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PRINCIPLES AND RECOMMENDATIONS FOR TOURISM WITHIN SNOW LEOPARD HABITATS



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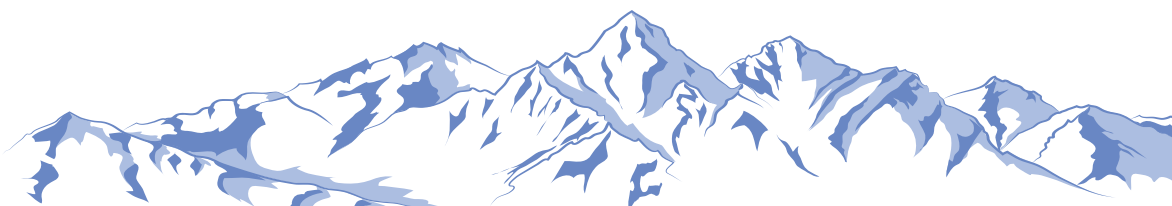
PRINCIPLES AND RECOMMENDATIONS FOR TOURISM WITHIN SNOW LEOPARD HABITATS

*‘Have you seen the snow leopard? No! Isn’t that wonderful?’
(Matthiessen, 1978)*

Written by Justine Shanti Alexander, Ranjini Murali, Ajay Bijoor, Li Yuhan and Charudutt Mishra.

Contributions from Terry Townshend, Matthias Fiechter, Koustubh Sharma and Julian Matthews.

Supported by GEF, UNDP, Snow Leopard Trust, Nature Conservation Foundation and Travel Operators for Tigers. We thank Tenzin Thinley, Kalzang Gurmet, Karma Sonam, Rinchen Togbe, Tenzin Thukten, Tandup Cherring, Kesang Chunnit, Rigzen Dorjay, and Sherab Lobzang from the Nature Conservation Foundation for insights into tourism in Ladakh and Spiti, and Shan Shui Conservation Center for insights on tourism in Qinghai. We thank Kulbhushansingh Suryawanshi and Suri Venkatachalam for support in the development of this document.



1. Introduction

This document aims to provide a practical guide to ecologically and socially conscious tourism practices within snow leopard habitats. It is designed primarily for operators in the tourist industry but also has a potential wider audience of policy makers in conservation and economic development fields. It covers information that has been made available to us at this point. It is however work in progress; we welcome comments, suggestions and best practices from the field which we will use in regularly updated versions of the document.

Tourism in snow leopard habitats has increased considerably as the extreme mountainous areas where these cats exist become more accessible to visitors.

Snow leopard habitats are cold, often alpine systems. They span 12 countries (Afghanistan, Bhutan, China, India, Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Pakistan, Russia, Tajikistan, and Uzbekistan) in Central and South Asia. The global population of snow leopards remains unknown, but estimates put the number at just a few thousand individuals (3,920 to 6,390 according to one guess).

This cat's habitats are also home to diverse cultural groups who have long survived in these extreme environments. They have much to offer visitors - stunning landscapes, unique cultures and biodiversity. With improvements in road and transportation networks and rising incomes, international as well as domestic tourism to these areas is on the rise.

If managed effectively, tourism in snow leopard habitats presents an opportunity to provide a great visitor experience while enhancing local livelihoods and supporting snow leopard and biodiversity conservation. It allows people to experience the uniqueness of these high mountain ecosystems while potentially building public support for and contributing to their conservation.

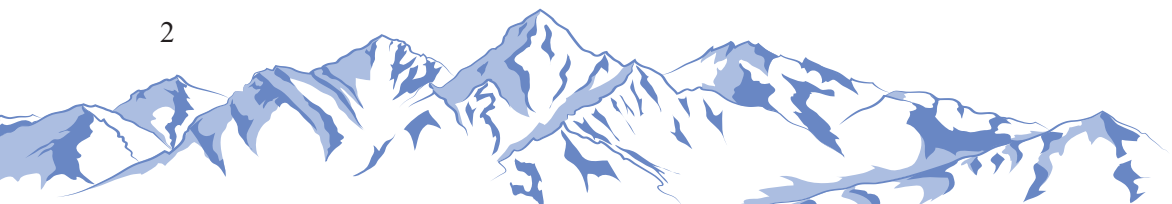
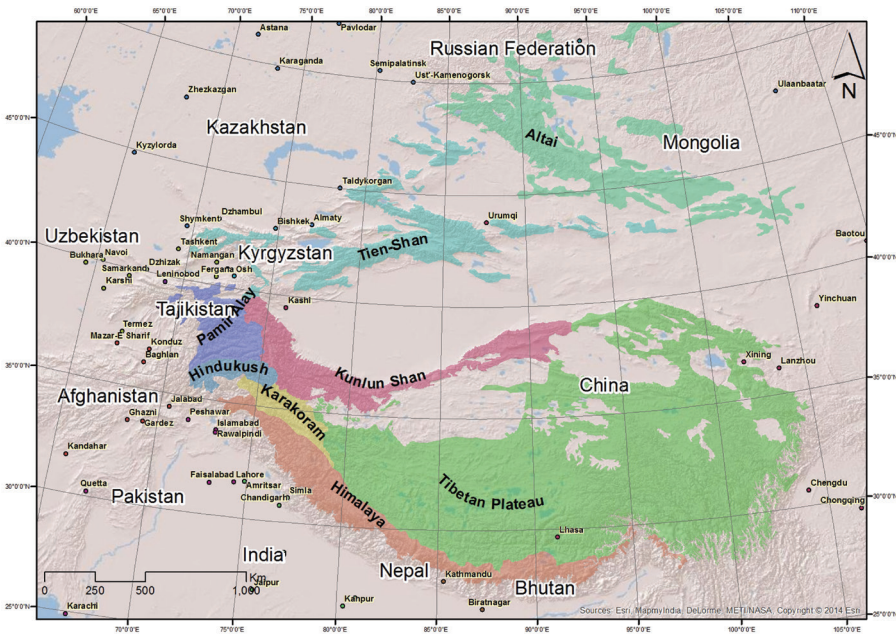


Figure 1: Snow leopard range (IUCN; Available from URL: www.iucnredlist.org)



However, if uncontrolled, tourism also represents a threat to these fragile landscapes and the plants and animals that inhabit them. To ensure that these landscapes remain intact and continue to provide tourism opportunities in the long term, it is crucial that tourism ventures adopt responsible, non-invasive, and sensitive practices with respect to the ecosystem and the local cultures. These can take the form of locally relevant guidelines, codes of practice, and regulatory frameworks.

This document lays out a set of **Principles** and **Recommendations** for planning, development, implementation and monitoring of responsible tourism within snow leopard habitats. It draws on frameworks from the Ecotourism sector, which defines ecotourism as ‘responsible travel to natural areas that conserves the environment and improves the well-being of local people’ (The International Ecotourism Society, 1990).

The International Ecotourism Society (TIES) emphasises four essential considerations – strengthening conservation, building on local community participation, seeking economic benefits for nature and local people, and achieving a good experience for tourists. We have simplified and adapted these considerations for the promotion of responsible tourism within snow leopard landscapes. This has specifically taken into account the importance of supporting local communities in conservation practice, their ownership of initiatives and sustainability.

We suggest 4 four key principles, or ‘pillars’ within an overarching framework:

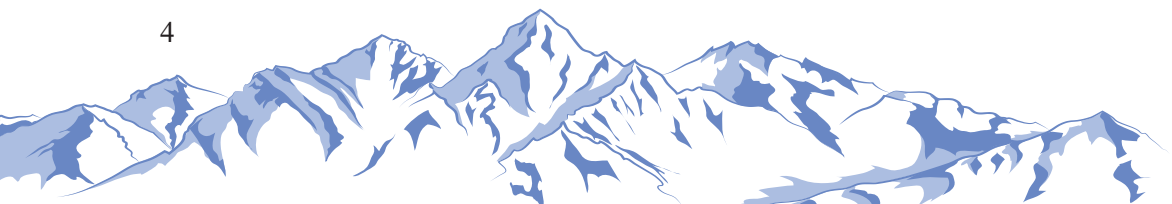
- net positive impact on the environment
- promote awareness and respect
- seek conservation benefits
- provide opportunities for benefits to communities at the local level

Within these principles we provide specific recommendations for action by tourism operators and concerned government actors.

