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Wildlife Watching and Tourism:

**A study on the benefits and risks of a fast growing tourism activity and its impacts on species
UNEP/CMS Secretariat, Bonn, Germany. 68 pages.**

Produced by	UNEP/CMS Convention on Migratory Species and TUI
Author	Richard Tapper, Environment Business & Development Group, E-mail: rtapper@dircon.co.uk
Editing & Coordinator	Paola Deda, CMS Secretariat, E-mail: pdeda@cms.int
Publishing Manager	Muriel M. Mannert
Design	Karina Waedt

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UNEP/CMS Secretariat
United Nations Premises in Bonn
Hermann-Ehlers-Str. 10
53113 Bonn, Germany
Tel (+49 228) 815 24 01/02
Fax (+49 228) 815 24 49
E-mail: secretariat@cms.int
www.cms.int

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Image on next page: Monarch butterfly, © Gene Nieminen/USFWS



"We fundamentally depend on natural systems and resources for our existence and development. Our efforts to defeat poverty and pursue sustainable development will be in vain if environmental degradation and natural resource depletion continue unabated."

*Kofi Annan, In Larger Freedom.
Towards Development, Security and Human Rights for All, 2005.*

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I also particularly want to thank Paola Deda, and her assistant Muriel Mannert, at the Convention on Migratory Species for their support and encouragement on this project.

Richard Tapper

FOREWORD BY DR KLAUS TÖPFER, UNEP

It is a sign of the important place wildlife holds for people, that so many want to watch animals in their natural habitats, and that the popularity of wildlife watching tourism continues to grow.

As well as providing enjoyment for millions of people, wildlife watching tourism is a significant source of income and employment for a growing number of communities, particularly in developing countries, and underlines the value of conservation. It also can help raise awareness of a whole range of pressing environmental issues that face us, for the survival of wildlife in its habitats is at risk from climate change, pollution and land conversion, just as we are.

Tourism is one of the areas where the links between people, the global economy, and the environment are clearly visible. The international tourist sees first hand the environmental, social and economic conditions of other countries and cultures. At its best, tourism can be a powerful way to promote understanding between people and cultures. At its worst, tourism can result in the exploitation of people, social disharmony, and environmental degradation.

As tourism continues to grow and expand, more pressures on the environment and wildlife are inevitable. Without proper and effective management and protection, these pressures will destroy the very things that people value, and which are key assets for tourism.

While tourism is expanding, there are limits on how much visitation animal populations can sustain. We must also find ways to control wildlife watching practices so that tourists can enjoy high-quality wildlife watching without damaging the survival of the animals they watch, or their habitats. This means setting firm limits, established through impact assessments, on numbers of tourists, on tourism development, and on the ways in which wildlife watching is conducted so as to minimise the disturbance it causes to wildlife. And it requires action by governments and the tourism industry.

This publication produced by the Convention on Migratory Species shows that action is needed now to put effective controls

in place on wildlife watching tourism. There are many good examples of what can be done to manage wildlife and tourism successfully. However, if tourism is allowed to grow uncontrolled, adequate protection of wildlife and the environment is difficult, if not impossible.

In UNEP we are actively working with partners to promote sustainable tourism through a variety of international and regional programmes. The Parties to the Convention on Biological Diversity have adopted Guidelines on Biodiversity and Tourism Development, and the Caribbean Regional Sea Programme, particularly through its protocol on Specially Protected Areas and Wildlife (SPA) works with the tourism industry to reduce environmental impacts. Many other environmental conventions and agreements also involve work with the tourism industry.

I firmly believe that within a framework of sound planning controls in destination countries, the tourism industry can make a significant contribution towards the achievement of the target set at the World Summit on Sustainable Development for reversing the rate of loss of biodiversity by 2010, as well as to poverty alleviation and community development. So I especially welcome the fact that this publication is a result of a partnership between the CMS and TUI, the world's largest tourism group, a founder member of the Tour Operators' Initiative for Sustainable Tourism Development, and founder member of the CMS Friends - a non-profit association created in support of the Convention on Migratory Species-, which I have the honour to chair.



A handwritten signature in black ink, appearing to read 'Klaus Töpfer'.

*Dr. Klaus Töpfer,
Executive Director of UNEP*

FOREWORD BY ROBERT HEPWORTH, CMS

Wildlife watching activities play a significant and growing part in the tourism industry, and create direct and indirect economic benefits for many countries and communities – especially amongst developing countries. Wildlife watching appeals to a much wider range of people than the more specialist forms of eco-tourism, and opportunities to participate in wildlife watching are increasingly a factor in tourists' holiday choices.

Options to take short wildlife watching excursions – such as whale-watching days trips – are a significant and growing feature of mainstream tourism, and the market for specialist wildlife watching holidays continues to grow. The numbers of visitors who took whale watching tours more than doubled between 1991 and 1998, and they spent over a billion US dollars a year on this activity, benefiting 495 communities around the world from remote destinations to major tourism resorts such as the Canary Islands. But can tourism activities of this type contribute to the conservation of wildlife?

This form of tourism can certainly make important contributions to conservation by raising awareness of the animals observed and their habitats, by creating revenues for conservation, and by creating jobs for local communities.

However, achievement of such contributions is not guaranteed: wildlife watching activities need careful preparation and management by both the tourism sector and conservation managers, in order to avoid adverse effects on wildlife and local communities. Examples of problems that can arise include overcrowding and excessive disturbance, which as well as being damaging to animal populations, also detract from quality of the experience for tourists; and lack of economic benefits for local communities or for conservation.

CMS, in collaboration with TUI, a leading private sector travel firm which sold a total of 18 million holidays in 70 different countries around the world in 2004, decided to explore this tourism niche market, to identify benefits and limits of the activity and set some principles and guidance to the sector, in order to reduce environmental impacts and maximize benefits, both to the communities and the conservation of species.

This publication is very timely, as many of different international forums are claiming that environmental protection is a prerequisite for a healthy community development. CMS wants to make sure the promotion of development is not done at the detriment of the environment, and wishes to explore how, and if, a sector in rapid expansion like nature tourism can affect, in both positive and negative ways, the development of communities in developing and developed countries.

