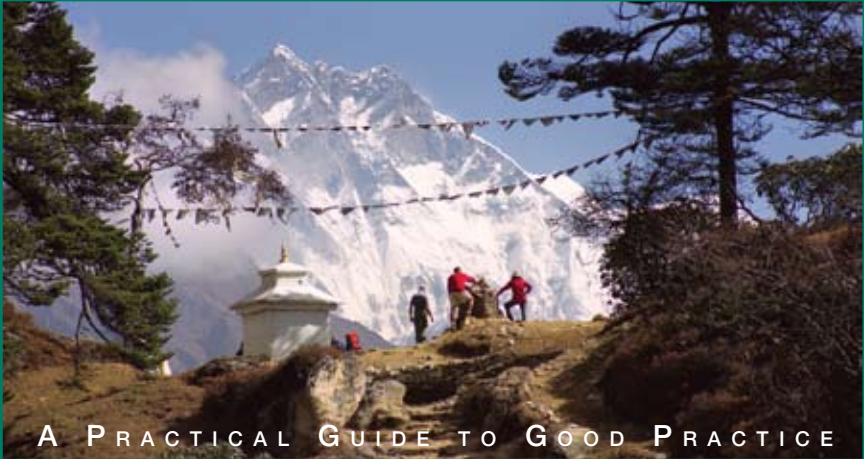




# TOURISM AND MOUNTAINS

*A Practical Guide to Managing the  
Environmental and Social Impacts  
of Mountain Tours*

UNITED NATIONS ENVIRONMENT PROGRAMME



A PRACTICAL GUIDE TO GOOD PRACTICE



TOUR OPERATORS INITIATIVE  
FOR SUSTAINABLE TOURISM DEVELOPMENT

# TOURISM AND MOUNTAINS

*A Practical Guide to Managing the  
Environmental and Social Impacts  
of Mountain Tours*

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ISBN: 978-92-807-2831-6

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## FOREWORD

Mountains have been a source of wonder and inspiration for human societies and cultures since time immemorial. Our fascination for these unique wilderness areas has been partly based on their remoteness and inaccessibility. Yet, today, the elements that attract people to mountains – clean air, diverse landscapes, rich biodiversity, and unique cultures – are under threat, partly because of poorly managed and non-sustainable tourism.

Travel to mountain areas, which already attracts up to 20 percent of global tourism, is increasing rapidly. The investment, operational and managerial decisions of tour operators, other tourism professionals and the wider industry are helping to determine the level of both negative and positive impacts of tourism in mountain environments. It is therefore vital to work with this sector to develop and promote sustainable tourism practices.

This Guide to Good Practice, the latest in a series to help the tourism sector integrate sustainability into its business, was developed through a collaborative process by the United Nations Environment Programme, the Tour Operators' Initiative for Sustainable Development, Conservation International and their partners. It offers a key resource for operators and purchasers of mountain recreational tours.

We invite you to read the guide, and to work with us in promoting sustainable tourism development that benefits the mountain environment, its people and your business.

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This guide is part of a series of “Practical Guides to Good Practice” developed by the United Nations Environment Programme and Conservation International, in partnership with the Tour Operators’ Initiative. For copies of the additional guides, please visit: [www.unep.fr](http://www.unep.fr), [www.celb.org](http://www.celb.org) or [www.toinitiative.org](http://www.toinitiative.org)

We are grateful to the following individuals for their comments and assistance in the development of this guide:

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This Guide is published with the support of the French Ministry of Ecology and Sustainable Development.

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## INTRODUCTION

### WHY WE CREATED THIS GUIDE

Travel to mountain ecosystems is increasing at a rapid pace, as growing numbers of tourists are attracted to the clean air, unique landscapes and wildlife, scenic beauty, culture, history, and recreational opportunities that mountain destinations offer. Yet, while this growth provides important benefits to local communities and national economies, the very popularity of mountain areas also poses a potential threat to the health of their natural and cultural resources. Mountains, which make up nearly a quarter of all land area on Earth and are home to at least 12 percent of the world's human population,<sup>1</sup> contain a wide variety of habitats, many of which have extremely high levels of unique and rich biodiversity. Poorly planned and implemented tours and tourist activities can have a serious impact on these often fragile ecosystems, as well as on the communities that inhabit mountain regions.

This guide has been created to help mountain-based tour operators and other mountain recreation professionals improve their environmental and social performance. We begin with an overview of mountain ecosystems and communities and a discussion of the nature and potential impacts of mountain tourism and tour activities. Next, we review good practices for a range of key issues related to mountain tourism. These issues are grouped into three main categories: good business practices, good environmental practices and good practices for specific tour activities. For each individual issue, we offer a brief summary, the rationale for good practices, recommendations of specific activities and practices, and examples of what other operators around the world are doing. A self-assessment checklist is included – at the back of this guide – for tour operators to use both to identify areas of business activity that need improvement and as a tool for choosing business partners and suppliers based on sustainability criteria.

This publication is part of a series of Practical Guides to Good Practice developed by Conservation International and the United Nations Environment Programme for various sectors of the tourism industry. One set of these guides, which is aimed at tourism professionals, including the marine recreation sector, the cruise sector and the accommodations sector, encourages providers to implement good practices and work jointly with national and local agencies to develop and implement sustainable tourism strategies. Another group of guides – of which this publication is one – is aimed specifically at tour operators offering tours in particular environments, including rainforest-based tours, desert-based tours and land-based tours. For more on these other publications, please see the Sources of Further Information section at the end of this guide.

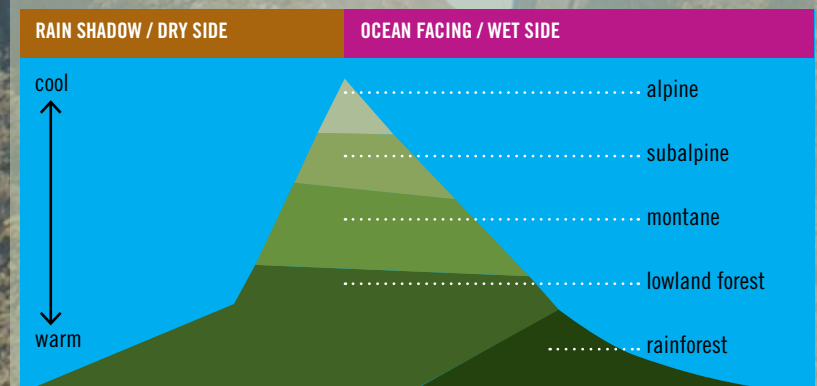
### MOUNTAINS OF THE WORLD

Mountains cover about 24 percent of the world's land surface, ranging over every continent and all major types of ecosystems, from deserts and tropical forests to polar icecaps (see map on following page).

All mountains have one major common characteristic: rapid changes in altitude, climate, vegetation and soil over very short distances that lead to dramatic differences in habitat and high levels of biodiversity. Mountain weather can be unpredictable, and rainfall varies significantly.

Due to this diversity of conditions, it is difficult to develop a standard definition of a mountain. In general, mountains can be said to be higher than 300 meters (984 feet), but it is more appropriate to discuss them in terms of zones of similar altitude, slope and vegetation type. In very general terms, mountains usually comprise a montane, subalpine and alpine zone (see Figure 1). Each zone tends to contain a unique range of plant and animal species, many of which may be endemic to a particular location.

Figure 1: Mountain Life Zones



Source: United States Department of the Interior, National Parks and Wildlife Service online 2006

**MOUNTAIN RANGES OF THE WORLD**

*North America*

- **Alaska Range**  
| United States
- **Appalachian Mountains**  
| United States
- **Brooks Range**  
| United States
- **Coastal Mountains**  
| United States, Canada
- **Rocky Mountains**  
| United States, Canada
- **Sierra Madre**  
| Mexico

*South America*

- **Andes**  
| Argentina, Chile, Bolivia, Peru, Ecuador, Columbia

*Europe*

- **Alps**  
| Central Europe
- **Caucasus Mountains**  
| Ukraine
- **Kjolen Mountains**  
| Norway
- **Pyrenees**  
| France, Spain
- **Taurus Mountains**  
| Turkey
- **Thian Mountains**  
| Eastern Europe
- **Ural Mountains**  
| Russia

*Africa*

- **Atlas Mountains**  
| Morocco, Algeria
- **Crystal Mountains**  
| Gabon, Congo, Zambia, Angola
- **Drakensberg Mountains**  
| South Africa
- **Mitumba Mountains**  
| Zambia

*Asia*

- **Altay Mountains**  
| Mongolia
- **Himalayan Mountains**  
| Afghanistan, Pakistan, India, Tibet, Nepal, Kashmir, China
- **Tian Shan**  
| Tajikistan, Kyrgyzstan
- **Zagros Mountains**  
| Iran

*Oceania*

- **Great Dividing Range**  
| Australia
- **Southern Alps**  
| New Zealand

The alpine zone includes the higher, colder and more snow-prone parts of mountains, where vegetation is sparse due to a short growing season and the extreme environmental conditions. In the subalpine zone, which includes mid-altitude areas, vegetation covers more of the landscape and trees tend to take on a low, shrub-like and twisted appearance known as *krummholz*. The montane zone covers the lower part of mountains, where forests grow tall and dense.

The biodiversity of mountain ecosystems and the uniqueness of many of their landscapes and animal and plant species represent important conservation values. Mountains also supply important resources and benefits to human society. They are the source of about 80 percent of global fresh water supplies and provide significant food, hydroelectricity, timber and mineral products to more than half of the world's population.

## MOUNTAIN COMMUNITIES

About 12 percent of the world's human population live in the mountains, with another 14 percent living next to or very near mountain areas and dependent on their resources. Of these people, about half are concentrated in the Andes, the Hengduan-Himalaya-Hindu Kush system and a variety of different African mountains. While mountains in the northern hemisphere are often sparsely populated, some tropical mountain areas have population densities of more than 400 people per square kilometer.<sup>2</sup>

Most mountain communities are rural, and most live in poverty. These communities often have little or no political power and are dependent on economies based largely on barter trade and agriculture. Mountain ecosystems hold important social, cultural, environmental and economic significance for the health and livelihood of these communities, and their close relationship with the land has helped them develop unique cultural identities, knowledge and skills.

Mountain communities include several thousand different ethnic groups, and the uniqueness and diversity of these cultures is particularly attractive to many tourists. Well-managed tourism can be an ally in preserving local culture and values, while at the same time improving the social conditions of the poor and local communities. Poorly managed tourism, however, can contribute to the loss of cultural integrity and identity through cultural assimilation.

## MOUNTAIN TOURISM

Mountain areas are second only to coasts and islands as popular tourism destinations, generating 15-20 percent of annual global tourism, or US\$70-90 billion per year. Tourists are attracted to mountain destinations for many reasons, including the climate, clean air, unique landscapes and wildlife, scenic beauty, local culture, history and heritage, and the opportunity to experience snow and participate in snow-based or nature-related activities and sports.

While modern forms of transportation have made even remote mountain areas accessible to increasing numbers of visitors, mountain tourism tends to be very unevenly distributed, with a small proportion of locations having significant tourism infrastructure. For example, in the European Alps, where tourism now exceeds 100 million visitor-days per year, 40 percent of communities have no tourism at all, while 10 percent have extensive and specialized tourism infrastructure.<sup>3</sup>