2. A rapidly changing context for snow leopards

While tourism is expanding rapidly, information on its social and environmental impacts, especially in snow leopard habitats, remains scarce. In order to understand impacts, it is important to first determine the current situation of snow leopards and consider their potential interactions with local communities and beyond, with particular attention to tourism practices.

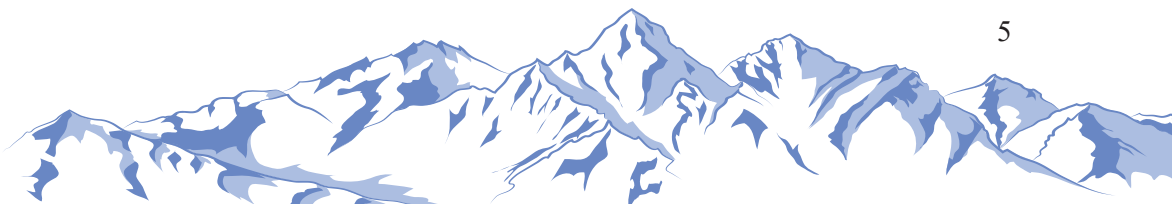
Snow leopards live in areas that up to now have been largely accessible only to local communities. They are found in the high mountains of South and Central Asia in a range of different elevations. In the



Himalayas, they usually occur between 3,000 and 5,400 meters above sea level while in Mongolia and Russia, they live between 1000- 2000 meters. Snow leopard landscapes are typically composed of dry alpine systems with semi-arid shrub lands and grasslands. During the winter months, much of snow leopard habitat is inaccessible due to heavy snow cover. However, such habitat can remain accessible in summer. In the Tibetan Plateau, more than 30% of the total surface is under snow cover from November to April (Pu et al., 2007). These high elevation areas are experiencing the effects of climate change, and they are predicted to experience an increase in average annual temperatures, increased annual precipitation and forests ascending into alpine areas (IPCC, 2007; Forrest et al., 2012). Studies suggest that climate change could lead to some loss of snow leopard habitat especially within the Himalayan mountain range (Forrest et al., 2012).

The biodiversity in these areas is unique. There is the presence of flora and fauna specially adapted to the harsh, arid, and climatically variable conditions, which influence snow leopard numbers. In particular, the presence of ungulate species such as the ibex and blue sheep are important as the snow leopard's primary food source across the range (Lyngdoh et al., 2014). Other relatively less known animals are also part of the snow leopard's diet, including the argali – the largest species of wild sheep; and the pika – the smallest hare. Snow leopards co-exist with other carnivores, including wolf, lynx, and Pallas's cat. Little is known about their interactions (Alexander et al., 2015). The plant assemblage includes a range of interesting herbs, forbs, sedges, and shrubs; many of which are important food sources for snow leopard prey species.

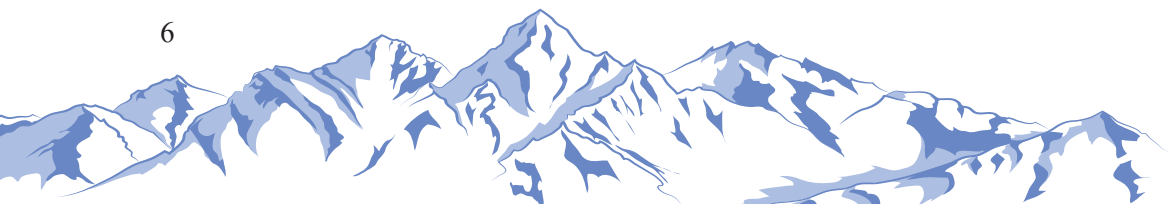
These areas represent particularly fragile ecosystems, which are increasingly subject to human activities and development projects (Snow Leopard Network, 2014). The major threats to snow leopards include hunting,



retaliatory killing, loss of prey, and habitat degradation or fragmentation related to development, urbanization, and mining projects. The presence and relative importance of threats vary across the range and over time (Snow Leopard Network, 2014).

Communities in snow leopard landscapes primarily rely on traditional herding and agricultural methods that have evolved over many generations, and are heavily dependent on ecosystem services (Handa 1994, Murali et al., 2017). Agricultural and livestock products contribute to the bulk of the local economy. Employment opportunities in snow leopard areas are few. Apart from livestock rearing, they include daily wage labour, collection and sale of caterpillar fungus, small private businesses, scarce jobs in government and some employment in industries such as mining and tourism.

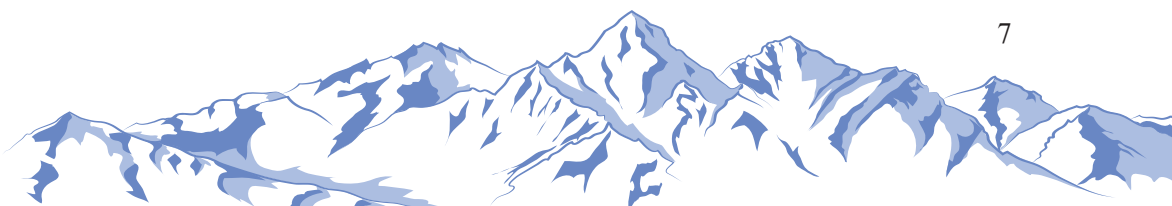
Across most snow leopard landscapes, the local community and wildlife share common space. Snow leopards can pose a direct threat to livestock holdings, which are an integral part of such pastoral economies. While some communities report high levels of livestock depredation and hold strong negative attitudes towards snow leopards (i.e. Annapurna Conservation Area, Nepal (Aryal et al., 2014)), communities in other areas may be more tolerant towards the species (Li et al., 2013a). Conservation efforts so far have focused on building community resilience in the context of snow leopard and human co-existence. The Snow Leopard Trust and its partners implement a number of community-based conservation schemes, including: handicrafts (Snow Leopard Enterprises), livestock insurance, livestock vaccination, predator-proofed corral construction, anti-poaching training and conservation education. Importantly, most conservation interventions are organised and run in close partnership with the local communities. These efforts are supported by large-scale policy



initiatives, in particular the Global Snow Leopard and Ecosystem Protection Program (GSLEP).

Increasingly, both domestic and international tourists visit such ecologically vulnerable areas. They range from high-end tourists expecting a certain level of comfort and experienced guides to back-packers looking for adventure. There is a wide diversity within and between countries in the types of tourism infrastructure, facilities and options that are available as well as in the demand from tourists, although the situation is changing very fast. In particular, there are signs that the number of tourists is rapidly increasing, taking advantage of improved transport routes in these areas.

Tourism activities can have a wide range of environment and social impacts (Box 1). It is important to be precautionary, minimize wherever possible any negative impacts and promote positive behaviours within the tourism sector. While change is inevitable, insensitive tourism can erode the power of the local communities to manage this change. It is important for local communities to be closely involved and retain control over the system in order to reduce negative impacts (Kumar and Kumar 2014). A study similar to the one on eco-tourism in Central India can be commissioned to understand these (e.g. Chundawat et al. 2017).