Wildlife watching offers an excellent opportunity to analyze immediate benefits and impacts and produce a sophisticated and honest assessment of pros and cons. I believe this publication is a balanced account of success stories and case studies pointing out limits, risks and adverse effects on wildlife and habitats that need urgent attention. The potential of developing the activity is growing exponentially, and CMS wants to be ready to provide Governments and the tourism sector in general with recommendations on the way forward.

CMS is proud that this publication is the outcome of collaboration with the private sector, as this strengthens the message it contains and shows that it is in the interest of both the United Nations and businesses to promote sustainable activities, producing economic, social and environmental benefits in the long run.



R G Hepworth

*Robert Hepworth,
Executive Secretary of the UNEP
Convention on Migratory Species*

FOREWORD BY DR. MICHAEL IWAND, TUI

Watching animals is an inspiring experience. People are excited by seeing whales or turtles, spectacular bird life, elephants or gorillas. Seeing these and many other species in the wild is not just memorable, but also is a very strong personal motivation for conservation.

Tourism today provides people with numerous opportunities to view animals that in the past they would have only read about and seen in pictures and on TV or in zoos and aquariums at best. TUI and other tourism companies are finding a trend amongst tourists to go beyond traditional 'sun and sand' holidays and to look for more authentic experiences of culture and nature in the places they visit.

TUI is the world's leading tourism group, and we are actively committed to sustainable development for lasting economic growth and employment, sustainable use of natural resources and biodiversity and continuously improving the quality of life for the people. We have therefore deliberately chosen to play a pioneering role for the industry. We see the unique potential of tourism, but also the need for tourism at destinations to be well planned if it is to be sustainable and have a long-term future.

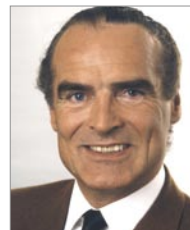
Everyone is aware of the problems of ecosystem loss and species decline. It is vital for destinations to protect their natural assets, not just for tourism, but to prevent the high social and economic costs that result from environmental damage. Tourism can create real value for nature, bringing funds and support for conservation as well as employment. However, to maintain the biodiversity, ecosystems and landscapes that attract tourists to holiday destinations, it is necessary to prevent uncontrolled development.

As this publication shows, the demand for new types of tourism experience in nature is growing fast. Well-planned and effective management is therefore needed to protect wildlife resources in destinations and to ensure that wildlife watching is carried out in ways that do not cause damage to the animals and environments that people want to see. This means that we have to understand the effects of tourism on wildlife better, and to provide better monitoring, visitor management and controls on wildlife watching.

To achieve this requires a partnership between destinations and the tourism industry, who together share responsibilities for making tourism more sustainable. International tour operators can set standards for the holidays they sell, and can work with their suppliers in destination countries to improve performance. At TUI, we already do this, for example, working with local authorities and local conservation organisations to raise the standards of local operators providing whale watching tours in the Canary Islands. When conducting game safaris in East Africa or elsewhere, TUI companies rely on firm conservation principles to support the wildlife and the people.

But for these actions to be effective, there also needs to be a good framework of land use planning in destinations, that shows where and how much tourism can take place and which provides good protection for nature, through networks of protected areas and clear regulations. This framework can best be provided by governments and municipalities in destinations.

On behalf of TUI, I would like to say how pleased we are to be co-producing this publication by the Convention on Migratory Species on wildlife watching and tourism. It shows what can be done to manage wildlife watching well, but also that much more needs to be done to control wildlife watching in the future in order to protect the animals and their habitats on which it depends. TUI looks forward to playing its part in this, and to ensure that wildlife watching, and tourism generally, makes a strong contribution to conservation and community development.



A handwritten signature in black ink that reads "Michael Iwand".

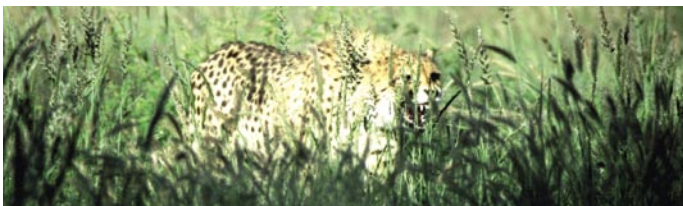
*Wolf Michael Iwand,
Executive Director, Corporate Environmental Management, TUI-AG*

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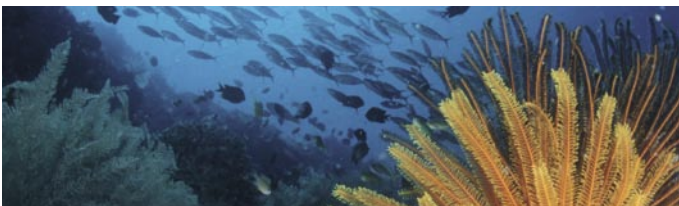
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1 INTRODUCTION

1.1 Definition of wildlife watching tourism

What is wildlife watching and how does it relate to tourism? Wildlife is a general term that technically covers both flora and fauna, although in popular use, wildlife is mostly used to refer to animals in the wild. Perhaps a classic image of wildlife for many people is a large mammal or a flock of wild birds, but the term is widely used to cover all types of animals, including all kinds of insects, and marine life.

Wildlife watching is simply an activity that involves the watching of wildlife. It is normally used to refer to the watching of animals, and this distinguishes wildlife watching from other forms of wildlife-based activities, such as hunting and fishing. Watching wildlife and animals is essentially an observational activity, although in some cases it can involve interactions with the animals being watched, such as touching or feeding them.

Wildlife watching tourism is then tourism that is organised and undertaken in order to watch wildlife. This type of tourism has grown dramatically in recent years, and a quick search on the Internet provides many examples of tourism companies that either market specific wildlife watching tours, or promote their products by highlighting wildlife watching as an optional activity that their clients can enjoy.

The tourism industry tends to use the term 'wildlife tourism' rather than wildlife watching tourism. In many cases, the two terms are identical, but wildlife tourism is sometimes also used to refer to hunting or fishing tourism, and in a few cases to the viewing of captive wildlife in zoos or confined parks where the animals no longer live a wild existence¹.