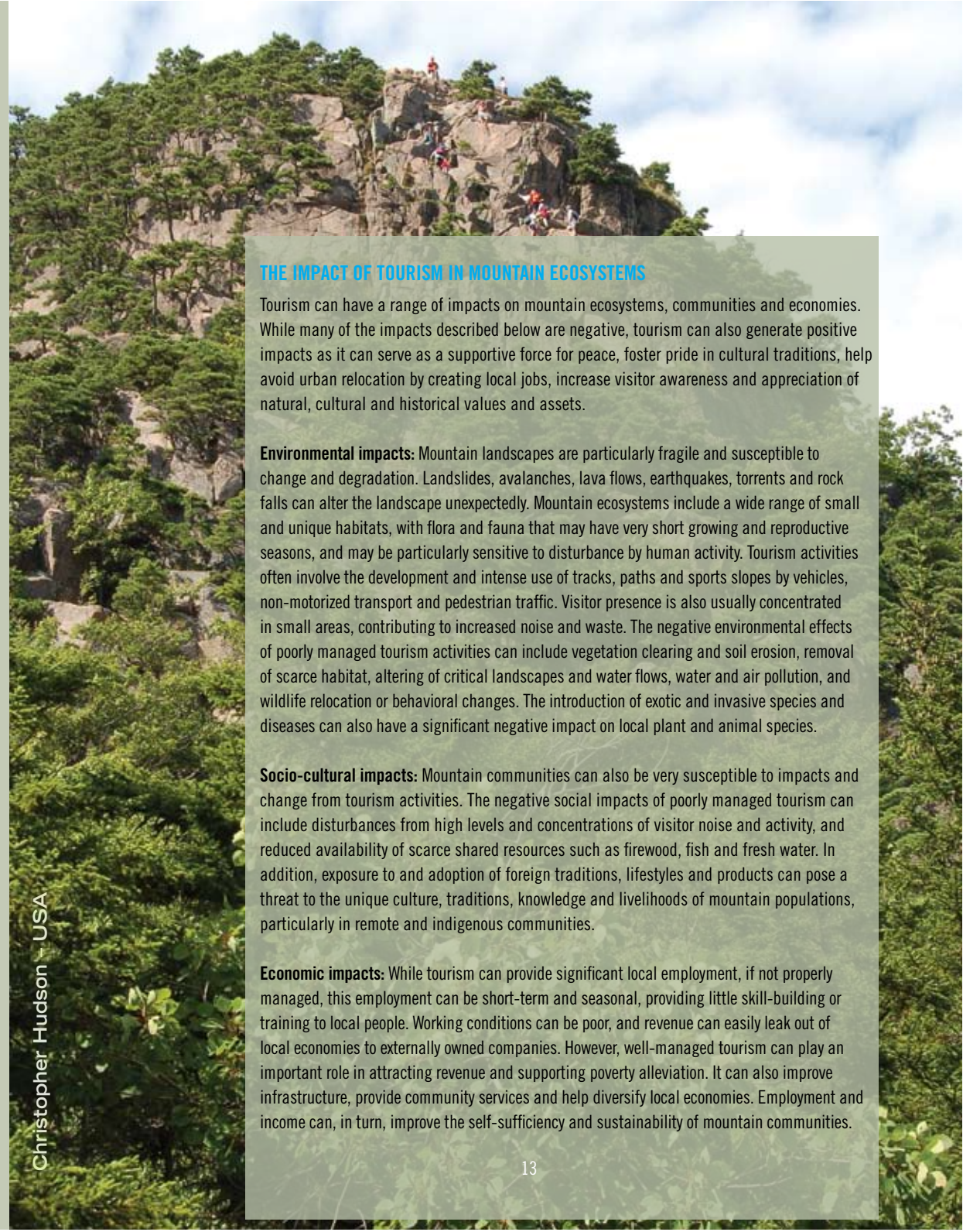
## MOUNTAIN TOURS

Mountain tours may be self-guided or led by a tour guide. They may last hours, days or weeks and can involve a range of land-, snow- and freshwater-based activities.

Mountain tours often include one or more overnight stays. Where temporary forms of accommodation, such as tents or vehicles (e.g. camping trailers or mobile homes) are used, these stays are considered camping. The equipment and provisions needed for nature walks and camping activities vary depending on the duration of the walk, the weather conditions and predictability of the weather, and environmental conditions, such as the incline, likelihood of ice on trails or the level of snow. The availability of facilities, such as toilets, food, water and shelter, along the route will also help determine the necessary supplies.

The most common elements of mountain-based tours include:

■ **Nature walks.** An important means of experiencing the mountain flora, fauna and landscape, walks provide tourists with an opportunity to view, interact with and learn about native birds, mammals, reptiles, insects and other wildlife. Encounters with wildlife, which may be unplanned and occur unexpectedly during a tour or purposefully sought out and offered as a core part of a tour program, add significant value for visitors. The scenery and specific experiences of a walk may be quite different, depending on the season, and can be a particularly important source of summer income for areas that are generally dependent on snow-based activities.



Christopher Hudson - USA

## THE IMPACT OF TOURISM IN MOUNTAIN ECOSYSTEMS

Tourism can have a range of impacts on mountain ecosystems, communities and economies. While many of the impacts described below are negative, tourism can also generate positive impacts as it can serve as a supportive force for peace, foster pride in cultural traditions, help avoid urban relocation by creating local jobs, increase visitor awareness and appreciation of natural, cultural and historical values and assets.

**Environmental impacts:** Mountain landscapes are particularly fragile and susceptible to change and degradation. Landslides, avalanches, lava flows, earthquakes, torrents and rock falls can alter the landscape unexpectedly. Mountain ecosystems include a wide range of small and unique habitats, with flora and fauna that may have very short growing and reproductive seasons, and may be particularly sensitive to disturbance by human activity. Tourism activities often involve the development and intense use of tracks, paths and sports slopes by vehicles, non-motorized transport and pedestrian traffic. Visitor presence is also usually concentrated in small areas, contributing to increased noise and waste. The negative environmental effects of poorly managed tourism activities can include vegetation clearing and soil erosion, removal of scarce habitat, altering of critical landscapes and water flows, water and air pollution, and wildlife relocation or behavioral changes. The introduction of exotic and invasive species and diseases can also have a significant negative impact on local plant and animal species.

**Socio-cultural impacts:** Mountain communities can also be very susceptible to impacts and change from tourism activities. The negative social impacts of poorly managed tourism can include disturbances from high levels and concentrations of visitor noise and activity, and reduced availability of scarce shared resources such as firewood, fish and fresh water. In addition, exposure to and adoption of foreign traditions, lifestyles and products can pose a threat to the unique culture, traditions, knowledge and livelihoods of mountain populations, particularly in remote and indigenous communities.

**Economic impacts:** While tourism can provide significant local employment, if not properly managed, this employment can be short-term and seasonal, providing little skill-building or training to local people. Working conditions can be poor, and revenue can easily leak out of local economies to externally owned companies. However, well-managed tourism can play an important role in attracting revenue and supporting poverty alleviation. It can also improve infrastructure, provide community services and help diversify local economies. Employment and income can, in turn, improve the self-sufficiency and sustainability of mountain communities.

**Land-based adventure activities.** Such activities include cycling, mountain biking, quadbiking, horseback riding, canyoneering and, less often, rock climbing, ice climbing, hang gliding and caving. While the weather conditions (snow, ice-covered or dry) and access to sites may differ (e.g. frozen rivers or lakes or obscured or blocked trails), these activities can occur in mountain areas both on and off snow season.

**Freshwater-based recreational activities.** Activities including river tours, canoeing, sailing, windsurfing, kite surfing, kayaking, rafting and freshwater fishing may also be a part of mountain tours.

**Snow-dependent recreation activities.** Activities such as cross country, downhill and glacier skiing, heli-skiing, snow scootering, snowboarding, tobogganing, snowshoe walking and sledding are generally restricted to higher alpine mountain areas and concentrated in snowfall seasons.

One or more of the above activities might be incorporated into a tour as a point of interest, or an entire tour can be created around just one of these niche activity areas. In either case, operators need to be prepared to cater to a range of visitor ages, skill levels and equipment needs. Some visitors may be complete novices, just interested in trying something different, while others may be more experienced and traveling solely for the purpose of engaging in one or more of these activities. Some may bring everything with them, while others will expect operators to be able to supply equipment, clothes, transport and/or lessons.

Tour activities are largely dictated by environmental conditions. For example, snow- and ice-based activities are dependent on the existence and extent of ice or snow cover, while water- and nature-based activities may easily be restricted by too much snow and ice. All activities are susceptible to temperature changes, blizzards, landslides and weather conditions. In some areas, volcanic eruptions can also be an issue. These factors are often unpredictable and will affect what activities are practical, feasible and safe in light of the experience and skills of the operators and visitors in the tour group.



## THE BENEFITS OF GOOD PRACTICE

Mountain-based tour operators can have considerable influence in minimizing negative impacts and promoting positive impacts by adopting good environmental and social practices in their tour operations. Responsible practices can help increase the quality of visitor experiences and maintain the viability of tourism businesses by protecting the biodiversity, preserving the habitats and landscapes and supporting the communities that visitors are coming to see.

Adopting good practices can help operators develop a positive reputation and recognition as a responsible operator among tourists who are increasingly showing a preference for sustainable products and suppliers who demonstrate good social and environmental practices. Good practices can also contribute to positive relationships with suppliers, staff and local communities, who are more likely to support operators that are conserving local environments, contributing to the well-being of local communities and ensuring that mountain ecosystems are conserved for future generations

## VISITOR EDUCATION AND INTERPRETATION

### WHAT IS THE ISSUE?

Tourists are increasingly interested in learning more about the different ecosystems, wildlife, cultures and communities that they will encounter during the course of their trip. Visitor education and interpretation efforts can help communicate ideas and messages to travelers that increase their awareness, knowledge, understanding and appreciation of the natural and cultural environments of a destination. Interpretation may be incidental to a tour, or form a major focus of any mountain-based trip, and may include a variety of media, displays and interactive activities.

### WHY SHOULD I CARE?

- | Including environmental education and interpretation elements in a tour program can add value to the visitor experience and differentiate a tour from other products, allowing an operator to stand out in the marketplace.
- | Providing education and interpretation can enhance an operator's reputation as knowledgeable and responsible, making it more attractive to environmentally conscious and discerning customers.
- | Education and interpretation can attract higher-yield customers who are happy to pay extra to gain knowledge and learn about the natural and cultural history of the destination they are visiting.
- | A better understanding and appreciation of a destination's environment and culture can enhance visitors' motivation to behave in appropriate and sustainable ways, and to contribute to conservation and support local communities and economies.
- | Improving visitor awareness of local culture and laws and the state of the local environment can help minimize damage to cultural and heritage sites and the surrounding natural landscapes, ecosystems and wildlife.
- | Appropriate and sustainable behavior on the part of travelers can help ensure that local communities will continue to be hospitable and friendly, maintaining the economic viability of local tourism businesses and the quality of visitor experiences and interaction with local people.
- | Changes in awareness and attitudes among tourists can also encourage them to continue to support local conservation and community development projects when they return home.

## WHAT CAN I DO?

- | Identify the main values, assets and sites of interest on each individual tour and in the region, including environmental, cultural, social and historical aspects.
  - Collect accurate facts and figures on each of the key areas identified, by consulting reference books, scientific journals, documentaries, conservation organizations, professionals or knowledgeable local people.
- | Identify the main behaviors to encourage among visitors, for example how they can contribute to the protection of mountain environments and support local communities.
- | Profile the target audience by talking to customers to get an idea of their perceptions, interests and knowledge, in order to decide what information would be most interesting and useful. Consider how to cater for speakers of other languages, children and people with disabilities.
- | Develop a range of education and interpretation materials.
  - Consult with conservation and tourism organizations when deciding how to present information and ideas, as there may be already existing resources and materials.
  - Develop a range of materials to provide variety and allow for flexibility in tailoring interpretation activities for different groups. Materials might include signage, videos, static or interactive displays, fact sheets and brochures, story telling, theater performances, role plays, photographs, activity books, talks by specialists, and games and craftwork.
- | Provide visitors with pre-tour information on relevant issues and appropriate behaviors related to the natural environment and local culture, including:
  - local environmental values, assets and attractions;
  - conservation information regarding important or threatened species and habitats;
  - the main impacts of visitors and how to minimize them;
  - appropriate interaction with mountain wildlife, landscapes and ecosystems;
  - cultural do's and don'ts;
  - appropriate language, physical contact and clothing;
  - protocols for photography;
  - sites, areas or subjects that should be avoided; and
  - items that should not be sat on or touched.
- | Provide information about products and souvenirs derived from rare or threatened species and discourage purchase of such items.
- | Train guides in visitor education and interpretation, either through existing courses and workshops or company-developed programs.

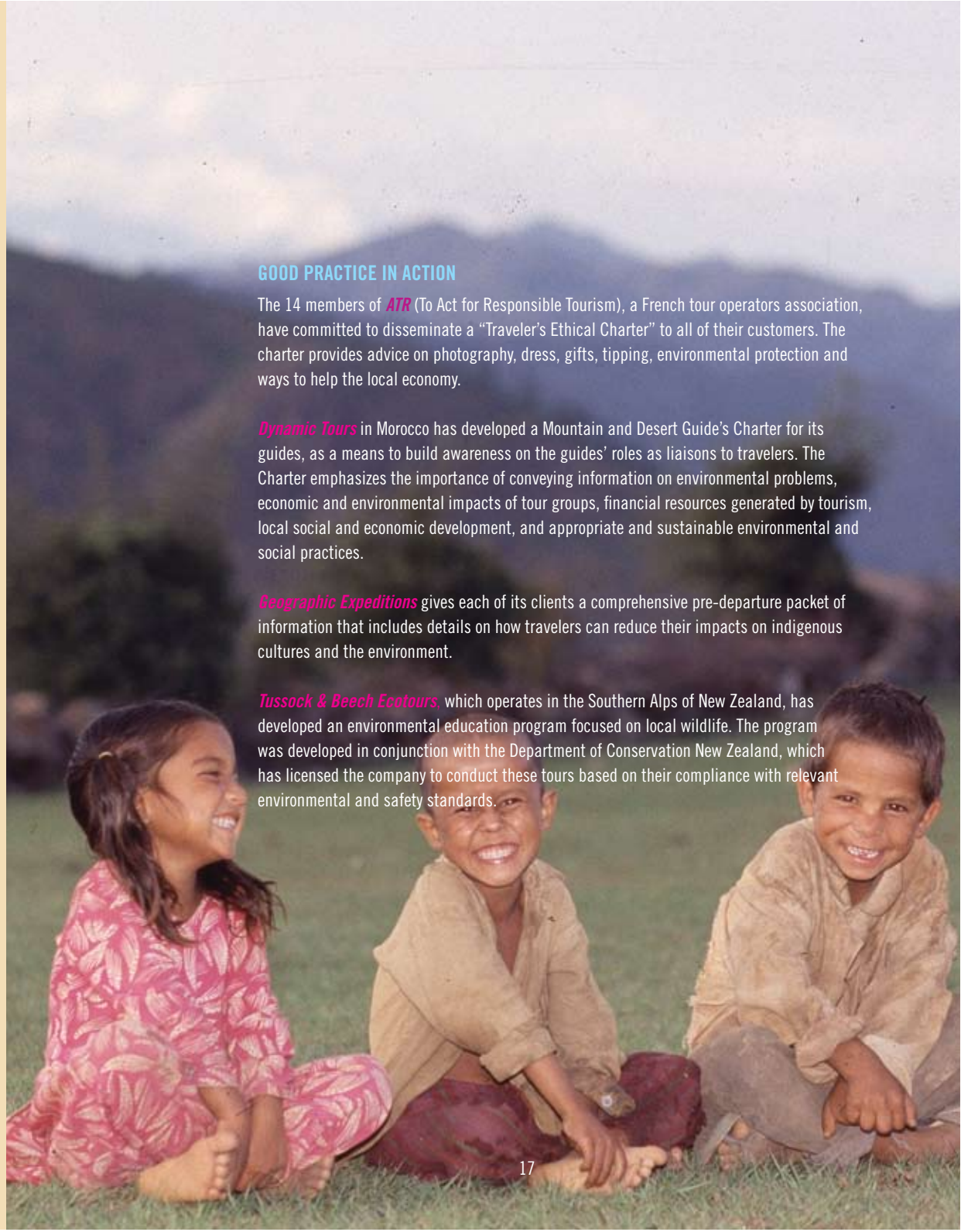
## GOOD PRACTICE IN ACTION

The 14 members of *ATR* (To Act for Responsible Tourism), a French tour operators association, have committed to disseminate a “Traveler’s Ethical Charter” to all of their customers. The charter provides advice on photography, dress, gifts, tipping, environmental protection and ways to help the local economy.