Box1: Potential tourism activities that can have negative environmental and social impacts

Tourism activities causing negative social and environmental impacts

Environmental

Infrastructure development causing habitat destruction

- Construction of facilities
- Water resource management
- Transportation networks (roads, railways, footpaths, airlines)
- Waste disposal (garbage, pollution)

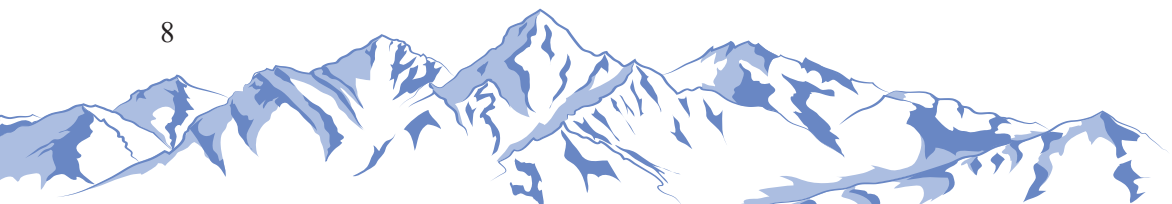
Tourist and tourism operator activities causing animal disturbance

- Disturbance to animals due to irresponsible visitor behaviour or photography
- Baiting

Social

Tourist behaviour affecting local societal structure and culture

- Tourist spending patterns unduly influence community interests and behaviours
- Tourist attire is disrespectful
- Cultural values and traditions are commercialized for third party interests



1. PRINCIPLES AND RECOMMENDATIONS FOR RESPONSIBLE TOURISM



To avoid tourism becoming a threat to snow leopards and to ensure that it is environmentally sustainable, it is essential to introduce and promote a manifesto with code of conduct that mandates good practices for minimizing tourism's social and environmental impacts in snow leopard habitats. We recognize that it is not possible to provide universal guidelines, and every situation will have its own ecological and human specificities. However, there are four broad principles of responsible tourism that can be identified and need to be considered in an integrated way (Figure 2). These principles are presented below with recommendations that relate to the snow leopard's protection and aim to promote its conservation.

The recommendations set out below have been categorized as Essential, Very Important, and Important, based on their likely impact on the environment and the local community.

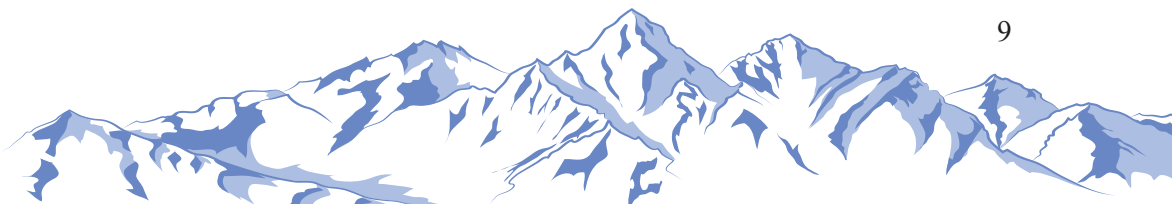
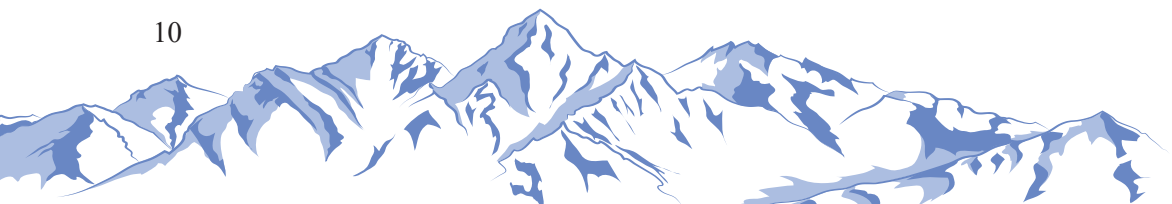


Figure 2: Responsible Tourism Principles and Recommendations for snow leopards (adapted from TIES 1990)



Principle 1: Net positive impact

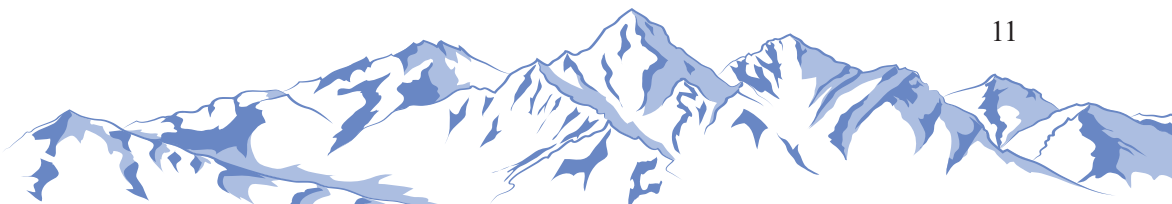
Prepare tourists to ensure a net positive impact on the physical and cultural environment in which snow leopards survive

Recommendations:

1.1 No interference with animal behaviour (ESSENTIAL)

It is important to manage both tourist density and their mode of interaction with wildlife. A sudden influx of large numbers of tourists within a given area of snow leopard habitat is likely to disturb these animals, their prey and the vegetation. The amount of human and animal waste, combined with physical damage to the habitat can be devastating, often to the very industry itself. A cap on numbers, to be determined at local level depending on the nature of the area and its degree of fragility, within a given visiting area is strongly recommended. For example, the size of tourist groups in the snow leopard habitat area of Angsai, China, is limited to 3 groups of 3-4 people per group over an area of 1516 km². Alternate activities such as cultural or agricultural tourism can be designed in order to manage the number of tourists visiting in snow leopard habitat at any time. Cap on numbers and other key management decisions should ideally be made in close consultation with the local community to facilitate effective implementation. In association with the local governments, NGOs and the local community, identifying areas to visit that would have the most ecological impact and accordingly creating zones with less or no tourism, is desirable.

Groups should be sensitised (through briefings by experienced individuals or written materials) to the behaviour of animals being observed and the imperative need of not disturbing or harming wildlife. Snow leopards are solitary animals and can be easily stressed by even modest human

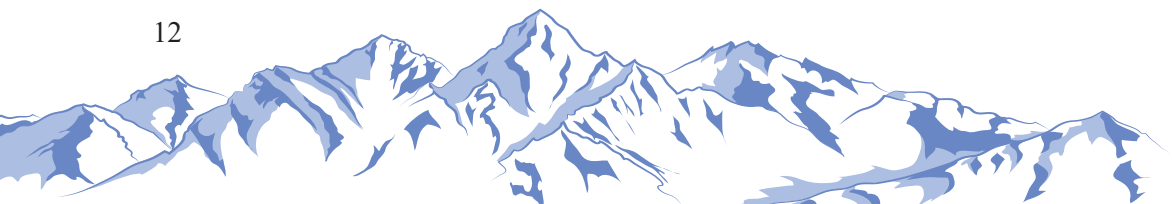


presence. When tourists are brought to observe snow leopards, sufficient distances should be maintained to ensure that the individual animal being observed is not stressed and is comfortable with human presence. It is essential to move away if the observed individual gives any appearance of being stressed. Aggressive tactics such as deliberately disturbing or chasing the animal to collect photographic and videographic material, deliberate loud noises, hindering and disturbing animal movements, must be strictly prohibited and penalized. There has been at least one recorded instance of a snow leopard falling off a cliff while trying to escape from an intrusive filming group.

The impact of new observation technologies, such as drones, on snow leopards is unknown. Few studies from other large mammals suggest that the animals can be stressed by the presence of drones at close distances. Drones should only be used under the guidance and close supervision of knowledgeable wildlife managers or conservation scientists. The use of drones needs to be controlled and regulated within National Parks or other mountainous areas.

1.2 No baiting (*ESSENTIAL*)

Baiting (using food or a lure to attract animals) snow leopards should not be permitted under any circumstances. This practice is sometimes attempted in order to increase the probability of spotting snow leopards. Consequences are serious and can lead to an increase in snow leopard killing of livestock, undesirable changes in behaviour, potential aggressive interactions among snow leopards at bait sites, and unintended effects of habituation of snow leopards to humans. Livestock depredation can aggravate negative community attitudes towards snow leopards and potentially lead to retaliatory killing. This would also directly undermine local conservation efforts. For the same reason, baiting for other species should also not be permitted. This includes salt licks for ungulates and play back calls for birds.



1.3 Low-impact infrastructure and facilities (*VERY IMPORTANT*)

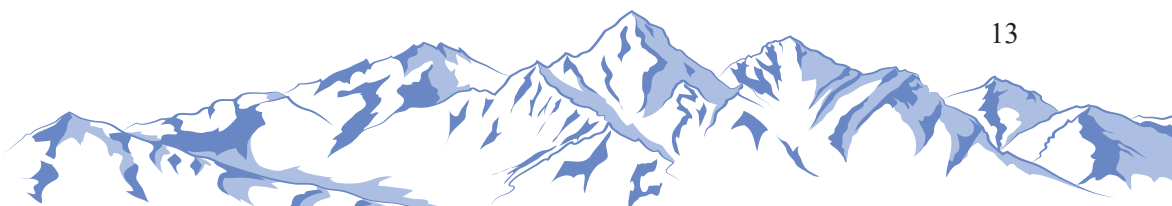
The high mountain ecosystem in which snow leopards and their prey exist is fragile and easily disturbed. It is important to think through the different infrastructure and facilities that will be used by tourists and the negative impacts that they might have on an area's natural resources.