For the purposes of this publication, the terms wildlife watching tourism and wildlife tourism are used interchangeably, and are defined as tourism that is undertaken to view and / or encounter wildlife in a natural setting. This definition is intended to include wildlife watching on large game ranches – such as those in southern Africa – where species are able to roam widely over

relatively large ranges, and where their behaviour and management is essentially wild, but to exclude animals kept in confined conditions.

1.2 Relationship of wildlife watching tourism to other types of tourism

Wildlife watching tourism overlaps with many other aspects of tourism. Sometimes wildlife watching may be undertaken by tourists who have purchased a specialist package – such as a birdwatching holiday – with the specific objective of seeing certain kinds of wildlife. Equally, there are tourists who engage in wildlife watching as part of activities that focus on adventure in wild places, and for whom watching animals is an added attraction but not necessarily their main motivation.

Wildlife watching particularly overlaps with ecotourism, which is a form of tourism based on the principles² of making an active contribution to the conservation of natural and cultural heritage; involving local and indigenous communities in its planning development and operation, and contributing to their well-being; and interpreting natural and cultural heritage to visitors. Ecotourism is often based on relatively low levels of tourism in an area, and is therefore particularly suited to organised tours for small groups, and also for independent travellers.

Wildlife watching can also include appropriately operated mass tourism activities. One example is the 'Penguin Parade' on Phillip Island, close to Melbourne in Australia, where over 425,000 visitors a year watch Little Penguins come up the beach each evening to their nesting sites on the island.

Ultimately, wildlife watching has links with a wide range of different types of tourism, and tourists participate in this activity for many different reasons. Furthermore, tourism is highly dynamic, and recent years have seen a blurring between various types of tourism. For example, a family taking a typical mass tourism package holiday to a beach resort may find and engage in a whole

range of different wildlife watching activities from whale watching to a trip to see glow-worms. Perhaps their main motivation for taking a trip is entertainment – but at the end of a well-organised animal watching trip, they may not only have had fun and excitement, but will have learned a lot about the animals they have seen, and are likely to return with a stronger commitment to conservation. In addition, the money they pay for their trip will contribute to the local economy, and to jobs and businesses that depend on conservation for their survival.

Finally, like all forms of tourism, it is important that wildlife watching tourism should be sustainable, and should protect the wildlife, habitats and communities on which it depends. Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable tourism is tourism that puts the principles of sustainable development into practice in tourism. To be sustainable, tourism needs to make a positive contribution to the natural and cultural environment, generate benefits for the host communities, and not put at risk the future livelihood of local people; and to strive to anticipate and prevent economic, environmental, social and cultural degradation³.

Wildlife watching tourism, too, needs to integrate considerations of sustainable development into the way in which it is operated and managed, and various organizations – including international environmental conventions⁴, tourism businesses (for example through the Tour Operators' Initiative for Sustainable Tourism Development⁵), government agencies, and non-governmental organizations – are working to help make this a reality.

The UN World Tourism Organisation's Definition of Sustainable Tourism

Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability.

Thus, sustainable tourism should:

- 1) Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
- 2) Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
- 3) Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary.

Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them.

UNWTO (2004)

1.3 Tourism and increasing wildlife watching

The growth of tourism and travel over the past two decades has been enormous. From 441 million international tourist arrivals in 1990, there were 763 million international tourist arrivals in 2004, with 52% of these being for recreational and leisure tourism⁶. This growth is set to continue with an estimated 1.6 billion international tourist arrivals in 2020⁷. In addition, domestic tourism has also increased around the world as increasing numbers of people have more money to spend and more time to participate in tourism. Measuring domestic tourism is difficult, but it is estimated to be about ten times the scale of international tourism, and is likely to have risen faster than international tourism arrivals in recent years.

Wildlife watching tourism shows equally large growth. This can be seen in the number of different types of wildlife watching activities that have been developed linked to commercial tourism, the numbers of tourism businesses that offer these activities, and the numbers of tourists that engage in them. More and more tourism agents and operators are emphasising that tourism needs to be sustainable, and are developing and marketing tourism products that are 'wildlife-friendly', as well as carbon-neutral, and which ensure that a fair share of tourist income goes to local people.

In some places, such as East Africa, the Seychelles or the Galapagos islands, wildlife has been the foundation on which their tourism has developed. In others, wildlife watching is a newer attraction that is helping to diversify tourism and to promote community development in remoter areas. One example of this is whale watching: in 1991 around 4 million people watched whales – by 1998 this had risen to 9 million people, and the total expenditures related to whale watching stood at just over a billion US dollars, more than three times the revenues in 1991, and benefited 495 communities around the world⁸. Between 2003 and 2004, one study⁹ found that the number of people watching whales in and around Sydney, Australia doubled, and total expenditure linked to whale watching increased more than four-fold.



Tuareg in West Africa, © John Newby/SSIG



Dorcas gazelles (Gazella dorcas) in Niger, © John Newby/SSIG



Greater flamingo (*Phoenicopterus ruber*),
© UNEP/Still Pictures



Bird watchers, © UNEP/AEWA.

The overall growth of wildlife watching tourism is likely to continue at least in line with the growth rate of international tourism. However, in some areas, growth of wildlife watching may be much greater – as for whale watching in Sydney. This growth derives from various factors including the long-term interest that many people have in wildlife, the affluence and longevity of people in industrialised countries that enables them to travel to enjoy their interests in wildlife once they have retired, and the general desire amongst tourists to seek new experiences through tourism. The tourism industry is highly responsive to market demand, and is likely to continue to develop tourism products to meet consumer interests in wildlife.

There is also evidence for a number of trends in international wildlife tourism¹⁰, including increased involvement by the commercial tourism sector, a diversification of wildlife watching opportunities which are adding a wider range of environments, species and types of activity, increased environmental awareness, and increased use of interpretation.

1.4 The range of wildlife watching activities

What interests people in wildlife? What sorts of species attract most public attention? People's interests in wildlife are hugely varied, from scientific study to entertainment value, and may change over time. Key factors in wildlife watching tourism are being able to experience animals in the wild, to observe their 'natural' behaviour (although this may be affected by tourism activities), and to appreciate their beauty. Public attention inevitably tends to focus on species that are more easily observed – parti-

cularly larger species, that show dramatic behaviours – such as predators, or that are symbolic, rare or exotic¹¹. However, good guiding and interpretation can make any species interesting to the public, and for tourists these aspects often form an important and memorable part of their wildlife watching experiences.