*Dynamic Tours* in Morocco has developed a Mountain and Desert Guide’s Charter for its guides, as a means to build awareness on the guides’ roles as liaisons to travelers. The Charter emphasizes the importance of conveying information on environmental problems, economic and environmental impacts of tour groups, financial resources generated by tourism, local social and economic development, and appropriate and sustainable environmental and social practices.

*Geographic Expeditions* gives each of its clients a comprehensive pre-departure packet of information that includes details on how travelers can reduce their impacts on indigenous cultures and the environment.

*Tussock & Beech Ecotours*, which operates in the Southern Alps of New Zealand, has developed an environmental education program focused on local wildlife. The program was developed in conjunction with the Department of Conservation New Zealand, which has licensed the company to conduct these tours based on their compliance with relevant environmental and safety standards.





## INFRASTRUCTURE DEVELOPMENT

### WHAT IS THE ISSUE?

Built infrastructure that may be associated with mountain tours include ski lifts and snow makers; paths, boardwalks, suspended walkways, bridges and fences; bird hides, viewing platforms and lookouts; signage; toilet facilities, picnic and camping grounds; and information centers and vehicle parks. These structures may facilitate access to and through mountain areas, provide convenience services for visitors, or offer a way to distribute environmental education and interpretation materials.

Infrastructure may be positioned on private, protected or public land. Although it is land owners and managers who will ultimately determine the exact location and use of infrastructure, companies can work with land owners and managers, service providers and other tour operators to ensure that the design and location of mountain infrastructure helps support the conservation of the landscapes, habitat and wildlife that attract tourists to mountain areas.

### WHY SHOULD I CARE?

- | Well-planned, designed and sited infrastructure can:
  - help prevent erosion from vehicle and pedestrian traffic;
  - reduce the disturbance of wildlife;
  - keep visitors to defined routes and paths, limiting impacts on flora and fauna;
  - limit access to fragile and sensitive sites;
  - limit access to private community areas;
  - help protect the quality of mountain attractions;
  - improve and facilitate a safer and more satisfying visitor experience; and
  - limit the impact of larger groups and repeated, intense use of certain areas.
- | Poorly planned, designed and sited infrastructure can:
  - lead to erosion that will alter the natural landscape;
  - lead to land-clearing and habitat conversion;
  - lead to wildlife disturbance and relocation through increased noise, light and human presence;
  - block or redirect natural watercourses and drainage paths;
  - create over-shaded areas, thus altering vegetation composition and distribution;
  - detract from the “natural” countryside experience and appearance; and
  - affect the day-to-day lifestyle of mountain communities.



- | Untreated construction materials can carry exotic insects, spores, seeds and microbes that can compete with and threaten native species.
- | Chemicals from paints and treatments can pollute local water bodies.

### WHAT CAN I DO?

- | Work with local land owners and managers, service providers and other tour operators to identify sites with the greatest need for infrastructure, such as areas of high foot or vehicle traffic.
- | Work with other local stakeholders to identify practical designs and locations that integrate into the local cultural and natural environments.
- | Share labor and other construction costs with other service providers and tour operators.
- | Coordinate the timing of tours with other operators to allow the sharing of existing infrastructure.

### GOOD PRACTICE IN ACTION

*Whitepod*, a unique tourist camp located in the Swiss Alps, is made up of semi-permanent dome-shaped tents, or pods, that serve as guest rooms, with a central chalet housing the dining room, common room and bathroom facilities. The pods are heated with wood-burning stoves and all furniture is made from recycled materials or sustainably harvested wood. The pods are covered with white canvas in the winter and green in the summer, to blend in with the surrounding landscape. They are constructed on raised wooden platforms and can be taken down at any time without leaving any trace on the ground.



## HEALTH AND SAFETY

### WHAT IS THE ISSUE?

All tour operators have a responsibility, as far as possible, to protect visitors and guides from hazards that may occur during tour activities. For the inexperienced traveler, and even for experienced guides or visitors, mountains can be challenging environments in which to walk, ride or drive, particularly in snow and ice. Environmental conditions can be variable and often extreme, with very low temperatures, very steep and slippery gradients, and hazardous natural events, such as snowstorms, wildfires or avalanches. In addition, most land-based, snow-dependent and freshwater-based adventure activities require the use of specialized equipment, crafts and skills that can require significant levels of physical exertion.

### WHY SHOULD I CARE?

- | Incorrectly operated vessels, vehicles and aircraft can break down or cause accidents, particularly in difficult or congested conditions or rough terrain.
- | Poorly constructed or maintained infrastructure such as ski lifts, pathways, hides and lookouts may pose a risk to tourists using those facilities.
- | Poorly maintained vehicles and a lack of fitted safety equipment such as seatbelts may be hazardous to drivers and passengers.
- | Inappropriate behavior by tourists and guides, such as hanging objects or limbs outside of a vehicle, can pose risks to both drivers and passengers.
- | Inappropriate use and maintenance of adventure equipment and inadequate experience or supervision of their use can cause injuries, particularly in difficult conditions, terrain or congestion.
- | A lack of information on or understanding of the types of risks presented by a particular tour and how to avoid and respond to them can increase the chance of exposure to danger as well as the severity of potential injuries, for both guides and visitors.
- | Visitors with health problems and those who do not have the necessary level of fitness or skill for physically demanding activities can be at risk for injuries, particularly in difficult conditions.
- | Avalanches, landslides and severe storms can prevent access to medical services and supplies and/or food and water supplies.

### WHAT CAN I DO?

- | Identify the range of potential risks associated with the relevant tour activities and tourist groups.
- | Ensure that customers have access to appropriate safety equipment.
- | Include information on required health and safety measures and skill and fitness levels in any pre-tour information kit.
- | Give preference to local and experienced guides, and when required, use certified guides.
- | Carry adequate first aid supplies and walkie-talkie radios (depending on the area), and train guides in first aid and search and rescue procedures.
- | Ensure vehicles and equipment are:
  - good quality;
  - maintained in good condition;
  - fitted with appropriate safety equipment;
  - operated appropriately, safely and at reasonable speeds; and
  - where possible, not used in congested conditions.

### GOOD PRACTICE IN ACTION

*Inside Out Experience* offers whitewater, rafting, hiking, mountain biking and horseback riding tours in the Canadian Rockies. The company emphasizes safety in all its tours. Guides always carry an easily accessible and well-stocked first aid kit and mobile phone, and are trained in river and wilderness first aid. For each tour, the guides ensure that all equipment is in good and safe working order and give visitors a safety talk prior to trip departure. After each trip is finished, guides complete a trip report that includes reports on any trip incidents, equipment to be repaired, management issues or recommendations, and weather conditions.



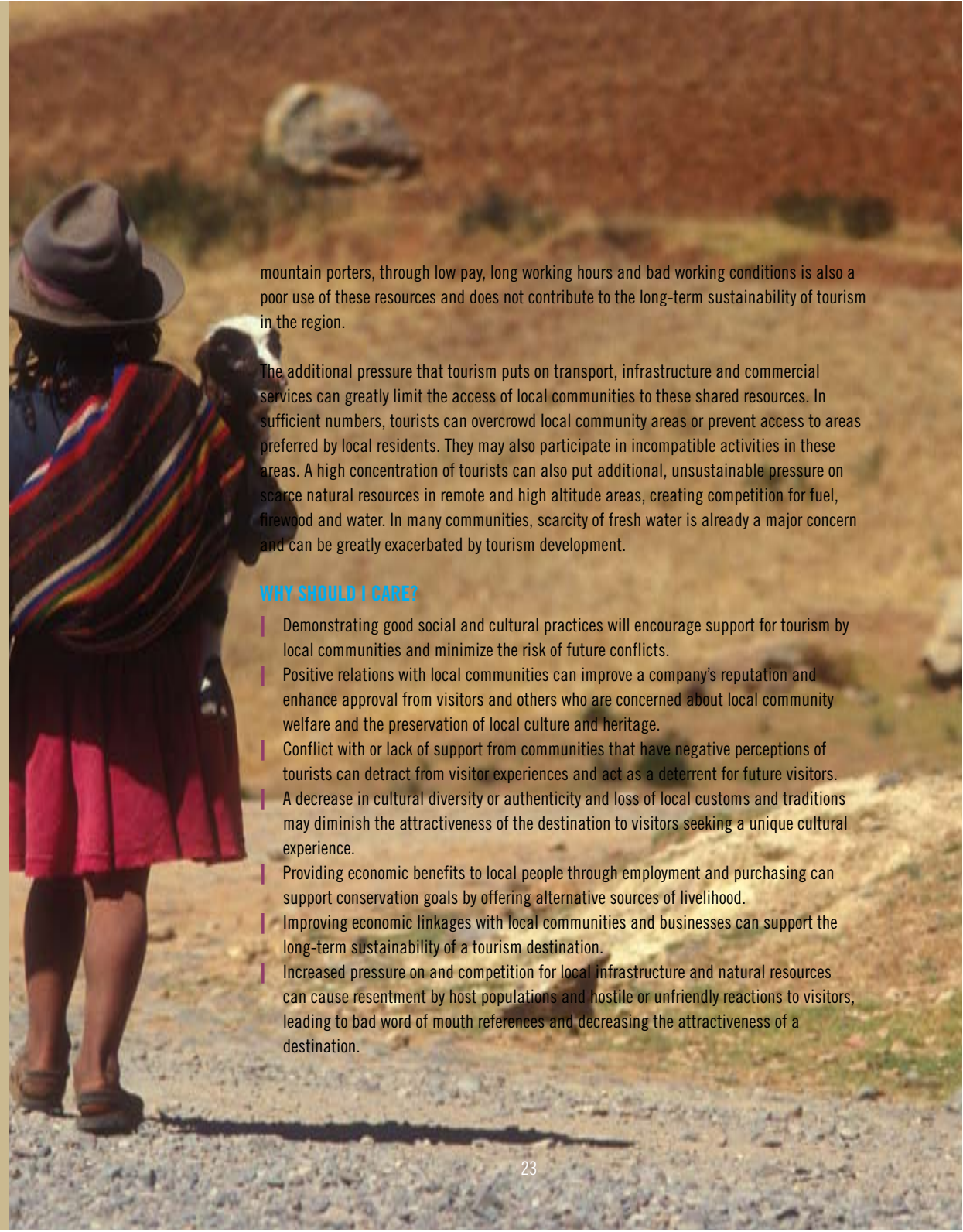
## INTERACTION WITH LOCAL COMMUNITIES

### WHAT IS THE ISSUE?

Many visitors are interested in interacting with local people, experiencing elements of local lifestyles, crafts, food and drink and visiting cultural and historical sites. Tour operators may consequently incorporate these elements as a minor or major component of their tour product. Direct interactions with local communities may occur through purchasing decisions and supplier choices, interactions with individuals or families, visits to local businesses, markets and exhibitions, use of local recreation areas or use of shared infrastructure such as transport, communications, entertainment and food services. Communities may also be indirectly affected by environmental damage that can degrade or restrict their access to natural resources, such as food and land, upon which they depend.

The level of cross-cultural awareness, understanding and respect between visitors and local people will influence the quality of the visitor experience and the level of community tolerance and support for tourism. If visitors use inappropriate language, handle cultural artifacts, or take photographs of people and private or sacred sites, it can create negative perceptions of visitors in local communities and lead to conflict, crime or an inhospitable atmosphere. Interactions between visitors and local people may also affect the ability of the local community to maintain its unique culture and lifestyle in the face of exposure to the alternative traits, customs and preferences of tourists. It may also lead to commercialization or modification of aspects of the culture, in an attempt to make a destination and services more appealing to visitors. However, it is the diversity, uniqueness and authenticity of a culture that may be the primary attraction for increasing numbers of discerning customers. This cultural diversity and authenticity also contributes to a destination's competitiveness by distinguishing it from other destinations.

