep Antarctica Pristine

Antarctica remains relatively pristine and is one of the largest wilderness area on Earth. It has not yet been subjected to large scale human perturbations. Please keep it that way.

- Do not dispose of litter or garbage on land. Open burning is prohibited.
- Do not disturb or pollute lakes or streams. Any materials discarded at sea must be disposed of properly.
- Do not paint or engrave names or graffiti on rocks or buildings.
- Do not collect or take away biological or geological specimens or man-made artifacts as a souvenir, including rocks, bones, eggs, fossils, and parts or contents of buildings.
- Do not deface or vandalize buildings, whether occupied, abandoned, or unoccupied, or emergency refuges.



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About the International Ecotourism Society

TIES is a global network of industry practitioners, institutions and individuals helping to integrate environmental and socially responsible principles into practice. TIES promotes responsible travel to natural areas that conserves the environment and improves the well-being of local people by:

- > creating an international network of individuals, institutions and the tourism industry
- > educating tourists and tourism professionals
- > influencing the tourism industry, public institutions and donors to integrate the principles of ecotourism into their operations and policies

For more information,
see **www.ecotourism.org**

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The UNEP Division of Technology, Industry and Economics (DTIE) helps governments, local authorities and decision-makers in business and industry to develop and implement policies and practices focusing on sustainable development.

The Division works to promote:

- > sustainable consumption and production,
- > the efficient use of renewable energy,
- > adequate management of chemicals,
- > the integration of environmental costs in development policies.

The Office of the Director, located in Paris, coordinates activities through:

- > **The International Environmental Technology Centre** - IETC (Osaka, Shiga), which implements integrated waste, water and disaster management programmes, focusing in particular on Asia.
- > **Sustainable Consumption and Production** (Paris), which promotes sustainable consumption and production patterns as a contribution to human development through global markets.
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Dynamic natural events and human activities in the Polar Regions are having a significant combined impact on these fragile environments. In populated regions of the Arctic, social norms, cultural integrity, and economic interactions are also being affected. Partly responsible for these changes and impacts is an increase in tourism, which is now one of the principal human activities in the Polar Regions. This increasing tourism activity will in turn be impacted by the current and anticipated natural and human-induced changes to this dynamic environment.

This publication outlines the key features of the Polar Region environment and describes tourism's multiple roles and impacts in both the Arctic and Antarctica. It describes the significance of Polar Region tourism, explains the trends and impacts, proposes an agenda for sustainable tourism development, and outlines principles, guidelines and selected good practices to conserve these unique wilderness areas through the regulation and management of tourism.

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