Species that are watched include not just mammals and birds, but corals, fish, reptiles and insects. Table 1 shows examples from the range of species that are associated with wildlife watching.

Table 1: Range of wildlife watching tourism: Some examples*

Main type of animals being watched	Tourism activity	Example of location
Butterflies	Butterfly viewing	Monarch butterflies in Mexico, USA and Canada
Glow worms	Glow worm viewing	Springbrook National Park, Australia
Crabs	Red crab migration	Christmas Island, Indian Ocean
Corals and fish	Snorkel / scuba diving	Bunaken, Indonesia; Sian Ka'an, Mexico; Soufriere Marine Management Area, St. Lucia; Bonaire, Caribbean; Red Sea, Egypt
Sharks	Snorkel with whale sharks	Seychelles; Ningaloo Reef, Australia
Sharks	Underwater viewing / feeding of sharks	Dyer Island, South Africa
Stingrays	Feeding and close interaction with stingrays	Cayman Islands; Maldives; Australia
Komodo dragons (large reptiles)	Observing Komodo dragons	Komodo Island, Indonesia
Snakes	Observing pythons	Bharatpur, India

Table 1: Range of wildlife watching tourism: Some examples (cont.)

Main type of animals being watched	Tourism activity	Example of location
Crocodiles	Observing crocodiles	Black River, Jamaica; Kakadu National Park, Australia
Turtles	Observing turtles	Projeto TAMAR-IBAMA, Brazil; Akumal, Mexico; Cape Verde; Maputaland, South Africa; Sri Lanka; Indonesia
Birds	Independent or organised visits to reserves for birdwatching	Bempton Cliffs, UK; Keoladeo, India; Pantanal, Brazil
Albatrosses	Independent travellers and coach tours to see breeding albatross colony	Taiaroa Head, New Zealand
Cranes	Observing sand cranes	Müritz National Park, Germany; Platte River, USA
Penguins	Observing penguins and penguin colonies	Antarctica; Península Valdés, Argentina; Phillip Island, Australia
Large African mammals	Vehicle safaris to see large concentrations of mammals	Serengeti National Park, Tanzania; Masai Mara, Kenya
Tigers	Tiger viewing from hides or elephant back	Chitwan National Park, Nepal
Gorillas	Mountain trek and camping in order to observe habituated gorillas	Bwindi National Park, Uganda; Virunga National Park, Democratic Republic of Congo; Volcanoes National Park, Rwanda;
Orangutans	Observing orangutans	Sepilok Orangutan Centre, & Danum Valley, Sabah Semenggok Wildlife Centre, Sarawak, Borneo
Polar bears	Observing polar bears	Churchill, Canada
Bats	Observing bats	Texas, United States
Dolphins	Observing dolphins	Red Sea, Egypt; Mon Repos, Australia
Whales	Observing whales	Península Valdés, Argentina; Kaikoura, New Zealand; El Vizcaino, Baja California, Mexico; Plettenberg Bay, South Africa; Canary Islands

* Based on Table 1.1 in *Wildlife Tourism*, (2004), David Newsome, Ross Dowling and Susan Moore, *Aspects of Tourism* no. 24, published by Channel View Publications. With additions.

1.5 The demand for wildlife watching tourism: market size and main market groups

The tourism sector meets the demand for tourism in a range of market segments. The main segments are the general package-holiday/high volume tourism market, the specialist tourism market, and the independent travel market. Each of these segments operates in slightly different ways, and has different implications for wildlife watching tourism. Because wildlife watching covers a wide range of different species in different locations – some of which are easy to access, while others are difficult and costly to get to – the profiles of tourists engaging in wildlife watching depend very much on the type of activity and its location.

One way of looking at the main market groups for wildlife watching is to consider the typology of international tourists that visit protected areas (Table 2). Numbers of tourists are growing in all these categories. Key factors in the typology are available budget, experience of traveling, requirement for comfort, preference for traveling alone or in large or small groups, and degree of interest in local culture and nature.

This typology, coupled with trends in the tourism market, has several implications for wildlife watching tourism, and its potential to contribute to conservation and community development:

- Firstly, the general expansion of tourism in all categories means that there will be at least a similar increase in wildlife tourism activities linked to each of these categories. This will not just affect areas where wildlife watching tourism is already operating, but will extend to remote areas, as some tourists in the explorer and specialist categories seek new wildlife watching experiences. Careful planning will therefore be vital in order to maintain the quality of wildlife watching, to avoid damage to the populations of animals that are watched, and to keep wildlife watching away from areas that are particularly vulnerable or sensitive for wildlife.



Humpback whale (Megaptera novaeangliae), © Bill Rossiter /WDCS

- Secondly, like other tourism activities, wildlife watching tourism will only succeed where it is compatible with market demand in terms of quality, price and type of activities that are offered. This means that wildlife watching activities need to be planned so that they will appeal to the main types of tourist that predominate in any area, and based on a realistic assessment of market demand.
- Thirdly, well-planned tourism based on wildlife watching can offer significant opportunities to contribute to community development and to raise revenues and support for wildlife conservation.

Table 2: Typology of international tourists that visit protected areas

Type of tourist	Main features
Explorer	Individualistic, solitary, adventurous, requires no special facilities. May be relatively well-off, but prefers not to spend much money. Rejects purpose-built tourism facilities in favour of local ones.
Backpacker	Travels for as long as possible on limited budget, often taking a year off between school/university and starting work. Hardship of local transport, cheap accommodation, etc. may qualify as travel experience, rather than understanding local culture. Enjoys trekking and scenery, but often cannot visit remote areas because of expense. Requires low-cost facilities.
Backpacker Plus	Often experienced travellers, and generally in well-paid profession. More demanding in terms of facilities than Backpackers and with a higher daily spend. Genuinely desire to learn about culture and nature, and require good information.
High Volume	Often inexperienced at travelling, prefer to travel in large groups, may be wealthy. Enjoy superficial aspects of local culture and natural scenery and wildlife if easy to see. Need good facilities, and will only travel far if the journey is comfortable. Includes cruise ship passengers.
General Interest	May travel as Free Independent Travellers (FITs) on tailor-made itineraries with a tour operator, and often prefer security and company of group tour. Usually have limited time available for holiday. May be relatively wealthy, interested in culture, keen on nature/wildlife when not too hard to see. May be active and enjoy 'soft adventure' such as easy trekking and low-grade white-water rafting. Dislike travelling long distances without points of interest. Need good facilities, although may accept basic conditions for short periods.
Special Interest	Dedicated to a particular hobby, fairly adventurous, prepared to pay to indulge hobby and have others take care of logistics. Travel as FITs or groups. May have little interest in culture. Requires special facilities and services, e.g. dive-boats, bird-guides. Accepts discomfort and long travel where necessary to achieve aims. May have active involvement, e.g. environmental research project. Prefers small groups.