The extent to which the economic benefits of tourism are channeled into local economies will directly affect the degree to which local communities benefit from tourism activities and their ability to maintain viable local businesses and contribute to the unique nature of a particular mountain destination. Tourism revenue can easily "leak" out of local economies, as the benefits from spending on imported goods, services and labor from outside the local destination often leave the local economy. Utilizing or recommending non-locally owned accommodation, transport and food outlets often does the same. The less revenue that stays within the local economy, the less income is available to channel toward local training, developing tourism infrastructure, conserving natural, cultural and historical sites, and marketing local destinations and businesses. The exploitation of local workers, such as



mountain porters, through low pay, long working hours and bad working conditions is also a poor use of these resources and does not contribute to the long-term sustainability of tourism in the region.

The additional pressure that tourism puts on transport, infrastructure and commercial services can greatly limit the access of local communities to these shared resources. In sufficient numbers, tourists can overcrowd local community areas or prevent access to areas preferred by local residents. They may also participate in incompatible activities in these areas. A high concentration of tourists can also put additional, unsustainable pressure on scarce natural resources in remote and high altitude areas, creating competition for fuel, firewood and water. In many communities, scarcity of fresh water is already a major concern and can be greatly exacerbated by tourism development.

### WHY SHOULD I CARE?

- | Demonstrating good social and cultural practices will encourage support for tourism by local communities and minimize the risk of future conflicts.
- | Positive relations with local communities can improve a company's reputation and enhance approval from visitors and others who are concerned about local community welfare and the preservation of local culture and heritage.
- | Conflict with or lack of support from communities that have negative perceptions of tourists can detract from visitor experiences and act as a deterrent for future visitors.
- | A decrease in cultural diversity or authenticity and loss of local customs and traditions may diminish the attractiveness of the destination to visitors seeking a unique cultural experience.
- | Providing economic benefits to local people through employment and purchasing can support conservation goals by offering alternative sources of livelihood.
- | Improving economic linkages with local communities and businesses can support the long-term sustainability of a tourism destination.
- | Increased pressure on and competition for local infrastructure and natural resources can cause resentment by host populations and hostile or unfriendly reactions to visitors, leading to bad word of mouth references and decreasing the attractiveness of a destination.

## WHAT CAN I DO?

- Consult with local communities to avoid sensitive sites and better share the existing infrastructure and resources.
  - Negotiate with cultural groups on appropriate access, behavior and interpretation regarding heritage, culture and people.
  - Avoid highly sensitive or private sites on the tour and seek local community endorsement in the selection of sites visited.
  - Keep visitors to defined areas and routes.
  - Use shared infrastructure and services in off-peak times.
- Provide visitors with information on local cultures, customs, traditions and values, and offer tips on how they can ensure that their own behavior respects the communities and people they may encounter.
- Use local suppliers and labor.
  - Employ local guides where possible.
  - Use local facilities and purchase local services.
  - Purchase, carry and supply locally grown food and beverages where possible.
  - Incorporate stops or stays with other local businesses as part of the tour experience, as a way to both improve the economic benefits to local people as well as add a valuable and unique element to a tour.
  - Offer sustainable locally made souvenirs for purchase if available.
  - Participate in work experience, mentoring and skills development programs that assist local people in developing tourism and guiding related skills.
  - Ensure that local companies pay fair wages to local workers.
- Become involved in community development.
  - Support community-based initiatives.
  - Work with non-profit groups on community development projects.
  - Consider offering discounts for local groups, residents, researchers and community development workers.
- Encourage visitors to:
  - Use local resources sparingly;
  - Be considerate when using shared infrastructure and services; and
  - Support locally owned businesses when purchasing accommodation, entertainment, transport, regional food and beverages, souvenirs and crafts.

## GOOD PRACTICE IN ACTION

*Amadiba Adventures*, which offers horseback riding and hiking tours along the Wild Coast of South Africa, employs local tour guides, caterers, cleaners and tent owners and sources horses from different villages, allowing revenue to be spread around the area.

A pioneer agrotourism project in Santa Catarina, in southern Brazil, has been created by the *Association Acolhida na Colonia* to encourage local farmers from the Serra Geral to receive tourists. Besides providing supplementary income to the small farmers that currently struggle to make a living off the land, the project offers tourists a unique cultural opportunity to experience these families' way of life. This new activity also involves farmers who were previously destroying the local forest to produce charcoal, helping to transform the local community into active conservationists as they see the benefits of preserving this fragile landscape.

In Nepal, *Atalante*, a French Tour operator, has been working to improve their porters' working conditions and knowledge on the local environment and society. Usually in Nepal, tour operators include allowances for food and clothing in porters' salaries. However, *Atalante* noticed that porters tended to use the money for other things, and, as a result, still suffered from poor nutrition and inadequate clothing during treks. To address this problem, the company has begun to supply porters with clothing, food and an extra large tent with floor mat during each tour. They also limit the load carried to 35 kg (77 pounds) per porter, and ensure that all employees receive fair wages.

*Handspan Adventure Travel*, a tour operator in Vietnam, has worked with local families to create local accommodation options for trekkers in the mountains of northern Vietnam. The company is also helping to raise funds to renovate and expand the school in Lao Chai village.

*Intrepid Travel* gives travelers the opportunity to make tax-deductible donations to its Intrepid Foundation, to support community development in the destinations they have visited. The Foundation supports development activities in healthcare, education, human rights and child welfare, as well as environmental and wildlife protection.

*World Expeditions* aims to ensure positive interactions between its clients and local communities. The company has created a 24-page Responsible Travel Guidebook, which is described as a "global blueprint" for responsible tourism operations and is distributed to all visitors on their tours.

## WILDLIFE INTERACTION

### WHAT IS THE ISSUE?

The health, breeding and feeding patterns, and overall populations of mountain wildlife species can be easily affected by human activities and presence. High levels of noise or bright lights, abrupt and fast movements, and concentrated numbers of visitors in close proximity to nests, breeding grounds and food sources can all disturb sensitive wildlife. Animals are also at risk of injury or death from collisions with vehicles, getting entangled in or ingesting trash such as cans and plastics, being exposed to disease, and having their nests, burrows or nesting materials trampled or removed. Improper or inappropriate handling of wildlife by visitors and feeding food not parts of their natural diet can also pose a threat. Different species have varying abilities to tolerate and recover from the range of visitor activities and behaviors. As a general rule, impacts will increase with larger numbers of visitors, more direct forms of contact, and with repeated use of the same viewing and interaction areas.

### WHY SHOULD I CARE?

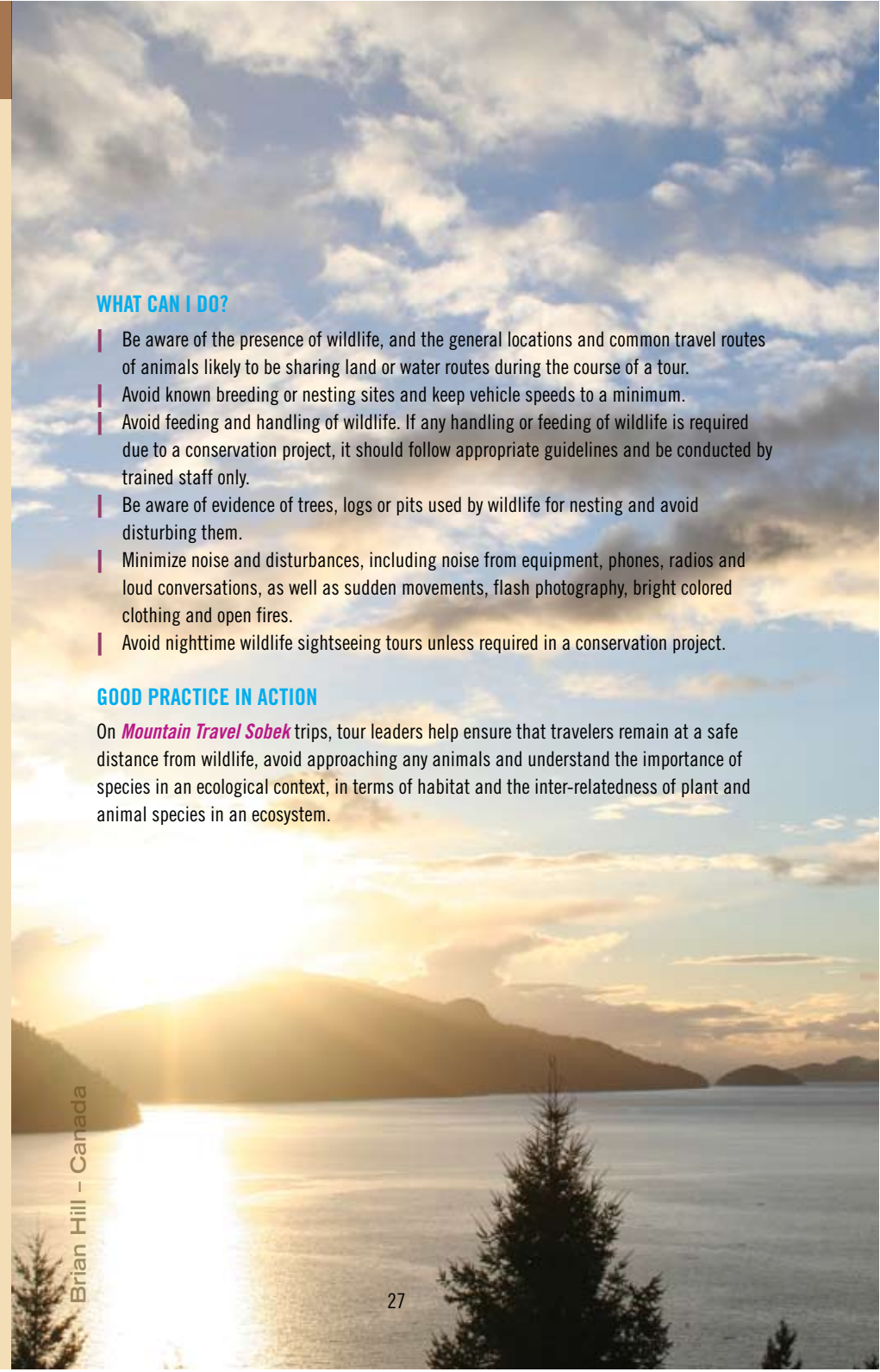
- | Local wildlife is a significant tourism attraction, and conserving the health, numbers, diversity and presence of wildlife in mountain areas can help maintain the unique value and appeal of tours in that area.
- | Wildlife relocation and changes to breeding, nesting and feeding patterns will reduce sightings for visitors.
- | Wildlife can become aggressive in their attempts to get food and become a danger to people.
- | If wild animals become tamer and dependent on humans, they will be less capable of self sufficiency when visitors are not around and thus more susceptible to illness and predation.
- | Visitors may be scratched, bitten or stung by wildlife, particularly when animals are improperly handled, feel threatened, or are protecting their young.
- | People may suffer allergic reactions, poisoning or infection by parasites or other diseases from touching or ingesting dangerous flora or fauna.

### WHAT CAN I DO?

- | Be aware of the presence of wildlife, and the general locations and common travel routes of animals likely to be sharing land or water routes during the course of a tour.
- | Avoid known breeding or nesting sites and keep vehicle speeds to a minimum.
- | Avoid feeding and handling of wildlife. If any handling or feeding of wildlife is required due to a conservation project, it should follow appropriate guidelines and be conducted by trained staff only.
- | Be aware of evidence of trees, logs or pits used by wildlife for nesting and avoid disturbing them.
- | Minimize noise and disturbances, including noise from equipment, phones, radios and loud conversations, as well as sudden movements, flash photography, bright colored clothing and open fires.
- | Avoid nighttime wildlife sightseeing tours unless required in a conservation project.

### GOOD PRACTICE IN ACTION

On *Mountain Travel Sobek* trips, tour leaders help ensure that travelers remain at a safe distance from wildlife, avoid approaching any animals and understand the importance of species in an ecological context, in terms of habitat and the inter-relatedness of plant and animal species in an ecosystem.





## RESOURCE CONSUMPTION, ENERGY USE AND TRANSPORT

### WHAT IS THE ISSUE?

Mountain tour operations can consume significant levels of natural resources and energy in the course of their activities, including wood for fires and construction, fish and animal stocks for fishing and hunting activities, water for cleaning, consumption and snow-making, and energy for transport, heating, lighting and lodging.

One of the most significant areas of impact involves the use of motorized transport such as snowmobiles, scooters, motorbikes, quadbikes, cars, buses, four-wheel drives, helicopters and boats. These vehicles may be used to transport visitors, equipment and supplies from a pick-up point to various destinations and back, or to navigate difficult terrains over long distances. Vehicles such as river cruise boats or helicopters may function as viewing platforms for the majority or part of a tour, while other means of transport, such as motorbikes, scooters or quadbikes, may be an integral part of a particular adventure activity. Particularly in tourism areas where traffic is highly concentrated and often congested, vehicle use can have a range of negative impacts, including air pollution from vehicle and vessel exhaust fumes, and increased noise levels.