Low-impact infrastructure specifically refers to accommodation and supporting services such as energy, food, water and waste production. It encompasses aspects of sustainable design, minimum use of natural resources and biodegradable material (Crawford 2000). They are informed by the natural and cultural environment that they are set in and are therefore location and site-specific. Low infrastructure facilities would include (Mehta, Baez, and O'Loughton 2002):

- Sensitivity to the surrounding natural and cultural environment
- Minimal impact on the natural environment during construction
- Careful attention paid to form, aesthetics, landscaping and color, as well as the use of localised architecture
- Use of alternative technologies, sustainable means of water acquisition and reduction of water consumption
- Careful handling and disposal of solid waste and sewerage
- Meeting energy needs through passive design

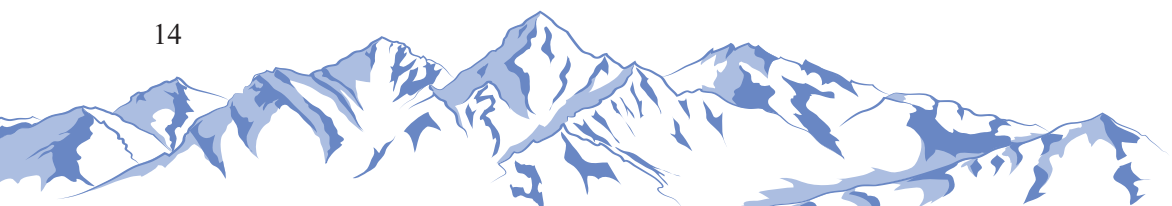
Some considerations and best practices for low-impact infrastructure and facilities in snow leopard habitats are given below:

- 1) Accommodation: Drawing on existing structures and avoiding new builds should be preferred to avoid adding additional stress to the local environment. For example, especially in the more remote areas, home-stays rather than the development of separate infrastructure



can be an effective approach to accommodation for tourists. While constructing new structures, the use of locally available material is preferred. Traditionally, across much of snow leopard habitat, herders lived in portable tents made of wool. These could also be used as accommodation for tourists (as is already being done by some lodges in Mongolia and Kyrgyzstan).

- 2) **Water management:** Given that snow leopard habitats are arid systems, water scarcity is a big concern in these areas - and tourism is a big consumer of fresh water. Tourist water consumption is at the rate of 84 – 2000 liters/person/day as compared to resident water consumption of 10 - 40 litres/person/day in arid regions (Gossling 2012, UNESCO 1999). Some measures employed by establishments in these landscapes are shown in box 2. They include having short-flush and short shower options, aerated taps, using gray water for plants, using dry composting toilets, recycling water for flushes, and ensuring tourist orientation and sensitivity towards water scarcity.
- 3) **Waste management:** Across much of snow leopard habitat, waste management systems are poorly developed. Keeping this in mind, the use of plastic can be discouraged, e.g. by promoting the use of refillable, durable water bottles as an alternative to plastic bottles. Waste should be separated and organic waste composted.
- 4) **Energy:** Alternative renewable sources of energy such as solar electricity, solar cookers, solar water heaters and biogas, and low impact micro hydel where appropriate, can be considered. Passive solar heating options for winter can be an alternative to heating. Energy conservation options such as the use of low energy bulbs can be considered.

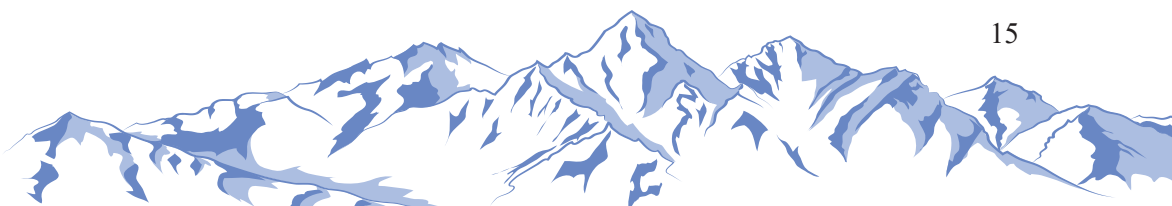


There are several tools that have been designed to assess the environmental impact of buildings such as NABERS, Environmental status, Ecoprofile and Greenglobes. These tools assess buildings on parameters such as the nature of the site, the site area per user, the material type of the building, energy efficiency, emissions, renewable electricity, generation of excess energy, water consumption, building area per person, on-site recycling, sewage treatment, and waste water reuse. Independent assessments can be done of the tourist accommodation to ensure that they have the least impact on the local environment. Accreditation schemes with national and/or international organizations can be put into place to support adherence to the minimum standards. Such accreditation schemes have been promoted in tiger habitats (e.g. the PUG Mark accreditation scheme by ToFTigers). An environmental impact assessment should be mandatory for any key infrastructure or buildings that are set up in the area.

1.4 Promote a general Code of Conduct. (*VERY IMPORTANT*)

It is critical to develop and follow a code of conduct for tourists. Each tour operator needs to have such a code and actively share and explain it to all clients, both before and during tourist experiences. The code of conduct should include good practices for:

- How to engage with the local community
- Respecting cultural norms
- Not interfering with animal behavior
- Prohibiting baiting
- Avoiding off-road driving
- Photography and videography (including avoiding unnecessary flash photography)



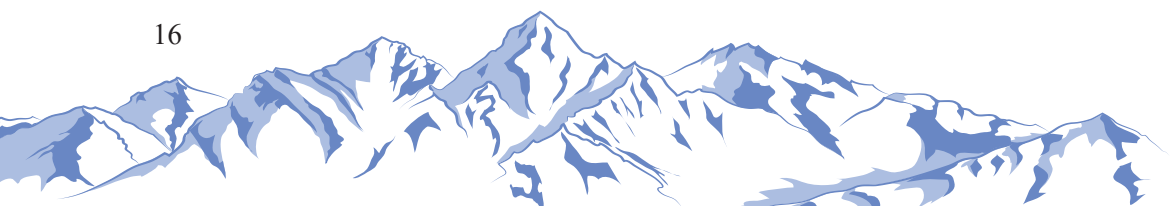
- Avoiding additional disturbances such as littering, extracting plants, playing loud music
- Taking out all litter from fragile zones back to places where it can be properly disposed of

The code of conduct could also include pointers on how to handle sensitive information regarding illegal activities such as hunting, poaching, or activities damaging the habitat or ecosystem. It should also include clear statements prohibiting payments to allow access to restricted areas or to bypass rules. These activities, even if well intended, should be recognized as damaging, and easily become a form of passive corruption. Simple and clear guidelines will help make the experience safer and enjoyable for all concerned.

Guides and rangers are often extremely knowledgeable about local settings and face challenging tasks of maintaining conservation goals. It is crucial that tourist's operations both respect and support their work. A code of conduct can help promote shared approaches and values.