Source: J. Cochrane (2003) in UNEP (2005) *Forging Links Between Protected Areas and the Tourism Sector: How tourism can benefit conservation*, (Authors: Richard Tapper and Janet Cochrane) pp. 13-14, UNEP: Paris (available at www.uneptie.org/tourism)

1.6 Key stakeholders in wildlife watching tourism

Wildlife watching tourism involves many different groups of stakeholders. A stakeholder is any person or group that is involved in or may be affected by an activity. For wildlife watching tourism, stakeholders include indigenous and local communities; wildlife managers in public and private sectors; national and local government; conservation NGOs (especially wildlife societies which have a role in popularising and raising awareness about wildlife and conservation); the tourism sector including tour operators, local operators, excursion providers, and accommodation; and, of course, tourists.

Each group of stakeholders has different interests (Table 3) and responsibilities, and successful tourism in the mid- to long-term depends on matching tourism activities to the role that each group of stakeholders is best able to play, and to the circumstances and benefit of indigenous and local communities, as well as to the market demands of tourists. This can best be done through a participative planning process that involves all relevant local stakeholders, combined with good market research, and is further considered in Chapter 4.



African elephant (Loxodonta africana), © UNEP/Still Pictures

Table 3: Stakeholder groups and their interests in wildlife watching tourism

Stakeholder group	Core areas of interest in wildlife watching tourism
Indigenous and local communities	Protection of their environmental and livelihood assets; minimisation of disruption to their communities and culture; potential to gain benefits through tourism linked to improvement of local services and infrastructure, employment and local business opportunities, and revenue generation
Wildlife managers in public and private sectors; Conservation NGOs	Protection of wildlife habitats, biodiversity and the general environment; potential to generate revenues and greater awareness through tourism to support conservation, and to demonstrate the value of conservation to indigenous and local communities, to government, and to the wider public
National and local government	Economic and development potential of tourism at national, regional and local levels
Tour operators	Potential to develop and market tourism products based on wildlife watching – this depends not just on market demand, but also on local conditions including infrastructure and site accessibility, suitability of accommodation and catering, availability of reliable local business partners to provide on-the-ground services (ground operators and accommodation)
Local operators and excursion providers	Potential to develop and market tourism products based on wildlife watching – this can be done for a mainly local or regional market, but to reach international markets local operators will generally need to build links with an international tour operator based overseas
Accommodation sector	Potential of wildlife watching as an attraction for guests, to increase numbers of visitors and their lengths of stay
Tourists	Interesting wildlife watching activities, memorable experiences, good interpretation and guiding (for some tourists, opportunities to experience the local culture and to have ‘authentic’ interaction with local communities, are also important)

Source: R. Tapper (2005) incorporating additional information from UNEP (2005) *Forging Links Between Protected Areas and the Tourism Sector: How tourism can benefit conservation*, (Authors: Richard Tapper and Janet Cochrane) pp. 13-14, UNEP: Paris (available at www.uneptie.org/tourism)

CASE STUDY: WATCHING CHEETAHS IN

Serengeti National Park is the most popular in Tanzania, and was visited by just over 150,000 people in 2002/03, 60% of whom were international tourists. Total income from tourism fees to visit the park was around USD 5.5 million.

Over 95% of the visitors come to the Serengeti to watch wildlife. Lions are the species that people report that they enjoy watching most, followed by cheetahs, leopards, elephants, giraffe, wildebeest, and hippos. Each of these species has different behaviours and ecological requirements.

Of all the large cats, cheetahs are the most vulnerable to disturbance, because they hunt during the day, need to hunt daily, and are often shy. They are largely non-territorial and are highly mobile animals. Reports suggest that they are now keeping further away from roads in the Serengeti than in the past. They capture their prey by stalking - until their prey is within 10-30 metres - before chasing at speeds of up to 100 km per hour. Chases last about 20 seconds, and rarely longer than 1 minute. About half of the chases are successful.

The presence of high numbers of tourist vehicles can disrupt hunting by cheetahs and reduce their overall hunting success - for example, noisy vehicles can alert prey to nearby cheetahs. There are observations of cheetahs being killed on roads by tourist vehicles. In one case in 2003, the cubs of a mother cheetah were scared away from her by 15 vehicles, and were never seen again - probably having been killed by lions or hyenas.

Cheetahs are an endangered species, and exist at relatively low density compared to other carnivores in Africa. The estimated population in the entire Serengeti ecosystem is only around 250 adults, and all losses are serious for the population. To help protect cheetahs, conservation managers are promoting greater awareness amongst tourists of 'cheetah friendly' watching, and are also encouraging tourists to send in photos and reports of cheetah sightings as part of a long-term monitoring programme. Between 2000-2003 a total of 243 contributors sent in information on 377 sightings covering 758 cheetahs in the Serengeti.



Cheetah in a tree (Acinonyx jubatus), © Patricia Tricorache



Tourists watching a cheetah (Acinonyx jubatus), © Cheetah Conservation Fund

SERENGETI NATIONAL PARK, TANZANIA

Because of the high levels of tourism, animals in the areas of the park visited by tourists can be subject to acute disturbance. The size of the park makes it difficult for rangers to ensure that vehicles are complying with the park's viewing regulations, and so the park is tackling this problem by setting up clear and enforceable guidelines, communicating these to tourists, and by promoting development of a national driver/guide accreditation system for all of Tanzania's parks.