### WHY SHOULD I CARE?

- | A scarcity of natural resources such as wood, food, water or energy in remote and high altitude areas means that a concentration of tourists can create competition between tourists and local communities for shared environmental resources, thus increasing potential points of conflict with local people.
- | High levels of air pollution can detract from the clean mountain air and lead to a concentration of acid rain, thus degrading the value of the destination to visitors.
- | Emissions from motor vehicles and use of fossil fuels for other energy needs can also contribute to global climate change, which is an important concern for snow-dependent mountain-based tourism activities.
- | Increasing fuel efficiency will not only maintain the clean mountain air, but will also save money on fuel costs.
- | Noise from recreational vehicles and motorized transport can disturb local communities and can detract from the “natural” mountain experience for many visitors.
- | High noise levels can scare wildlife, leading them to alter breeding and feeding behaviors and relocate to quieter areas, thus diminishing the opportunities for visitors to see and experience local wildlife.

- | Constant use of motorized transport in the same area can degrade and destroy vegetation, causing soil compaction and topsoil loss. Deep channels in snow and non-snow covered landscapes from vehicles can alter watercourses and increase erosion, reducing the attractiveness of the landscape and thus the destination to tourists.
- | Concentrated or intense use of motorized recreational vehicles can also increase the risk of injury and collisions with wildlife and other visitors.

### WHAT CAN I DO?

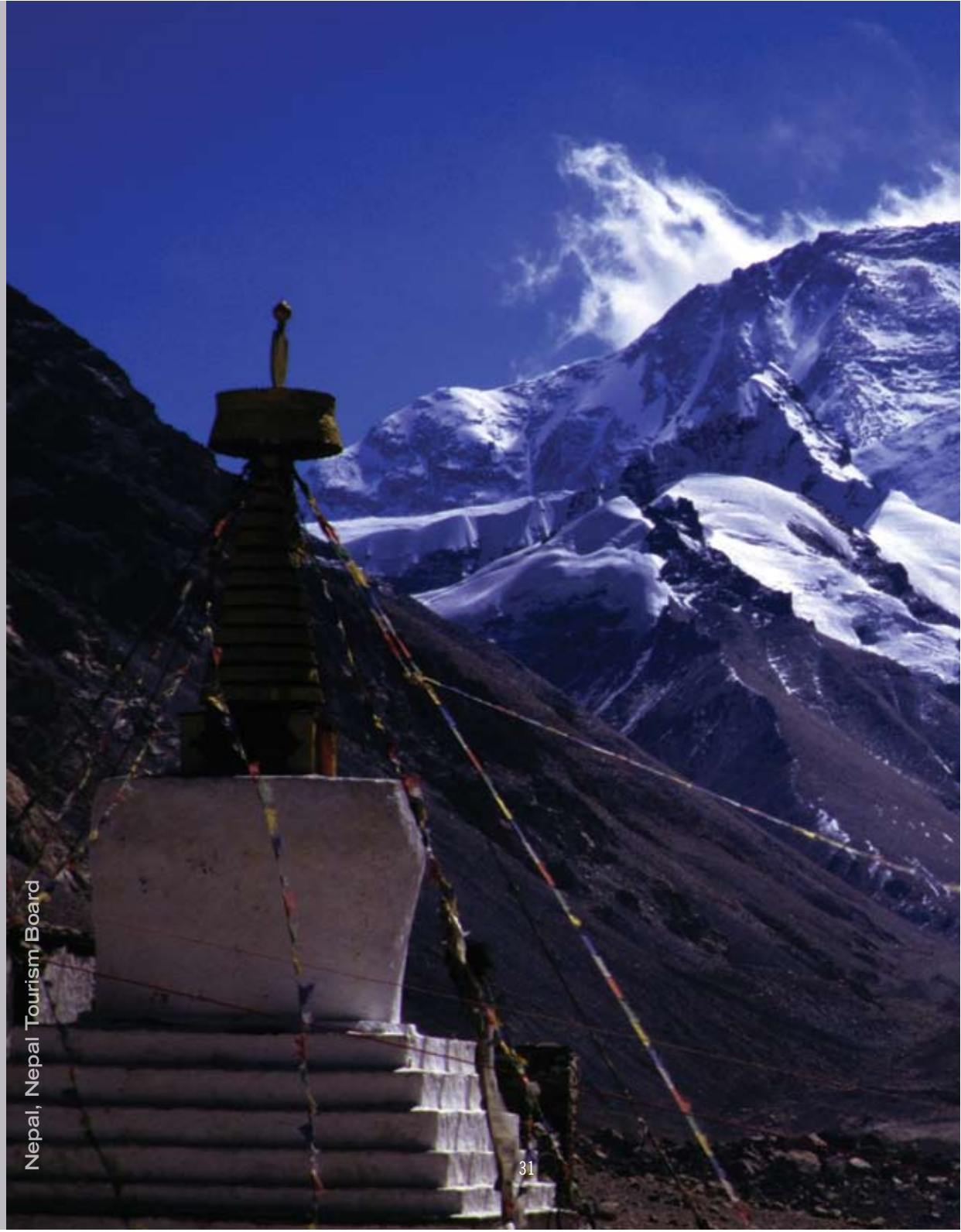
- | Use resources sustainably, to maintain the well being of both ecosystems and human communities.
  - Consume stocks of renewable resources, such as wood, fish and animals, more sustainably and efficiently.
  - Treat wastewater to high standards where possible.
  - Use recycled water where appropriate, such as in snow-making machines.
  - Avoid pollution of water resources and use fresh water sparingly.
- | Increase energy efficiency.
  - Use energy-efficient lighting and equipment where available.
  - Use batteries and fuel stoves where possible.
  - Use renewable sources of energy where possible and use non-renewable fuels efficiently.
  - Participate in and/or promote carbon offset schemes.
- | Minimize the use of motorized transport in and around mountain areas.
  - Wherever possible, use local non-motorized means of transport, such as mules and horses, and avoid developing tours that are overly dependent on motorized transportation and activities.
  - Share vehicles and transportation infrastructure with other tour operators or service providers where possible.
  - Choose routes and time schedules that minimize congestion and distance traveled.
  - Avoid the use of vehicles with a larger seating or engine capacity than is required for the tour.



- | Use vehicles that minimize fuel consumption or use renewable energy.
  - For motorized watercraft, diesel, four-stroke or electric engines are the most energy efficient.
  - For land vehicles, use two-wheel drives instead of four-wheel drives where possible.
  - Perform regular maintenance on vessels and vehicles to ensure they are running efficiently.
- | Avoid skidding or rough riding/driving where possible, to minimize direct impacts on vegetation.

### GOOD PRACTICE IN ACTION

The members of the French tour operators association *ATR* (To Act for Responsible Tourism) have prepared “destination cards” setting out standard guidelines for the consumption of natural resources in each destination that their tours visit. Some examples of these guidelines include avoiding wood consumption in areas where deforestation is severe, being aware of key fire hazards in certain areas, and prohibiting the disposal of human waste in water that is used by local populations downstream.





## WASTE GENERATION AND DISPOSAL

### WHAT IS THE ISSUE?

Concentrated visitor activity in mountain areas generates significant amounts of both solid waste and wastewater, which can pollute water and soil through improper storage and disposal. Solid waste can build up from food and beverage consumption and the disposal of used packaging, supplies and equipment. Certain types of waste, including pharmaceuticals, personal products and cleaning products may contain dangerous chemicals that can harm local ecosystems, wildlife or people. Accidental or poorly managed discharges of oils and fuels from vehicles, vessels or equipment can be a significant source of water or soil pollution. Wastewater and sewage from facilities, water craft and animals, such as sled dogs and horses, can also easily pollute freshwater resources, particularly since human and other wastes and chemicals break down more slowly in alpine areas.

### WHY SHOULD I CARE?

- | Clean and free-flowing rivers, creeks and waterholes are critical in supporting wildlife, vegetation and mountain and lowland communities, all of which attract visitors to a particular area or tour.
- | Trash decreases the attractiveness of an area and can injure wildlife that eat or become entrapped by it.
- | Waste adds pathogens to soil and water, which can then become unsuitable for human use and for sustaining fish and animal populations.
- | The health of particularly unique and sensitive ecosystems, such as those in caves, can easily be threatened by the introduction of waste and trash.

### WHAT CAN I DO?

- | Adopt a policy of carrying out all trash and waste wherever possible.
- | Minimize trash generation.
  - Avoid over-packaged goods and disposable items.
  - Purchase in bulk and use recyclable and refillable containers where possible.
- | Keep waste and chemicals away from natural water bodies.
  - Avoid the use of cleaning products, soaps, detergents and toothpaste near or in fresh water.
- | Be careful with the disposal of human waste.
  - Use permanent toilets or portable chemical toilets where possible.
  - If toilets are unavailable, bury human waste at least 15cm deep and 100m from water sources or campsites.

### GOOD PRACTICE IN ACTION

The members of the French tour operators association *ATR* (To Act for Responsible Tourism) studied the waste processing systems in various mountain destinations, including Nepal, Morocco, Peru and India, in order to improve waste collection and disposal. Their study concluded that it wasn't enough for tour operators to ensure that no waste is left behind in a destination, but that the companies also need to deposit that waste in locations where it can be treated at the highest standards available.

Located in the remote village of Chugchilán in the Ecuadorian Andes, the *Black Sheep Inn*, implements an ambitious zero-waste waste generation and disposal plan by adhering to the three R's (reduce, reuse, recycle). The Inn is also a pioneer in the field of eco-architecture by recycling its wine and liquor bottles into the construction of "bottle walls" for the hotel's bathroom and sauna facilities. Dry composting toilets produce zero black water or sewage, and all gray water from showers, sinks and laundry is treated and recycled to be used for animals and the Inn's organic garden.

The *Great Canadian Railtour Company* (GCRC), which operates tours through the Canadian Rockies, has implemented several strategies to reduce waste generation and prevent the disposal of human waste in natural mountain areas. Measures include replacing disposable plastic cutlery with reusable silverware and using recycled materials where possible. In addition, all GCRC trains contain 100 percent of human waste in retention tanks, until it can be properly treated and disposed.



## CONTRIBUTION TO BIODIVERSITY AND NATURE CONSERVATION

### WHAT IS THE ISSUE?

While many of the good environmental practices for promoting sustainable mountain tourism involve avoiding or minimizing negative impacts to ecosystems, tour operators can also go beyond simply reducing negative impacts and seek opportunities to benefit biodiversity and nature conservation efforts by contributing to improving the state of the environment at a local, regional or national level. Such actions can be particularly important in countries or regions where capacity and resources for environmental conservation may be limited.

### WHY SHOULD I CARE?

- | A healthy environment is the basis for most mountain-based tourism activities. Contributions to conservation can help to sustain healthy mountain ecosystems and thus maintain the viability of future tourism in an area.
- | Support for conservation can minimize the risks of future environmental problems and preserve the quality of mountain destinations.
- | Contributions to conservation can enhance a company's reputation among travelers who are concerned about global and local biodiversity loss and environmental damage, and thus increase its attractiveness as a tour operator of choice for these people.
- | Promoting responsible ways to enjoy the environmental resources in a destination will improve the overall visitor experience.
- | Supporting conservation efforts can generate positive publicity and improve a company's reputation and relationships with local people and organizations, decreasing the chance of conflict with local communities and increasing their support for tourism activities.
- | Winning environmental awards for successful conservation programs and practices can lead to positive publicity.

### WHAT CAN I DO?

- | Work in partnership with the local authorities, tourism board and community groups in the development of sustainable tourism policies and strategies.
- | Partner with local or national conservation groups to promote conservation.
- | Participate in environmental and visitor monitoring programs to manage impacts in visitation zones, per limits of acceptable change (LAC) methodology when necessary or on specific frequency relative to the level of impact. Rotate visitation away from these zones to allow for recovery and maintenance of natural dynamics.

- | Participate in or contribute to feral animal and weed management activities, as well as programs to control the introduction and limit the spread of invasive non-native species.
- | Provide physical or financial support to local conservation efforts, including rehabilitation activities and research.
- | Sponsor or participate in environmental education efforts in local communities.
- | Assist with construction or maintenance of site-hardening infrastructure, such as paving, pathways and boardwalks.
- | Encourage visitors and guides to become involved in conservation activities by incorporating them directly into a tour. Visitors and guides can contribute to:
  - Rehabilitation and re-vegetation of tour areas and sites;
  - Invasive flora removal;
  - Monitoring of erosion and degradation of sites and routes used at consistent and regular intervals;
  - Monitoring of native and feral animal sightings or evidence of their presence (e.g. droppings, footprints or digging);
  - Monitoring or maintenance of the condition of tracks and campsites (for example, noting the percentage of vegetation cover, the extent of erosion and specific flora cover, evidence of campfires in non-designated areas and illegal use of timber for firewood); and
  - Trash collection and removal.