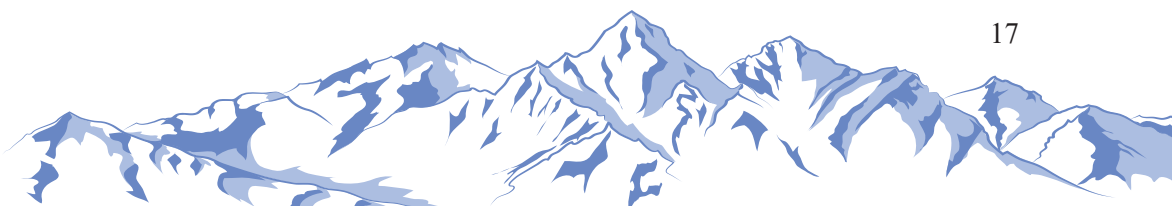
1.5 Strict adherence to hunting bans. (ESSENTIAL)

Tourists should be encouraged to respect wildlife of all kinds and adhere strictly to local rules and norms as well as national rules and regulations about hunting. Trophy hunting is permitted under the laws of some snow leopard range country governments, for instance in Russia, Tajikistan, Kyrgyzstan, Kazakhstan, Pakistan, and Mongolia. In many instances, even if legal, trophy hunting goes against local beliefs and cultures and even against tourism values. In such cases, it should be avoided. There has been a rapid rise in trophy hunting in snow leopard habitat in the last few years, as more established trophy hunting destinations become less accessible due to stricter regulations (Norbdø et al. 2018). Argali, Marco-polo sheep, markhor, wolves, bears, and ibex are the main species targeted. Trophy hunting is controversial,



and there has been mixed support for its potential to contribute to conservation and livelihoods. It is argued that well managed trophy hunting ventures may in some settings help to protect wild animals from illegal hunting and poaching through adding value to community land and wildlife resources. A percentage of the revenue generated from trophy hunting can be transferred directly to local communities or used for community development. Strong evidence of such benefits still do need to be rigorously documented. If mismanaged there however are a number of negative impacts of trophy hunting that have been reported in the literature. E.g., large males are often specifically targeted for trophy hunting and this can cause a skew in the population as well as a decrease in horn size (Mallon 2013). Unsustainable hunting can cause a steep decline in the population, which is especially concerning if a threatened species is targeted (Singh and Milner-Gulland 2011). In an effort to regulate trophy hunting, many governments have prescribed species quotas. However, the methods for arriving at these quotas are often unscientific and motivated by financial gains.

If the tourism venture must engage with trophy hunting, it is essential that prescribed quotas for all species be adhered to. Otherwise, hunting could have serious negative impacts on these populations. It is also important that tourism operators engage with scientists to ascertain that the prescribed quotas will not cause declines in the targeted population.



Principle 2: Promote awareness and respect

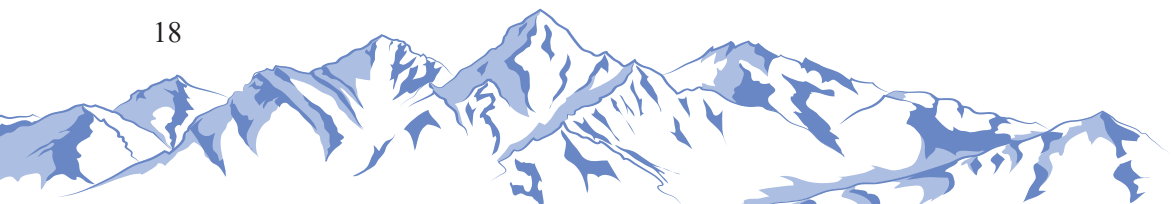
Build environmental and cultural awareness and respect, recognizing the rights and beliefs of all local people, including indigenous people, and working with the community in partnership to promote sustainable snow leopard conservation.

Recommendations:

2.1 Expand the scope of visits. (IMPORTANT)

Tourists and tour operators often focus on snow leopard sightings at any costs, and at the exclusion of other wildlife. This can lead to negative behaviours of tourists and tour operations anxious to meet their expectations.

We suggest the tourism objective be expanded to include the entire ecosystem, its inhabitants, culture and history – rather than exclusively focusing on the snow leopard. This necessarily begins right from the marketing stage, before tourists arrive, e.g. through marketing materials, advertisements, brochures, etc. that will raise interest in other aspects of the ecosystem, and help manage their expectations at the outset. Sightings of the elusive snow leopard are rare, and tourism ventures centred on guaranteeing snow leopard sightings can lead to disappointment and potentially promote ecologically unfriendly practices such as baiting, that can endanger the snow leopard, and also lead to tourist dissatisfaction. Expanding the focus of the venture can increase awareness of the other fascinating opportunities offered by the landscape. The unique ecosystems in which the snow leopard lives have evolved and adapted to the cold, arid, high altitude environment. Tourists can be prepared and supported to embrace the entire landscape and ecosystems, which can increase tourist awareness and respect for other biodiversity, for the culture and the landscape.



Box 3: Suggestions to expand the focus of visits

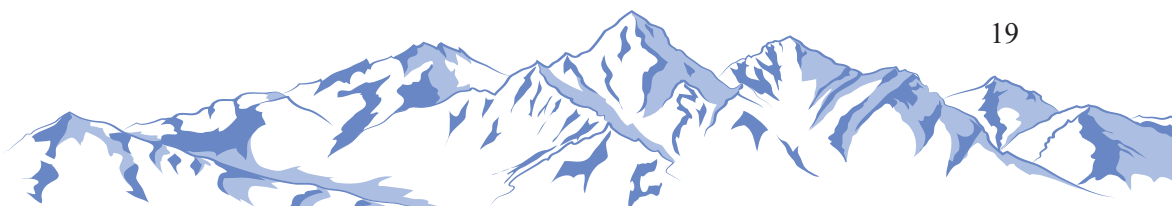
- Conduct an initial site assessment to detail the natural history and unique features of the area that tourists can appreciate.
- Prepare marketing materials that highlight and promote interest in both snow leopards and other animals such as ibex, blue sheep, argali, marmots, foxes, bird species, as well as plant species. Promote interests in their attributes and interpretation of biodiversity adaptations to cold and high regions.
- Build local interest and skills in identifying tracks and other signs (scrapes, sprays, scats etc.). Snow leopards are seen more commonly in winter but are difficult to track in the summer months. Their signs on the other hand, such as paw prints, scrape marks and faeces can be detected throughout the year.
- Use camera traps in accordance with the local law to identify the biodiversity found in the region and promote interest among visitors. Tourists could also potentially be involved in setting up and learning about the camera traps and their use in science.

2.2 Respect and reinforce positive traditional practices. (*VERY IMPORTANT*)

The conservation of snow leopards depends upon their co-existence with local communities. Local communities are the guardians of snow leopard habitat for the long term. Their knowledge of the local environment is a huge resource for conservation efforts.

Appreciation of cultural and traditional practices that are beneficial to the environment can underpin conservation efforts. Highlighting these as part of the tourist interaction can help generate pride and strengthen local community predisposition toward and support for wider conservation efforts. The use of local guides not only gives access to unique knowledge of the area, it also provides insights into the local culture and contributes to local livelihoods.

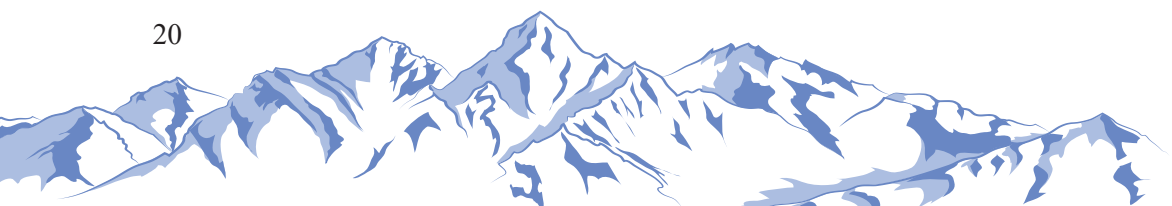
While it is important to also understand traditional practices that are potentially harmful to the environment and biodiversity, these should not be endorsed or facilitated through purchases or publicity. Such practices include beliefs in the medicinal or aphrodisiacal value of snow leopard body parts. Snow leopard prey body parts may also be sought for similar



reasons, as well as being used in handicrafts. Inadvertent encouragement of these traditions may directly contribute to and foster international trade of illegal body parts. This is an emerging threat to snow leopards that cannot be ignored.