A central part of the Park's management of tourism is a Zoning Scheme for the Serengeti, which sets out acceptable types and levels of use and impact in each of three zones, and which also establishes a No-Go Zone where tourism access or use is not permitted. In the Intensive and Low Use Zones game viewing by vehicles is the main visitor activity permitted, with driving restricted to designated roads and tracks. Short guided trail walks are also being developed in these zones, along with 'tourism sinks', which are designated areas where visitors can get out of their vehicles to undertake specific activities, such as picnicking, short

walks, visits to cultural sites, and viewing water-birds.

No game viewing by vehicles is permitted in the Wilderness Zone, with visitor use being restricted to walking safaris of at least 2 days duration for small groups with a maximum of 8 visitors per group. Visitors will camp at designated campsite locations during these safaris.

Throughout the park, the only new accommodation permitted is permanent or non-permanent tented sites. No further development of permanent lodges is allowed, and existing lodges can only expand their bed capacity if this is matched by an equivalent expansion of facilities, including 'tourist sinks.'

The combination of zoning, development of 'tourist sinks', guided trail walks and walking safaris is being used to diversify the visitor experiences available within the park, making it able to manage an increased number of visitors and to minimize overuse of existing tourism attractions by spreading tourism activities more widely in the Intensive Use Zone. This combination is also



Cheetah in the field (Acinonyx jubatus), © Patricia Tricorache

important for managing tourism around cheetahs. The threat of crowding by viewing vehicles is reduced in the intensive and low-use zones by prevention of off-road driving, and the wilderness and no-go zones provide areas of minimal disturbance for cheetahs.

Sources:

- Sarah Durant, Zoological Society of London, Wildlife Conservation Society, and Tanzania Wildlife Research Institute
- John Shemkunde, M.Sc. Thesis, 2004 University of Wales
- SENAPA Tourism management and development strategy
- The Cheetah Watch Campaign run by the Tanzania Carnivore Project at the Tanzania Wildlife Research Institute. This project is funded principally by the British Government through their Darwin Initiative scheme, but also gets support and funding from the Wildlife Conservation Society (WCS) and the Zoological Society of London (ZSL).
- The Serengeti Cheetah Project

CASE STUDY: STINGRAYS AT THE SAND BAR AND

The Sand Bar and Stingray City are one of the Cayman Islands major tourist attractions, and feature extensively in the Islands marketing. Located in the shallow waters of North Sound in Grand Cayman, the two sites offer shallow water snorkeling and diving amongst stingrays.

One of the features of trips to swim with the stingrays is the opportunity to touch and feed these animals, which now congregate at both sites: generally at least 50 stingrays can be seen at the Sand Bar, and 30 at Stingray City.

It is estimated that in recent years around 900,000 visits a year – over 780,000 of these by cruise passengers – are made to the Sand Bar and Stingray City, with nearly half of all visitors to the Cayman Islands taking a trip. The Sand Bar is only 60 cm deep in some places – shallow enough for snorkellers to be able to touch stingrays resting on the bottom. Stingray City is deeper – between 3 – 5 metres – and visited by recreational scuba divers.

The huge attraction of the stingray experience to tourists is important for the Cayman

Islands economy, around a quarter of which is based on tourism, but also raises concerns about the effects of diving and snorkeling tours on the stingray population.

Stingrays were first came to the Sand Bar and Stingray City to feed on fish wastes thrown overboard by local fishermen, but since 1986 they have been hand fed by dive operators. Although stingrays are normally solitary, they have switched to forming packs of 12-15 individuals, and from night-feeding to feeding during the day, at the two sites. Most of their food now comes from feeding by divers.

As well as these major behavioural changes, a recent study carried out in conjunction with the Department of Environment, has found that these stingrays exhibit higher injury rates, which are caused by boat collisions, higher numbers of parasites on their gills, and higher incidences of open wounds. Blood samples also show that the human-fed stingrays are not receiving the proper balance of essential fatty acids that is critical for disease resistance and immune response.



Stringray (Dasyatis spec.), © www.residence-cayman.com

Although the Cayman Islands have a network of protected areas, marine park and management zones off their coasts, the Sand Bar and Stingray City are outside this network, and therefore not covered by protected area regulations. Because access to the sites is uncontrolled they are also at risk from overcrowding, which

detracts from the tourist experience as well as being likely to increase pressure on the stingrays.

To address these issues, the Cayman Islands Department of Environment set up a process to involve representatives from all the stakeholders – including the Marine Conservation Board,

STINGRAY CITY IN THE CAYMAN ISLANDS

Cayman Islands Tourism Association Watersports Committee, Land and Sea Coop, general public, Department and Ministry of Tourism, as well as the Department of Environment – in discussion of the issues facing these sites, and to formulate an agreement on management of marine tourism.

Through this process, the stakeholders jointly proposed the creation of two Special Management Areas (SMAs) under the Caymans' Marine Conservation Law – one at the Sandbar area, and a second at Stingray City; and that the rules governing these SMAs would become part of the Marine Conservation regulations which would then be enforced by the Department of Environment.

To relieve overcrowding, it was agreed that provided the watersports/tourism industry agrees not to establish stingray interaction sites in any other location in the Cayman Islands, a new stingray feeding site would be set up on smaller and deeper sandbar inside the Sandbar SMA, for use by dive and snorkel boats, and four moorings would be installed.

A set of detailed rules for protection of stingrays during operation of stingray tours was also agreed, including limits of a maximum of 100 people per boat, 20 boats per site, and 1500 people in the water at any time; restrictions on feeding of the stingrays; requirements for installation of holding tanks for all toilet waste on boats, and use of designated anchoring areas; and prohibitions on taking of marine life of any kind, and removal of stingrays from the water. To ensure adequate access to and use of area by residents, commercial activity at the Sand Bar was also limited to the morning and early afternoon.

Issues still to be addressed are the nature and collection mechanisms for a proposed access fee, and the pricing structure for trips to the Sand Bar and Stingray City, particular for trips that are sold on-board cruise ships which charge their passengers approximately USD45.00 – USD60.00 while the local operators who provide the trips receive only around USD20.00 of this. Resolving these issues would improve incomes for dive and snorkel tour operators and provi-

de revenues to contribute to management and conservation actions.