### GOOD PRACTICE IN ACTION

Established in 1986, the *Annapurna Conservation Area Project* (ACAP) is the first and largest conservation area initiative in Nepal. ACAP is a non-profit organization that is supported and sustained by various trusts and the fees collected from the 25,000 tourists who trek in the 7,629-km<sup>2</sup> area each year. The money is used to protect the natural and cultural heritage of the area and to sustain the local economic and social benefits of tourism through conservation activities, community development, tourism management, education and extension initiatives.

*Geographic Expeditions* gives 10 percent of its net profits to environmental, cultural and outdoor education organizations. The company also includes information in travelers' post-trip packets on organizations from the destinations they have just visited that have produced good results in the field, so that they can make their own contributions to local conservation efforts after they return home.



## CLIMATE CHANGE AND MOUNTAINS

### WHAT IS THE ISSUE?

Mountain environments are very vulnerable to the effects of global climate change, which is speeding up glacier melting, changing cloud forests, affecting the breeding success of alpine animals, causing tree lines to advance upslope and decreasing summer water flows from glacier-fed rivers.

The effects of climate change are magnified in alpine areas: when ice and snow melt in higher temperatures, the exposed bare ground absorbs heat from the sun and melts even more of the surrounding ice and snow. This “positive feedback” results in accelerating rates of melting and is causing mountain environments to transform rapidly as a result of seemingly small changes in global temperature.

Throughout the world, glaciologists are observing dramatic rates of glacial melting. In Peru, researchers recently observed that glaciers retreated 32 times faster between 1998 and 2000 than during the 20 years from 1963 to 1983. In Switzerland, experts predict that there will be no more glaciers by 2050. In Nepal, the glacier that Sir Edmund Hillary and Tenzing Norgay camped on for their first ascent of Mt. Everest has retreated five kilometers upslope. Worldwide, melting rates have doubled since the 1980s.

### WHY SHOULD I CARE?

- | Shrinking glaciers will affect the global supply of fresh water. More than half of the world's population relies on fresh water from mountain regions.
- | Snowlines are rising (globally, the permanent, late summer snowline has risen about 200 meters since the early 1960s) and winters are getting shorter, which may cause significant problems for low-elevation ski resorts. A recent study in the Alps showed that reduced levels of snow and shortened snow seasons, particularly at areas of lower altitude in Germany, Austria and Switzerland, is starting to negatively affect the economies of snow resorts.
- | Melting alpine permafrost has been linked with rockfall, such as the extraordinary events on portions of famous climbing routes in the Alps in the summer of 2003.

### WHAT CAN I DO?

- | Offset the carbon costs of your tours.
- | Support mountain monitoring and research programs.
- | Support national, regional and local policies and strategies to limit carbon emissions.
- | Take practical steps to reduce the carbon emissions of your activities, including reducing energy consumption and the use of fossil fuels, as detailed in the section on Resource Consumption, Energy Use and Transport.
- | Educate visitors about the effects of climate change on mountains and snow-based recreational activities. Offer suggestions for how they can reduce greenhouse gas emissions by, for example, using low-polluting vehicles, removing ski racks and replacing snow tires with normal tires at the end of the season, and carpooling or taking shuttles to recreational sites.
- | Support the creation of new protected areas and the improvement of conservation strategies and policies to combat the effects of climate change.

### GOOD PRACTICE IN ACTION

**Aspen Skiing Company**, which operators ski mountains and hotels in Colorado, USA, offsets 100 percent of its electricity use with renewable energy certificates. By making the largest purchase of wind energy certificates in the history of the U.S. ski industry, the company has taken a major stand on global warming while educating its employees and guests on the urgent need to address climate change.

### NATURE WALKS, HIKING AND CAMPING

#### WHAT IS THE ISSUE?

Even seemingly low-impact mountain-based activities, such as walking, hiking and camping, can have a significant affect on ecosystems and species if not properly managed and monitored. Visitors walking and hiking in the mountains may encounter several habitat types and species in a single trip, because of the wide range of relatively small ecosystems that result from rapid shifts in altitude, climate and soil in these areas. In general, impacts will increase with larger numbers of visitors and with repeated use of the same areas and routes. However, even small visitor groups can cause significant damage to these ecosystems, which may be home to small numbers of often unique species.

The impacts of hiking, nature walks and camping in mountain areas can include soil erosion and compaction from constant pedestrian traffic, storage of equipment and the erection of tents and fireplaces. Erosion and compaction affect the ability of native vegetation to regenerate and cause water to run off, rather than sink in. Run off can carry away nutrient-filled topsoil and result in sedimentation of local waterways, decreasing water quality. Habitat clearing and plant removal can also result from firewood collection, campsite clearing, visitors collecting flowers and fruit or taking souvenirs, and clearing new tracks. Wildfires from campfires and smoking can threaten wildlife, habitat and local communities. The introduction of exotic and invasive species and diseases from seeds and spores carried in on equipment, footwear and clothing can also easily disrupt the natural food chain and threaten the survival of local species. In extreme cases, avalanches and landslides can be caused by inappropriate visitor behavior, posing risks of death or injury and threatening access to mountain areas for visitors and local communities.

#### WHY SHOULD I CARE?

- | Wildlife may relocate away from camping areas or heavily traveled walking trails to less disturbed habitats, reducing sightings for visitors. Animals can also become aggressive in their attempts to get food and become a danger to visitors.
- | Removal of or damage to scarce vegetation can inhibit growth and reproduction of local flora. Land clearing can also eliminate habitat and food sources for native wildlife, leading to species loss and diminishing the richness of the natural environment that attracted visitors in the first place.
- | Polluted and eroded environments can further reduce the diversity of local wildlife, habitat and landscapes, and make the destination less attractive to visitors seeking nature-based experiences.



#### WHAT CAN I DO?

- | Learn more about sensitive sites and species in the local area by talking to local area managers, conservation groups, researchers or other professionals.
  - Based on this information, small changes in tour routes, how often they are used, the duration of activities or the key natural sites visited could help to avoid irreversible damage and allow natural areas to regenerate after use.
- | Keep the number of customers per guide to 15 or below, to provide a better experience for visitors, decrease impacts and make groups more manageable.
- | Use established tracks and sites wherever possible when choosing routes and campsites.
  - Avoid clearing new areas or tracks to help minimize erosion, habitat clearing and trampling on vegetation.
  - Where there are a few key routes and sites, rotate the ones used to allow areas to recover and not put too much pressure on any one area. This can be particularly important where there are no sealed or graveled tracks or boardwalks.
- | When choosing routes and campsites, avoid highly sensitive sites such as breeding grounds (which may be seasonal) and areas where vulnerable or sensitive species exist.
- | Avoid camping less than 30 meters (98 feet) from water bodies and 100 meters (328 feet) from cave entrances.
- | Clean all equipment and boots before entering mountain areas to avoid chemicals entering waterways and exotic seeds and diseases entering the local ecosystems.
- | Rotate camping sites to help avoid irreversible damage and allow natural areas to regenerate after use.
- | Avoid open fires to reduce accidental fires and scarring of the landscape in dry areas. In snow-covered areas, this can also help protect sensitive vegetation beneath the snow.
- | Remove all artificial structures after use. In snow-covered areas in particular, it is important to remove kitchens, shelters and other constructions after use as they are visually unattractive and create artificial wind and water breaks.

#### GOOD PRACTICE IN ACTION

*Mountain Travel Sobek* limits the number of clients on each of its trips, to minimize impacts on the environment. The company's guidelines for camping include staying at least 50 yards from fresh water sources, avoiding very wet or dry soils that can be easily damaged, moving campsites frequently to minimize long-term impact, keeping noise to a minimum, and choosing safe campfire sites.



## LAND-BASED ADVENTURE ACTIVITIES

### WHAT IS THE ISSUE?

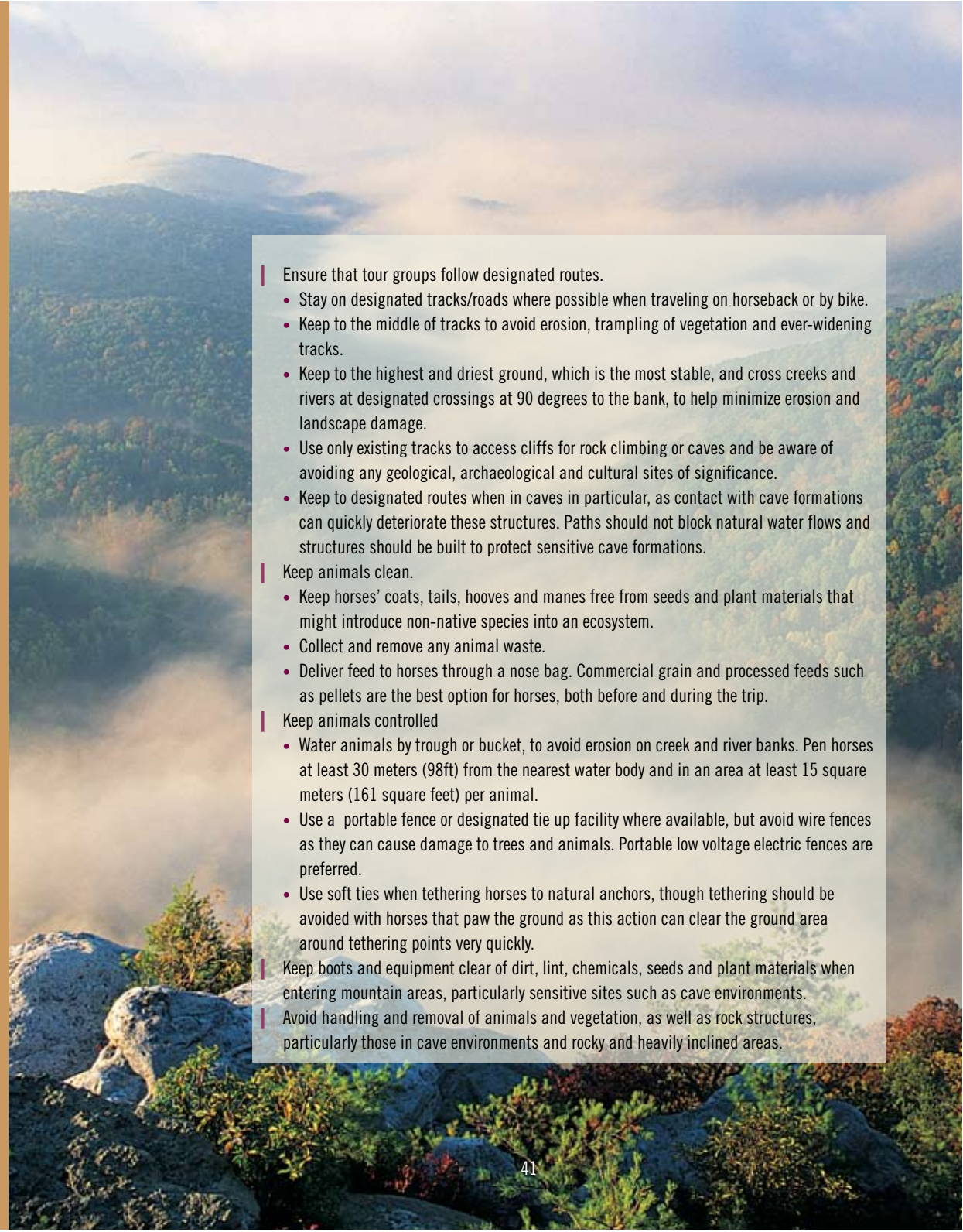
Land-based adventure activities that may form part of mountain tours include cycling, mountain biking, horseback riding, canyoneering and, less often, rock climbing, ice climbing, hang gliding and caving. The environmental impacts of these adventure activities can be more severe than those from hiking and walking, because of the repeated and heavy use of equipment on the sensitive mountain landscape. Wheels, hooves, ropes and hooks can all cause significant damage to the landscapes, creek beds, vegetation, rock and cave formations in which they are used. If not properly managed, land-based activities can lead to soil erosion and poor soil quality, vegetation clearing, habitat loss, disturbance to wildlife and humans, pollution, and the loss of diverse landscapes and scenery. The introduction of non-native species through horses or improperly cleaned equipment can also threaten local plant and animal populations. Caves are particularly sensitive to changes in temperature, humidity and light, as well as the acidity of human skin. In any activity, these impacts can be magnified if the equipment is of a poor standard, or is used incorrectly or inappropriately.

### WHY SHOULD I CARE?

- | Following good practices in conducting and managing adventure activities will help conserve the quality of the unique landscapes, caves and rock face environments that attract both visitors interested in adventure activities as well as those interested in simply experiencing a diversity of natural environments.
- | Ensuring sustainable use of these areas over the long term will help support current and future operators in developing and diversifying tour products and packages.

### WHAT CAN I DO?

- | Understand the relationship between the potential impacts of particular activities and the resilience and ability of sites to regenerate under the pressure of adventure activities.
- | Select and rotate tour routes and sites where adventure activities take place to avoid sensitive sites and minimize the intensity and impacts of use.