2.3 Ethical and humane use of animals for tourism purposes. (VERY IMPORTANT)

Domesticated animals are often used within the tourism sector for a variety of reasons. Animals such as horses, donkeys, mules, and camels are used as pack animals, especially during hikes. Often, domesticated animals unique to the landscape such as the yak or the Tibetan mastiff are used to provide photo opportunities for tourists. In other instances, wild animals that have traditional linkages to the community, such as raptors in Kyrgyzstan, are used to expose tourists to these cultural insights. These can be important sources of income to the local community. However, in several instances these animals are inhumanely treated, being forced to stay for long hours in the sun without food or water, made to perform constantly, forced to remain in unnatural positions for photo opportunities, overloaded, forced to walk long distances, or beaten. This can result in deteriorating animal welfare and the animals feeling extremely stressed. If animals are being used, it is paramount to ensure that the animals are being humanely treated and to avoid cruelty to them. According to the World organisation of Animal Health (2018) good animal welfare includes disease prevention, appropriate veterinary care, shelter, management and nutrition, a stimulating and safe environment, and humane handling. The main guiding principle for animal welfare is based on the internationally recognised five freedoms : freedom from hunger, thirst and malnutrition; freedom from fear and distress; freedom from physical and thermal discomfort; freedom from pain, injury and disease; and freedom to express normal patterns of behaviour (World Organization for Animal Health, 2018).



Principle 3: Seek conservation benefits

Ensure tourism operators engage with local conservation initiatives and provide direct and/or indirect benefits to conservation.

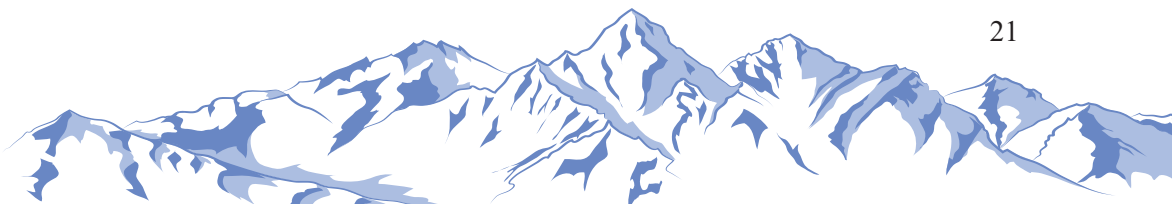
Recommendations:

3.1 Engage with local institutions. (IMPORTANT)

Tourist operations are often planned separately and can easily bypass important local structures and institutions. This can lead to misunderstandings and potential conflict, while missing opportunities for collaboration in conservation.

Ideally, organisers should engage with local conservation structures such as national parks authorities, community rangers/community leaders and local NGOs. Local authorities are particularly relevant when planning and implementing guided visits. Formal agreements on the number and size of groups, taking into account ecological impact, should be considered and adopted where possible (See Principle 1). There are no hard and fast rules for this, and it should be debated and agreed with local authorities and community representatives. Tourist agencies should participate in processes to provide local authorities and conservation organizations with information about visitor numbers and their planned activities, for instance through hotel or park reservation arrangements. Guidance should be sought on a range of issues, including current conservation concerns and possible contributions that tourists can make to conservation efforts.

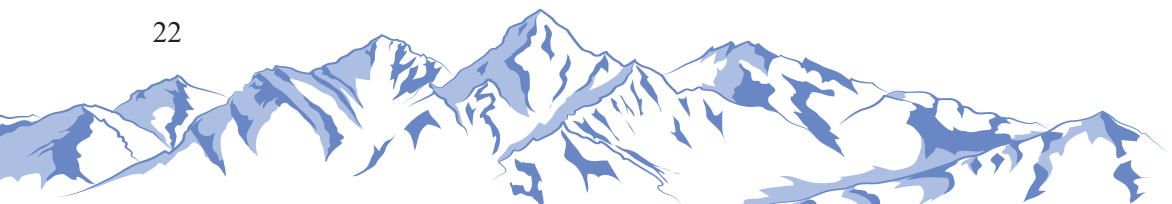
It is recognized that tourist agencies do not all have the time and resources to work with a whole host of institutions and organizations. In such case, a local tourist association can be identified to serve as a contact, repository of information and source of advice and support, including the mandatory code of conduct to be followed in the area.



3.2 Build in approaches to support local conservation efforts. (*IMPORTANT*)

Well thought-out approaches can be developed to directly support local conservation efforts. Approaches to consider are likely to be situation-specific, but could include:

- a. **Financial contribution.** A percentage of profits from tourism can be donated to support local conservation efforts.
- b. **Infrastructure support.** Tourist operators can usefully support building more sustainable infrastructure in the area, in some cases as a condition for obtaining a licence to operate in the area, as might be required within conservancy-like structures. For example, through improvements in community water or waste management systems (See Principle 1). While the tourist establishment itself can focus on reducing water consumption, they can also attempt to help improve local water management, e.g. through building artificial glaciers (<http://icestupa.org/>), where appropriate, or helping with building water channels to the village where needed. As most of these spaces lack proper waste management systems, the tourist establishment can assist in building common composting structures and encourage waste segregation.
- c. **Information sharing.** Tourist operators can provide important information to advise local conservation programs. Data on wildlife sightings and locations can help inform local conservation efforts. Information on poaching or human disturbed areas may also be useful.
- d. **Volunteer engagement.** Tourist operators can help find and fund volunteers to support conservation efforts. For example, seasonal volunteers maybe needed for certain fieldwork and research.



Suggestions for these could be developed in consultations with organizations such as the Snow Leopard Trust and partners already working for conservation in snow leopard landscapes.

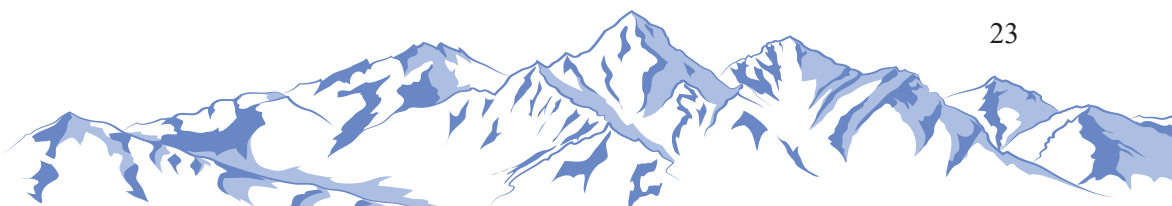
There should be a major effort to avoid setting up new ecotourism-associated activities that do not collaborate with or support local conservation efforts, and which may thereby undermine vital conservation work. Close collaboration with local community groups and non-governmental organisations can determine what degree of engagement is appropriate at the local level.

3.3 Contribute to monitoring impact. (IMPORTANT)

The four principles in this document are designed to maximise the benefits of tourism whilst minimising the threat to snow leopards and other biodiversity. Monitoring the impact of tourism is critical, yet information about its environmental and social impact is sorely lacking. Monitoring helps improve our understanding of the effects of tourism and identify what safeguards need to be put in place. Without monitoring, tourism managers cannot assure stakeholders that responsible tourism objectives are being met and respond to public concern.

A range of stakeholders can be involved in the monitoring process. For example, a local committee could be set up to track implementation of guidelines and consider any improvements. Alternatively, tourism operators could usefully support local research institutes who have more specialized training to carry out such monitoring. Funding for monitoring efforts could be a very valuable specific support to conservation efforts.

We recommend the use of ecological or social indicators which are sensitive to the risks posed by tourism. These indicators can provide us with information on how society and the environment react to tourism. The most directly useful indicators may be those that help predict problems. The



identification of early warning indicators provides the ability to anticipate and thereby take action to avoid or minimize serious negative effects. Early warning indicators might include: evidence of stress on water supplies or persistent traces of human presence (e.g., erosion, litter) in sensitive areas. Other useful indicators can track longer term effects on local communities and wildlife such as shifts in employment and decreases in sightings of key species.

Specific attention and priority should be placed on vulnerable communities or geographic areas where exposure to tourism is becoming a major threat. For example areas where local stakeholders have indicated concern or where conditions are changing rapidly.

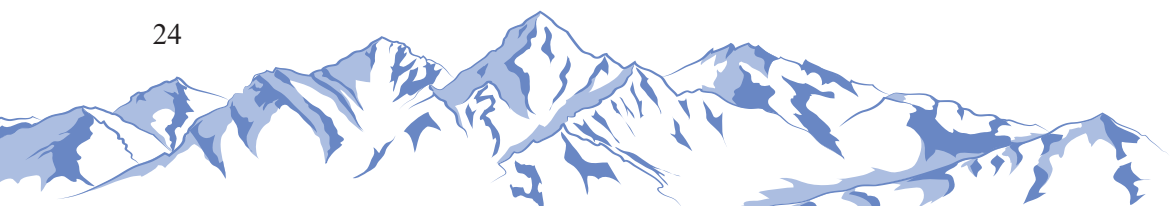
Box 5: Example of indicators

Environmental Indicators

- State of roads and trails used by tourists (erosion, presence of litter, etc)
- Quantity and quality of ground water (i.e., salinity, pollution levels).
- Wildlife sightings. Visitors can be encouraged to record the species and GPS location of key species (such as snow leopards, ungulates, other carnivores and other vulnerable species).