Good communication and the involvement of all the stakeholders has been crucial for reaching agreement on effective management of tourism at the stingray sites that both protects the stingrays and maintains the quality of the experience for tourists into the future.

Sources:

- Gina Ebanks-Petrie, Director, Department of Environment, Cayman Islands Government
- Christina Semeniuk, Resource and Environmental Management, Simon Fraser University, Canada
- Myra Shackley (1998) 'Stingray City' – Managing the impact of underwater tourism in the Cayman Islands, Journal of Sustainable Tourism, Vol. 6, pp. 328 - 338

2 ECONOMIC AND SOCIAL BENEFITS FROM

2.1 Economic value of wildlife watching

Wildlife watching is a valuable asset for many localities: large numbers of people regularly pay significant amounts of money in order to view particular species of animals, and nature in general. For example, around one in five US residents listed birdwatching as one of their recreational activities, and almost 40% travelled away from their homes to view birds, according to a major survey conducted in the US during 2001¹². Overall the direct expenditure of US residents on wildlife watching in the US was around USD 32 billion, including nearly USD 7.5 billion on food, transport and accommodation linked to wildlife watching trips.

One study has estimated that 20% – 40% of all international tourists have an interest in some form of wildlife watching¹³ – ranging from enjoying casual observation of wildlife, to taking short wildlife viewing excursions that are added to a trip undertaken primarily for other purposes, to tourists who spend their entire trips on wildlife watching.

In East Africa, wildlife watching is one of the attractions for international tourists, and the basis for the majority of their national income from tourism: in 2000, Kenya received 943,000 international arrivals which generated international tourism receipts of USD 304 million. For Tanzania the figures were 459,000 arrivals and tourism receipts of USD 739 million, and for Uganda, 151,000 arrivals and receipts of USD 149 million. In total the region received over one and a half million international arrivals and generated more than USD 1 billion in foreign exchange receipts from tourism¹⁴, much of it based on wildlife watching.

Wildlife watching tourism generates income in several ways. These include payments – such as for entrance and permit fees – made by tourists to visit wildlife watching sites, and to the guides, drivers and other staff who may accompany them. In addition, tourists pay for accommodation and other services in order to travel to wildlife watching sites. At a national or regional level, the fact that tourists make visits for wildlife watching also

creates opportunities to interest them in other tourism activities, perhaps to visit other areas of the country to watch different species of wildlife, or to see additional aspects such as a country's heritage and culture. By providing additional opportunities for tourism, tourists can be encouraged to stay longer and spend more money in a country, having initially been attracted to visit in order to view some of its wildlife.

The economic effects of tourism also stimulate other sectors of economy, both through the demand from the tourism sector for products and services from other local sectors – for example, from local agricultural producers – and by increasing household incomes, which are then re-spent on local products and services. As a result, relatively low levels of tourism can provide a significantly greater stimulus for local economic development.

At national level, tourism plays a major role in the economies of a growing number of developing countries, and countries with economies in transition, and in many of these, tourism based on wildlife watching and nature is significant. For example, tourism ranked as one of the top three export sectors for more than three-quarters of all developing countries in 2000, and was the principle export in a third of these countries¹⁵.

Overall, income from wildlife watching tourism can enter a country's economy at a number of different points. A simplified model of the monetary flows associated with tourism and protected areas, which are important centres for wildlife watching, shows how tourist dollars enter the economy through payments made by tourists to tourism-related businesses and to the protected areas (or wildlife watching sites) that they visit, and through taxes levied at national or local level (Figure 1). In some cases, the actual flows may mostly be to tourism businesses and national or local government, but these flows depend on the presence of wildlife and natural environments that are in good condition.

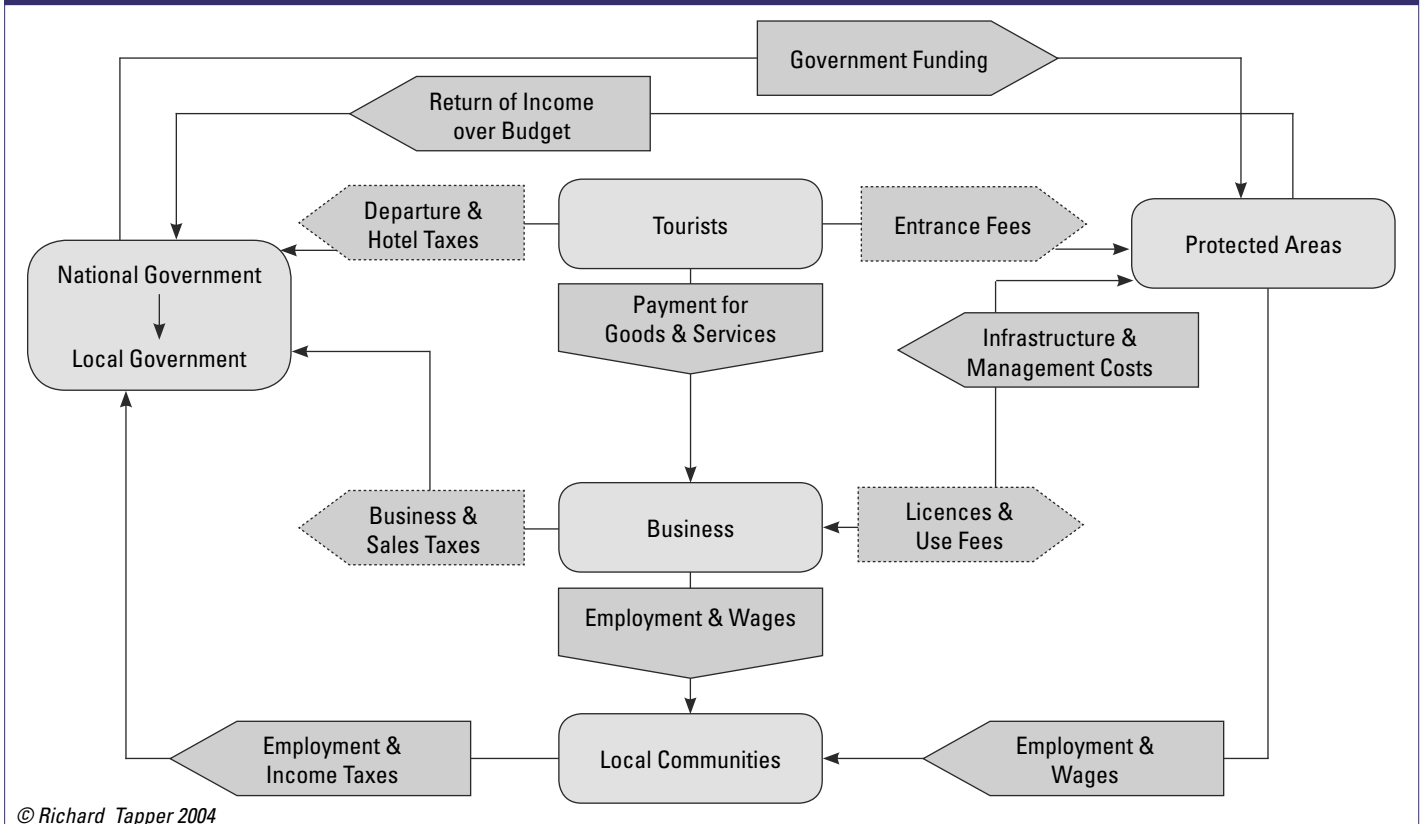
As a part of these flows, it is important that protected areas and wildlife watching sites are properly funded for effective wildlife conservation and tourism management, and that associated local communities also receive support for their development. These funds may be obtained directly by charging tourists for