- | Ensure that tour groups follow designated routes.
  - Stay on designated tracks/roads where possible when traveling on horseback or by bike.
  - Keep to the middle of tracks to avoid erosion, trampling of vegetation and ever-widening tracks.
  - Keep to the highest and driest ground, which is the most stable, and cross creeks and rivers at designated crossings at 90 degrees to the bank, to help minimize erosion and landscape damage.
  - Use only existing tracks to access cliffs for rock climbing or caves and be aware of avoiding any geological, archaeological and cultural sites of significance.
  - Keep to designated routes when in caves in particular, as contact with cave formations can quickly deteriorate these structures. Paths should not block natural water flows and structures should be built to protect sensitive cave formations.
- | Keep animals clean.
  - Keep horses' coats, tails, hooves and manes free from seeds and plant materials that might introduce non-native species into an ecosystem.
  - Collect and remove any animal waste.
  - Deliver feed to horses through a nose bag. Commercial grain and processed feeds such as pellets are the best option for horses, both before and during the trip.
- | Keep animals controlled
  - Water animals by trough or bucket, to avoid erosion on creek and river banks. Pen horses at least 30 meters (98ft) from the nearest water body and in an area at least 15 square meters (161 square feet) per animal.
  - Use a portable fence or designated tie up facility where available, but avoid wire fences as they can cause damage to trees and animals. Portable low voltage electric fences are preferred.
  - Use soft ties when tethering horses to natural anchors, though tethering should be avoided with horses that paw the ground as this action can clear the ground area around tethering points very quickly.
- | Keep boots and equipment clear of dirt, lint, chemicals, seeds and plant materials when entering mountain areas, particularly sensitive sites such as cave environments.
- | Avoid handling and removal of animals and vegetation, as well as rock structures, particularly those in cave environments and rocky and heavily inclined areas.

- | Avoid intensive or constant use of particular areas
  - When rock climbing, rotate the use of areas and keep group numbers small, as repeated or intensive use of the same areas can remove mosses and other life on rock face areas.
  - Follow these same guidelines for ice climbing, as ice faces are also subject to deterioration and instability with repeated and sustained use.
- | Use appropriate standards of equipment in a correct manner, to minimize and avoid damage to natural landscapes and features.
  - Minimize the use of chalk when rock climbing, as this can detract from the natural appearance and attractiveness of rock faces.
  - Avoid excessive use of fixed equipment and bolts (particularly galvanized) on all climbing areas, as these can chip and wear away at rock and ice formations.
  - When caving, use soft materials to cushion ropes and natural anchors, and avoid bolts and overuse of cave marking materials and lights.
  - Avoid strong lighting in caves, as it encourages algae and other foreign species into the sensitive ecosystems and can be injurious to cave dwelling animals. Use battery-operated lights where possible.
- | Support the development of appropriate site infrastructure and site hardening to enhance the long-term viability of adventure activities in a destination.
- | When hang gliding, avoid areas that are important feeding or breeding areas for sensitive species, so that animals do not relocate from open areas to forested or more protected areas.

### GOOD PRACTICE IN ACTION

**Geographic Expeditions** requires that all guides and participants on their climbing trips utilize clean climbing techniques, carefully check the safety of anchors, avoid damaging trees that may be used as anchors, and remove all hardware and webbing from public areas after use.





## FRESHWATER-BASED RECREATIONAL ACTIVITIES

### WHAT IS THE ISSUE?

Healthy freshwater systems are extremely important for the conservation and health of mountains, as well as for mountain and lowland communities who depend on this resource. Mountain tours may include river tours, canoeing, sailing, windsurfing, kite surfing, kayaking, rafting and freshwater fishing. While these activities can provide visitors with a way to experience the beauty and uniqueness of mountain freshwater ecosystems, when not properly managed, they can threaten the very environment that attracted these visitors in the first place.

The use of motorized and non-motorized watercraft in freshwater bodies can lead to erosion and vegetation clearing along riverbanks, from the repeated transport, dragging and launching of watercraft and equipment. Trees can become damaged from constant use as anchors, and river beds, rock formations and water-based vegetation and habitats can also be damaged from anchors, paddles and collisions. Wildlife are also at risk from collisions with watercraft, and may become entangled in or injured by litter, discarded fishing equipment and tackle. Increases in turbidity from constant paddling or propellers can also be a hazard to wildlife, while noise from motorized water craft can disrupt feeding, breeding and nesting patterns.

Chemicals used for cleaning or equipment maintenance, oil and fuel spills, and discharge of wastewater and sewage can pollute the water, making it unsuitable for human use and for sustaining fish and animal populations. Unmanaged fishing can lead to declining native fish stocks, resulting in poor fishing experiences for local and visitor populations. The introduction of exotic diseases or species, such as non-native fish, can lead to competition with and predation on local species.

### WHY SHOULD I CARE?

- | Mountain water bodies are the source of clean water for many communities, and maintaining the quality of this water supply may prevent future conflict with local communities and increase their support for tourism.
- | Pristine freshwater bodies are important for protecting fish and other water-dwelling animals, and as a clean water source for all local wildlife. Threatening the health of wildlife habitat may decrease local populations, reducing wildlife sightings for visitors.
- | Clean environments, healthy vegetated landscapes, plentiful fish stocks and the presence of unique and native wildlife all add to the value of the mountain experience for visitors.
- | Overfishing by both commercial and sport fishing operations may lower local fish populations, removing key species from the food chain and causing significant changes



throughout the ecosystem. The viability of any fishing-based tourism activities depends on a healthy and stable fish population in freshwater bodies.

### WHAT CAN I DO?

- | Identify sensitive sites such as breeding or nesting grounds in rivers and creeks and along banks. Avoid these areas when porting, launching, anchoring or mooring watercraft and when choosing sites to come ashore.
- | Encourage sustainable fishing practices.
  - Be aware of and follow any regulations on maximum fish catch and minimum size regulations, as well as seasonal closures or zoning restrictions.
  - Use appropriate tackle and native bait, and limit catch sizes to immediate need.
  - Know which species are threatened or endangered in a certain region, display this information for visitors and do not catch these species.
- | Use mooring buoys.
  - If anchoring is absolutely necessary, make sure the boat is anchored in a designated area, away from important ecosystems and where it will not be dragged near these areas and accidentally cause damage.
  - Use soft wraps when tying to trees, and correctly use or install mooring rings or pylons wherever possible.
  - Avoid damage to vegetation and banks when unloading, launching and coming ashore.
- | Keep watercraft and equipment clean of dirt, seeds, moss and algae to help prevent water pollution and contamination with non-native species or diseases. Clean and maintain watercraft away from water bodies and with a minimum use of chemicals.
- | Avoid disposing of wastewater, sewage, trash, fishing line and tackle into fresh water.
- | Keep the number of non-motorized watercraft to eight or less and the number of customers per guide to 15 or less, to limit the intensity of impacts and make it easier to monitor and manage visitor activities.

### GOOD PRACTICE IN ACTION

On *Mountain Travel Sobek* Alaska rafting trips, guests are given an orientation at the start of the trip about where and how to dispose of any garbage. The company uses a “six-garbage system” that divides waste into categories (organic, metals, glass, plastic, burnable paper and human waste) and provides detailed guidelines on how to deal with each type.





## SNOW-DEPENDENT RECREATIONAL ACTIVITIES

### WHAT IS THE ISSUE?

Snow-dependent recreational activities include cross-country, downhill and glacier skiing, heli-skiing, snow scootering, snowboarding, tobogganing, snowshoe walking and sledding. The mountain areas that support these activities often contain the most fragile ecosystems, with many unique species requiring specific environmental conditions and relying on sparse habitat and food sources. Even small changes in landscape contours, vegetation coverage and distribution, natural water flows, or soil, air and water quality can have significant effects on habitat, wildlife and species diversity.

In the highest mountain ecosystems, snow cover protects the vegetation below it to some extent. However, repeated, harsh or intensive use of the same areas or areas with minimal snow cover can easily damage the sensitive vegetation beneath, inhibiting growth and recovery in already short growing seasons. Such areas are also vulnerable to soil compaction, which makes surfaces more impermeable and creates greater surface water runoff, leading to erosion and inhibiting vegetation growth. Watercourses may be modified through the creation of channels from repeated sledding, skiing and use of snow transport vehicles and the development of artificial slopes. Excessive water use for snow making machines can also alter natural water flows.

Heavy use can reduce habitat and food sources for local fauna, and cause wildlife to relocate. Animals are also likely to relocate away from areas adjacent to snow-based activities, as they are loud, abrupt and involve fast movements. Species may also be affected by predation or competition through the introduction of exotic flora or fauna species carried on equipment, clothing, transport vehicles or sled animals.

Poorly positioned artificially created slopes (for downhill skiing in particular) and associated infrastructure often involve the clearing of large areas of already sparsely distributed vegetation. Many alpine ecosystems are small and concentrated in particular geographic areas, and this clearing can easily lead to significant reductions in biodiversity and habitat, as well as remove natural barriers and protection from avalanches. Land-clearing for associated tourism infrastructure such as lodges, accommodation, restaurants and entertainment also contributes to the problem.

### WHY SHOULD I CARE?

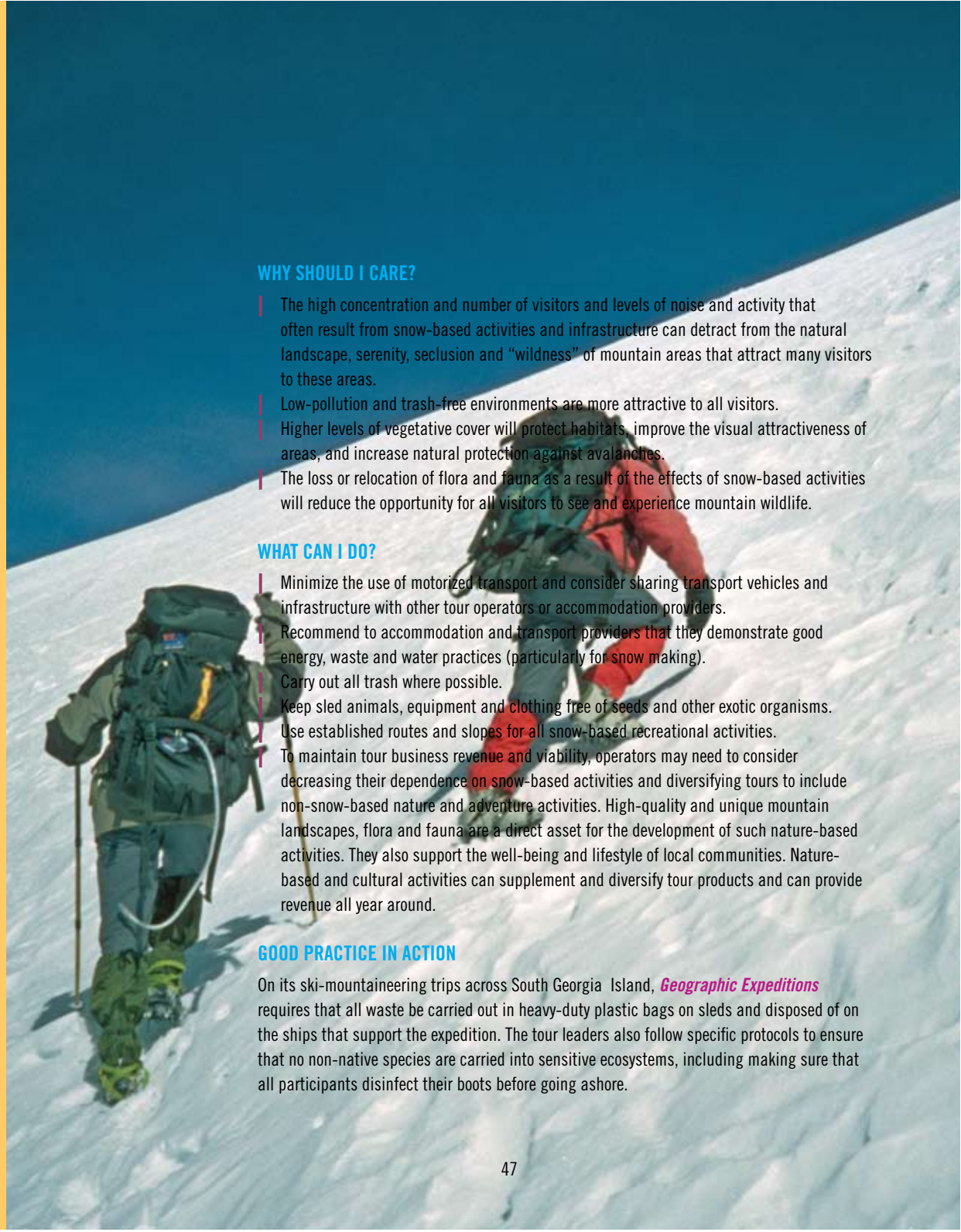
- | The high concentration and number of visitors and levels of noise and activity that often result from snow-based activities and infrastructure can detract from the natural landscape, serenity, seclusion and “wildness” of mountain areas that attract many visitors to these areas.
- | Low-pollution and trash-free environments are more attractive to all visitors.
- | Higher levels of vegetative cover will protect habitats, improve the visual attractiveness of areas, and increase natural protection against avalanches.
- | The loss or relocation of flora and fauna as a result of the effects of snow-based activities will reduce the opportunity for all visitors to see and experience mountain wildlife.