Socio-economic Indicators

- Household income levels
- Local livelihood patterns
- Urban drift patterns



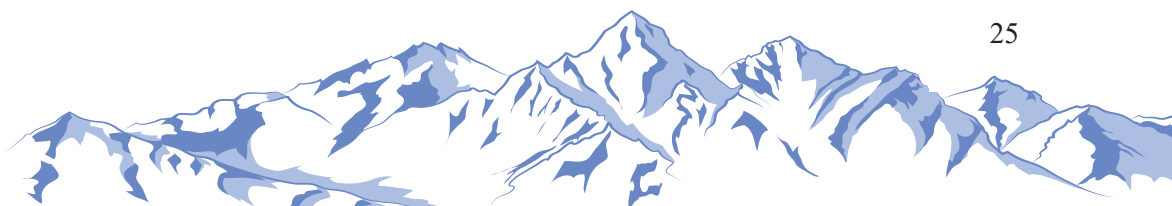
Principle 4: Provide opportunities for benefits at the local level

Generate financial and other benefits for local people.

Recommendations:

4.1 Promote economic opportunities for the community. (VERY IMPORTANT)

Sustainable tourism practices require that the benefits be shared across the community in an equitable way. Failure to achieve this can have long term detrimental effects on conservation efforts and tourism itself, as well as leading to divisions in local society. ShanShui Conservation Center, based at Peking University in Beijing, has developed a small-scale wildlife-watching tourism program in Angsai, Zaduo County, Qinghai Province. Twenty-two families have been selected by the local community as host families, providing accommodation, food, guiding and transportation for tourists. The local government has invested in improving the living conditions, with separate bedrooms and bathroom facilities. The average income per host family is about 1,000 US\$ per year, of which 45% is received by the host family, while 45% goes to the local community in the form of a shared fund. The remaining 10% directly contributes to funding snow leopard conservation efforts in the area. In Angsai, prices for homestays and guiding are fixed, and host families are strictly rotated to ensure that benefits are shared equitably. In this and other settings it is important to ensure that checks and balances are in place to avoid distorting the benefit-sharing model and to ensure standards are being maintained. For example, some homestays may sell or lease their facility to an external operator who can set his or her own terms and limit the sharing of benefits across the community. In addition, incentives and/or some recognition for innovation and improvements can be provided to maintain level of services across the board.



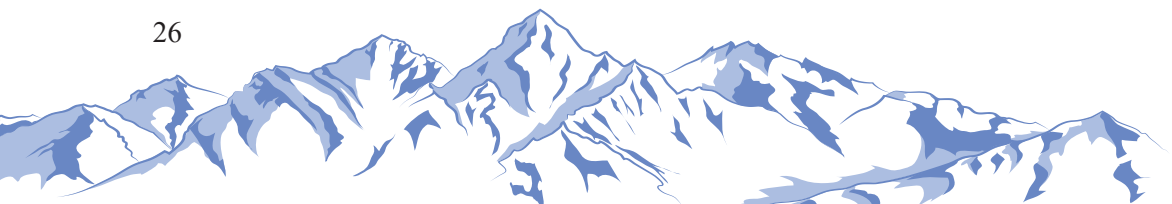
Tourism provides opportunities to local community members for permanent or seasonal employment, e.g. as local guides and drivers. Tourism in snow leopard areas has a strong seasonal dimension which has an uneven and sometimes unreliable impact on income from tourism. Planning for off season engagement and livelihood options becomes extremely important.

Furthermore, ensuring fair wages and just revenue sharing mechanisms can contribute to equity at the local level. Contributing a part of revenues from tourism to a community fund can spark valuable development efforts and share financial and other benefits with members of the community who otherwise might be excluded. Involving community-based organisations e.g. to sell produce and handicrafts to tourists has often proved a good way of spreading benefits within the community (Zapata et al. 2011). Tour operators should ensure that their collaboration does not lead to the further exploitation of vulnerable groups such as women or minorities. Downstream multiplier effects of tourism on other sectors such as local producers (vegetables, fruit etc.), service providers (taxis, mules, porters etc.) and traders need to be seen as part of stimulating the local economy and spreading benefits.

Poorly designed initiatives, on the other hand, can lead to frustration, and/or loss of traditional skills and knowledge, and can inadvertently encourage elite benefit capture. Sensitivity to such possible effects needs to be maintained, especially at times when contracts are renewed or expanded.

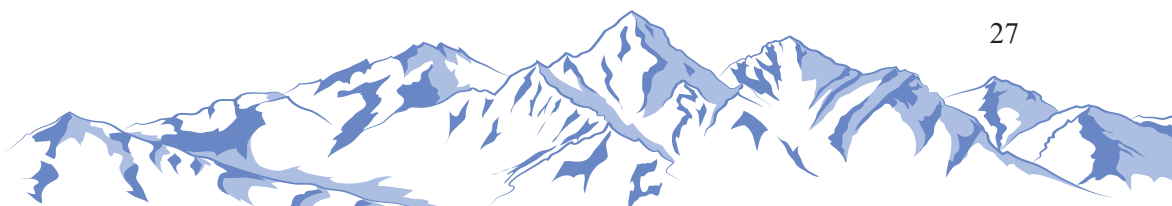
4.2 Enhance the skills of local community members. (VERY IMPORTANT)

While the emphasis should be on supporting traditional skills, building new conservation-related skills in the local community should also be encouraged. Local community members can be trained in a range of skills



and fields such as hospitality, culinary, transport, camera trap operation, computer applications, naturalist skills, data analysis, photography, teaching of local language classes, and as nature guides etc.

Some conservation NGOs have schemes underway to promote the production and marketing of local artisanal products (Agvaantseren et al., 2016). There is a natural link between such enterprises and tourism, as tourists represent a major source of demand for such products. Tourist Operators could support in marketing their local products further up the value chain in urban areas as well as contributing to local sales.



2. CONCLUSION



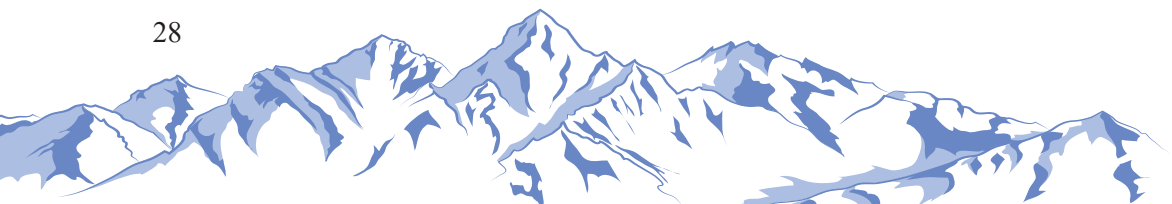
The principles set out above cannot be seen or practiced in isolation either from each other or from wider conservation efforts. There is a hope that tourism can bring benefits to these high mountain areas through economic development, building capacities, contributing to conservation and setting and respecting environmental standards. Tourism within snow leopard habitats could thus serve to create a new positive paradigm of creating awareness and support to conserving high mountain areas at a critical time for the species and its habitats.

Failure to enact the above principles and recommendations, on the other hand, could lead to tourism becoming a threat rather than an opportunity, and the sustainability of tourism sector being compromised.