### WHAT CAN I DO?

- | Minimize the use of motorized transport and consider sharing transport vehicles and infrastructure with other tour operators or accommodation providers.
- | Recommend to accommodation and transport providers that they demonstrate good energy, waste and water practices (particularly for snow making).
- | Carry out all trash where possible.
- | Keep sled animals, equipment and clothing free of seeds and other exotic organisms.
- | Use established routes and slopes for all snow-based recreational activities.
- | To maintain tour business revenue and viability, operators may need to consider decreasing their dependence on snow-based activities and diversifying tours to include non-snow-based nature and adventure activities. High-quality and unique mountain landscapes, flora and fauna are a direct asset for the development of such nature-based activities. They also support the well-being and lifestyle of local communities. Nature-based and cultural activities can supplement and diversify tour products and can provide revenue all year around.

### GOOD PRACTICE IN ACTION

On its ski-mountaineering trips across South Georgia Island, *Geographic Expeditions* requires that all waste be carried out in heavy-duty plastic bags on sleds and disposed of on the ships that support the expedition. The tour leaders also follow specific protocols to ensure that no non-native species are carried into sensitive ecosystems, including making sure that all participants disinfect their boots before going ashore.





## SOURCES OF FURTHER INFORMATION

### CODES OF CONDUCT FOR RECREATION ACTIVITIES

AUSTRALIAN GOVERNMENT DEPARTMENT OF ENVIRONMENT AND HERITAGE:

Australian Alps codes of conduct brochures  
<http://www.australianalps.deh.gov.au/publications/codes/index.html>

CENTER FOR OUTDOOR ETHICS:

Leave No Trace Program  
<http://www.lnt.org>

GRIFFITH UNIVERSITY (AUSTRALIA), INTERNATIONAL CENTRE FOR ECOTOURISM:

Green Guide for 4WD Tours  
<http://www.gu.edu.au/centre/icer/greenguides/gg4WD.PDF>

GRIFFITH UNIVERSITY (AUSTRALIA), INTERNATIONAL CENTRE FOR ECOTOURISM:

Green Guide to White Water (for whitewater raft and kayak tours)  
<http://www.gu.edu.au/centre/icer/greenguides/ggwhitewater.pdf>

THE INTERNATIONAL MOUNTAINEERING AND CLIMBING FEDERATION:

Environmental Objectives and Guidelines  
<http://www.uiaa.ch/visual/files/guideA5.pdf>

NATIONAL SKI AREAS ASSOCIATION:

Sustainable Slopes: The Environmental Charter for Ski Areas  
[http://www.nsaa.org/nsaa/environment/sustainable\\_slopes/](http://www.nsaa.org/nsaa/environment/sustainable_slopes/)

OUTDOOR RECREATION CENTRE (VICTORIA, AUSTRALIA):

Adventure Activity Standards

[http://www.orc.org.au/aas/view\\_standards.htm#](http://www.orc.org.au/aas/view_standards.htm#)

### TOURISM INITIATIVES AND PROGRAMS

CENTER FOR ENVIRONMENTAL LEADERSHIP IN BUSINESS AT CONSERVATION INTERNATIONAL: TRAVEL AND LEISURE PROGRAM

<http://www.celb.org/xp/CELB/programs/travel-leisure>

CONSERVATION INTERNATIONAL: ECOTOURISM PROGRAM

<http://www.conservation.org/xp/CIWEB/programs/ecotourism/>

ECPAT INTERNATIONAL

<http://www.ecpat.net>

MAST-NEPAL

<http://www.mast-nepal.org>

NATIONAL SKI AREAS ASSOCIATION: SUSTAINABLE SLOPES ASSESSMENT TOOL

[http://www.nsaa.org/nsaa/environment/ss\\_tool/2005instructions.pdf](http://www.nsaa.org/nsaa/environment/ss_tool/2005instructions.pdf)

TOUR OPERATORS' INITIATIVE FOR SUSTAINABLE TOURISM DEVELOPMENT

<http://www.toinitiative.org>

UNEP TOURISM PROGRAMME

<http://www.unep.fr/tourism>

WORLD TRAVEL AND TOURISM COUNCIL: TOURISM FOR TOMORROW AWARDS  
<http://www.tourismfortomorrow.com/>

### MOUNTAIN AREA CONSERVATION GROUPS AND RESOURCES

THE ALPINE NETWORK

<http://www.alparc.org>

THE BRITISH MOUNTAINEERING COUNCIL

<http://www.thebmc.co.uk>

INTERNATIONAL CENTRE FOR INTEGRATED MOUNTAIN DEVELOPMENT

<http://www.icimod.org/home/>

THE INTERNATIONAL MOUNTAINEERING AND CLIMBING FEDERATION (UIAA)

<http://www.uiaa.ch>

THE INTERNATIONAL PORTER PROTECTION GROUP

<http://www.ippg.net>

THE MOUNTAIN INSTITUTE

<http://www.mountain.org/index.cfm>

THE MOUNTAIN FORUM

<http://www.mtnforum.org/index.cfm>

### GENERAL TOURISM ASSOCIATIONS

ASSOCIATION OF BHUTANESE TOUR OPERATORS

<http://www.abto.org.bt>

ASSOCIATION OF UGANDA TOUR OPERATORS

<http://www.auto.or.ug>

BRAZIL TOUR OPERATORS ASSOCIATION

<http://www.braziltouroperators.com>

ECOTOURISM AUSTRALIA

<http://www.ecotourism.org.au>

EUROPEAN TOUR OPERATORS ASSOCIATION

<http://www.etoa.org>

FEDERATION OF TOUR OPERATORS (UK)

<http://www.fto.co.uk>

INDIAN ASSOCIATION OF TOUR OPERATORS

<http://www.iato.in>

INTERNATIONAL ASSOCIATION OF ANTARCTICA TOUR OPERATORS

<http://www.iaato.org>

INTERNATIONAL GALAPAGOS TOUR OPERATORS ASSOCIATION

<http://www.igtoa.org>

IRISH TOUR OPERATORS ASSOCIATION

<http://www.itoa-ireland.com>

KENYA ASSOCIATION OF TOUR OPERATORS

<http://www.katokenya.org>

MALAYSIA ASSOCIATION OF TOUR AND TRAVEL AGENTS

<http://www.matta.org.my>

NATIONAL TOUR ASSOCIATION (US)  
<http://www.ntaonline.com>

NEPAL ASSOCIATION OF TOUR OPERATORS  
<http://www.nepaltouoperators.org>

TANZANIA ASSOCIATION OF TOUR OPERATORS  
<http://www.tatotz.org>

UNITED STATES TOUR OPERATOR  
ASSOCIATION  
<http://www.ustoa.com>

#### OTHER CI/TOI/UNEP PUBLICATIONS ON TOURISM GOOD PRACTICES

A SHIFTING TIDE: ENVIRONMENTAL  
CHALLENGES AND CRUISE INDUSTRY  
RESPONSES  
[http://www.celb.org/xp/CELB/publications-  
resources/](http://www.celb.org/xp/CELB/publications-resources/)

FROM SHIP TO SHORE: SUSTAINABLE  
STEWARDSHIP IN CRUISE DESTINATIONS  
[http://www.celb.org/ImageCache/CELB/  
content/downloads/fromshiptoshore\\_2epdf/  
v1/fromshiptoshore.pdf](http://www.celb.org/ImageCache/CELB/content/downloads/fromshiptoshore_2epdf/v1/fromshiptoshore.pdf)

INTEGRATING SUSTAINABILITY INTO  
BUSINESS: A MANAGEMENT GUIDE FOR  
RESPONSIBLE TOUR OPERATIONS  
<http://www.toinitiative.org/about/about.htm>

INTEGRATING SUSTAINABILITY INTO  
BUSINESS: AN IMPLEMENTATION GUIDE FOR  
RESPONSIBLE TOURISM COORDINATORS  
<http://www.toinitiative.org/about/about.htm>

A PRACTICAL GUIDE TO GOOD PRACTICE:  
MANAGING ENVIRONMENTAL AND SOCIAL  
ISSUES IN THE ACCOMMODATIONS SECTOR  
[http://www.toinitiative.org/supply\\_chain/  
supply.htm](http://www.toinitiative.org/supply_chain/supply.htm)

A PRACTICAL GUIDE TO GOOD PRACTICE:  
MANAGING ENVIRONMENTAL IMPACTS IN THE  
MARINE SECTOR  
[http://www.toinitiative.org/supply\\_chain/  
supply.htm](http://www.toinitiative.org/supply_chain/supply.htm)

SUPPLY CHAIN ENGAGEMENT FOR TOUR  
OPERATORS: THREE STEPS TOWARD  
SUSTAINABILITY  
[http://www.toinitiative.org/supply\\_chain/  
supply.htm](http://www.toinitiative.org/supply_chain/supply.htm)

SUSTAINABLE TOURISM: THE TOUR  
OPERATORS' CONTRIBUTION  
[http://www.toinitiative.org/good\\_practices/  
introduction.htm](http://www.toinitiative.org/good_practices/introduction.htm)

TOURISM AND DESERTS: A PRACTICAL  
GUIDE TO MANAGING THE SOCIAL AND  
ENVIRONMENTAL IMPACTS IN THE DESERT  
RECREATION SECTOR  
[http://www.unep.fr/pc/tourism/library/  
Desert%20Guide.htm](http://www.unep.fr/pc/tourism/library/Desert%20Guide.htm)

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#### NOTES

<sup>1</sup>“People and Mountains,” People  
and the Planet website, [http://  
www.peopleandplanet.net/doc.  
php?id=966&section=11](http://www.peopleandplanet.net/doc.php?id=966&section=11)

<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

## About Conservation International

CI believes that the Earth's natural heritage must be maintained if future generations are to thrive spiritually, culturally and economically. Our mission is to conserve the Earth's living natural heritage, our global biodiversity, and to demonstrate that human societies are able to live harmoniously with nature. Founded in 1987, CI is a global nonprofit organization, working in more than 30 countries on four continents. Practical and people-centered, we draw upon a unique array of scientific, economic, awareness-building and policy tools to help inhabitants of the Earth's biologically richest ecosystems improve the quality of their lives without depleting natural resources.

For more information  
see **[www.conservation.org](http://www.conservation.org)**

## About the Tour Operators' Initiative for Sustainable Tourism Development

The Tour Operators' Initiative for Sustainable Tourism Development (TOI) is an Association of tour operators that have committed to incorporate sustainability principles into their business operations and work together to promote and disseminate practices compatible with sustainable development.

The Initiative was established in 1999 with the support of the United Nations Environment Programme (UNEP), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Tourism Organization (UNWTO).

TOI seeks to advance the sustainable development and management of tourism and to encourage tour operators to make a corporate commitment to sustainable development. It serves as a network, global in scope and commitment and, in character, voluntary, non-profit, and open to all tour operators, regardless of their size and geographical location.

Within socially responsible tourism development, TOI implements the Code of Conduct for the Protection of Children from Sexual Exploitation in Travel and Tourism.

### Members of the Tour Operators' Initiative (TOI):

- > Accor Tours (France)
- > Atlas Voyages (Morocco)
- > Aurinkomatkat-Suntours (Finland)
- > Discovery Initiatives (UK)
- > Dynamic Tours (Morocco)
- > Exodus (UK)
- > First Choice Holidays PLC – Mainstream Sector (UK)
- > FreeWay Adventures (Brazil)
- > Hotelplan (Switzerland)
- > KEL 12 (Italy)
- > REWE-Touristik (Germany)
- > Premier Tours (USA)
- > Sahara Tours International (Morocco)
- > Settemari (Italy)
- > Studiosus (Germany)
- > Thomas Cook (France)
- > Travel Walji's PVT (Pakistan)
- > TUI Group (Germany)
- > VASCO Travel (Turkey)
- > Viaggi del Ventaglio (Italy)

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## About the UNEP Division of Technology, Industry and Economics

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 in Asia.
- > **Production and Consumption** (Paris), which promotes sustainable consumption and production patterns as a contribution to human development through global markets.
- > **Chemicals** (Geneva), which catalyzes global actions to bring about the sound management of chemicals and the improvement of chemical safety worldwide.
- > **Energy** (Paris), which fosters energy and transport policies for sustainable development and encourages investment in renewable energy and energy efficiency.
- > **OzonAction** (Paris), which supports the phase-out of ozone depleting substances in developing countries and countries with economies in transition to ensure implementation of the Montreal Protocol.
- > **Economics and Trade** (Geneva), which helps countries to integrate environmental considerations into economic and trade policies, and works with the finance sector to incorporate sustainable development policies.

*UNEP DTIE activities focus on raising awareness, improving the transfer of knowledge and information, fostering technological cooperation and partnerships, and implementing international conventions and agreements.*

For more information,  
see [www.unep.fr](http://www.unep.fr)

*This Practical Guide to Good Practice has grown out of the experiences of UNEP, Conservation International and the Tour Operators' Initiative for Sustainable Development (TOI) and their partners.*

*Recognizing the need to respect mountain environments and the importance of positive relations with local people, the guide seeks to promote mountain tourism as a leading source of sustainable development, which is possible if tourism is planned by professionals who care about the impact of their activities.*

*In five main sections, the Guide clearly lays out the key issues for mountain tourism, the potential problems and benefits associated with it and specific recommendations for reducing its negative impact and increasing its positive effects.*

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**DTI/0957/PA**