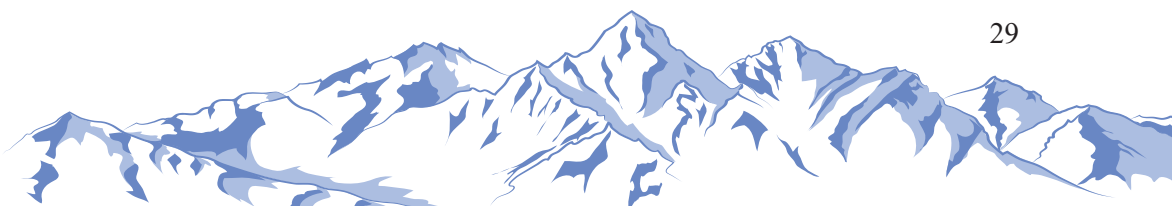
External Resources

Given below are some resources to that discuss the impacts of tourism and ideas to make tourism more sustainable.

- 1) The International Tourism Partnership has created a website with a large range of resources and ideas for sustainable tourism practices: <http://www.greenhotelier.org/>
- 2) <http://www.powerhousegrowers.com/green-hotels-innovation-in-sustainable-operations/>
- 3) The interrelationship between tourism and water: <http://www.globalwaterforum.org/2013/07/16/tourism-and-water-interrelationships-and-management/>
- 4) Ecotourism in India: <http://www.equitabletourism.org/>

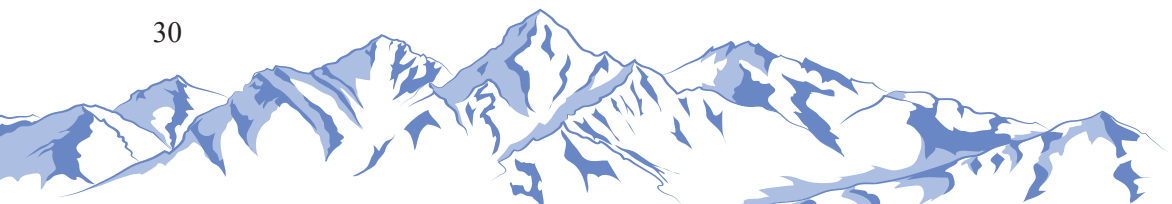


- 5) A UK based organization that explores the role of tourism in human rights violations: <https://www.tourismconcern.org.uk/>
- 6) Water equity and tourism: <http://www.ecotourism.org/news/tourism-concern-water-equity-tourism-human-right-global-responsibility>





- Agvaantseren, B., Allen, P., Dashzeveg, U., Mijiddorj, T. & Snell Rullman, J. (2016) Handicrafts: Snow Leopard Enterprises in Mongolia. In *Snow Leopards: Biodiversity of the world* (eds T. McCarthy & D. Mallon), pp. 169–172. Elsevier.
- Alexander, J., Cusack, J.J., Pengju, C., Shi, K. & Riordan, P. (2015) Conservation of snow leopards: spill over benefits for other carnivores? *Oryx*, 1.
- Chundawat, R. S, Merten, J. Agasti, S. Sharma, K. Raju U. & Matthews, J. (2017) Value of wildlife tourism for conservation and communities: a study around four tiger reserves in Madhya Pradesh (Part-I, Tourism infrastructure and revenue). *Bagh Aap Aur VAN (BAAVAN) and TOFTigers*.
- Forrest, J.L., Wikramanayake, E., Shrestha, R., Areendran, G., Gyeltshen, K., Maheshwari, A., et al. (2012) Conservation and climate change: assessing the vulnerability of snow leopard habitat to treeline shift in the Himalaya. *Biological Conservation*, 150, 129–135. Elsevier Ltd.
- Gössling, S., Peeters, P., Hall, C.M., Dubois, G., Ceron, J.P., Lehmann, L., and Scott, D. (2012), Tourism and water use: supply, demand, and security. An international review, *Tourism Management*, 33(1), 1-15.
- Guedes, J.A.D.A., Crabtree, S.A., Bocinsky, R.K. and Kohler, T.A. (2016). *Twenty-first century Approaches to ancient problems: Climate and society*. *Proceedings of the National Academy of Sciences*, 113(51), pp.14483-14491.



Handa, O., 1994. Tabo Monastery and Buddhism in the Trans-Himalaya: thousand years of existence of the Tabo Chos-Khor. Indus Publishing.

IPCC (2007) Climate change 2007: the physical science basis. Intergovernmental Panel on Climate Change, 446, 727–728.

Lyngdoh, S., Shrotriya, S., Goyal, S.P., Clements, H., Hayward, M.W. & Habib, B. (2014) Prey preferences of the snow leopard (*Panthera uncia*): regional diet specificity holds global significance for conservation. PloS one, 9, e88349. Public Library of Science.

Matthiessen, Peter (1978) The snow leopard. Viking Press.

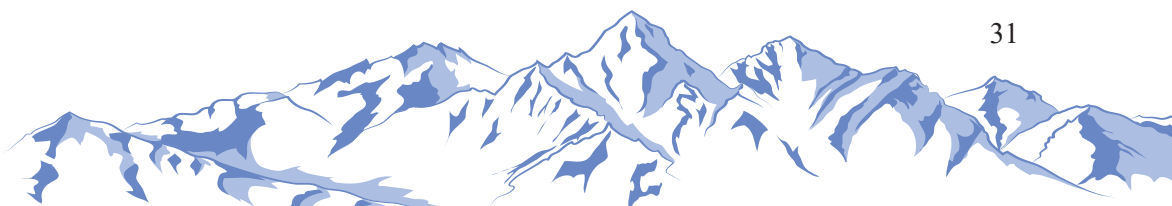
Mallon, D. (2013) Trophy Hunting of CITES-listed species in Central Asia. Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Geneva, Switzerland. pp.48

Murali, R., Redpath, S. and Mishra, C., 2017. The value of ecosystem services in the high altitude Spiti Valley, Indian Trans-Himalaya. Ecosystem Services, 28, pp.115-123.

Nordbø, I., Turdumambetov, B. and Gulcan, B. (2018) Local opinions on trophy hunting in Kyrgyzstan. Journal of Sustainable Tourism, 26(1), pp.68-84.

Pu, Z., Xu, L. & Salomonson, V. V (2007) MODIS/Terra observed seasonal variations of snow cover over the Tibetan Plateau. Geophysical Research Letters, 34. Wiley Online Library.

Kumar, S. and Kumar, V. (2014). Perception of socio-culture impacts of tourism: a sociological review. International Research Journal of Social Sciences, 3(2), pp.40-43.



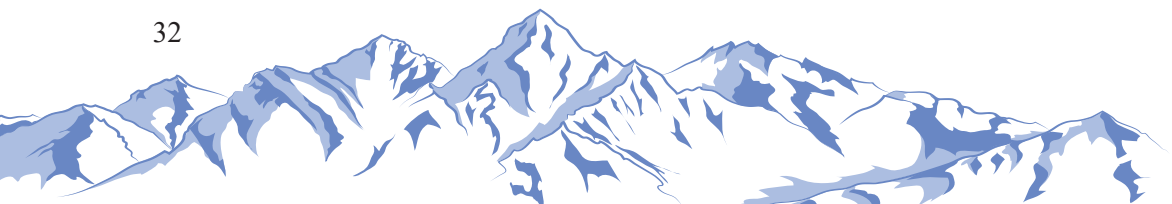
Singh, N. J., and Milner-Gulland, E. J. (2011). Monitoring ungulates in Central Asia: Current constraints and future potentials. *Oryx*, 45, 38–49.

Snow Leopard Network (2014) Snow Leopard Survival Strategy. Seattle, Washington, USA.

The International Ecotourism Society (1990) The International Ecotourism Society (TIES). File: <http://c:/users/user/desktop/iptph 2015 4rr.pdf>. <http://www.ecotourism.org/>.

UNESCO (1999) World water resources at the beginning of the 21st century.

World organisation for animal health (OIE) (2018). The Terrestrial Animal Health Code. 27th Edition. Accessed : <http://www.oie.int/en/standard-setting/terrestrial-code/access-online/>





Suggested citation:

Alexander, J.S., Murali, R., Bijoor, A., Yuhan, L., Mishra, C. 2019. Principles and Recommendations for Tourism within Snow Leopard Habitats. Nature Conservation Foundation, Global Snow Leopard and Ecosystem Protection Program, Snow Leopard Trust. Report submitted to the Global Environment Facility (GEF) funded United Nations Development Program (UNDP) project on Transboundary Cooperation for Snow Leopard and Ecosystem Conservation Pp. 32.