WILDLIFE WATCHING

wildlife viewing, and where the local community has access to employment in tourism, or is able to establish successful tourism enterprises. In other cases – for example, in places where it is not practical to charge tourists for wildlife watching – it may be necessary to use other mechanisms to ensure that sufficient funds are made available for conservation and wildlife management, and for local community development. For example, Projeto TAMAR in Brazil undertakes turtle protection activities at

many sites on the Brazilian coastline. Tourism based on turtle watching has been developed as an important source of funding for the project and of economic benefits for local communities, but not all sites have the same potential for tourism. To balance this out, a system has been developed in which sites with low tourism potential provide products for sale at those with greater tourism potential, and the revenues from sales of these products are returned to the sites that produced them.

Figure 1: A simplified model of the monetary flows associated with tourism and protected areas¹⁶



© Richard Tapper 2004



*Hawksbill turtle (Eretmochelys imbricata),
© Robert Yin/UNEP/Still Pictures*

It is important to note that most studies of the economic value of wildlife watching tourism are based on direct expenditure by tourists on their wildlife watching trips – which is relatively simple to measure - and do not include the value of other important economic benefits that are generated as a result of direct expenditures on wildlife watching tourism. These benefits include the stimulation of supporting economic activities, promotion of tourism to a country or region, and the value of environmental services that are protected as a result of the incentives that wildlife watching tourism provides for conservation.

Direct expenditure on wildlife tourism therefore provides a minimum estimate for the overall economic value of such tourism. Estimates of the indirect economic effects of wildlife watching generally find that these effects are at least equal to and often exceed the value of direct effects in terms of both income and employment generation. For example, a detailed study of the economic effects of bat viewing in the city of Austin in Texas, found that the overall economic value of visits to view bats was more than twice the direct expenditure on meals, accommodation and transport, that was made by the hundreds of people who visited a popular bat viewing site by a city bridge.

2.2 Potential contributions to poverty reduction and community development

Through the income it generates, wildlife watching tourism provides an incentive to conserve the species that are being watched, and their habitats. Is wildlife watching tourism also able to help reduce poverty and improve the livelihoods of poor communities? How might such a contribution be achieved?

Much of the wildlife that tourists want to watch is located in rural areas. These tend to be poorer than urban areas, and to offer fewer employment opportunities. In these areas, wildlife watching tourism can potentially provide an alternative source of income and employment. Compared to many other sectors, job creation in tourism can require lower capital expenditure, and generates employment particularly for women and young people, as well as providing opportunities for entrepreneurship and development of small firms. Measured in terms of contribution to GNP and numbers of international arrivals, tourism in some of the least developed countries, such as Laos and Vietnam, is growing much faster than in more developed areas, and has become an increasingly important economic development tool for many developing countries. These countries have rich wildlife, and significant proportions of the growth of their international tourism are linked to nature-based and wildlife watching activities.

Country	International Tourism – 1990-2000 Annual average growth rate (%) ¹⁷
Laos	35.9
Vietnam	24.0
South Africa	19.3
Cuba	17.9
Brazil	17.1
Madagascar	11.6
Costa Rica	9.8
Indonesia	8.8
Dominican Republic	8.6
World average	4.4

While increasing international tourism can make important contributions to a country's economy at national level, the UN World Tourism Organisation (UNWTO) has found that seven elements also need to be in place to enable the economic benefits of tourism to reach the poor¹⁸. These are:

- Employment of the poor in tourism enterprises
- Supply of goods and services to tourism enterprises by the poor or by enterprises employing the poor
- Direct sales of goods and services to visitors by the poor (informal economy)
- Establishment and running of tourism enterprises by the poor
- Tax or levy on tourism income or profits with proceeds benefiting the poor
- Voluntary giving/support by tourism enterprises and tourists
- Investment in infrastructure and social services stimulated by tourism also benefiting the poor in the locality, directly or through support to other sectors

These elements are not always easy to put into practice, and where international tourists form the main tourist segment in a country, local enterprises will have to meet international tourists' basic expectations of standards and quality. This can be achieved very successfully in some cases: for example, when the Serena Hotels Group opened four new luxury properties linked with game reserves in Tanzania, it recruited 400 new full time staff from local people few of whom had previous experience of operating to high international hospitality standards¹⁹. Recruitment methods were modified to suit local conditions, and newly-recruited staff given in-depth training before the properties opened. Fish, vegetables and other foods are also purchased locally to provide additional economic benefits to the surrounding communities.

Where local people and producers are able to meet the standards required for employment in and production for enterprises that cater for international tourists, tourism can provide considerable benefits for local economies. However, to meet the demands of the international tourism sector, tourism in developing countries can be dependent on high levels of imports, and often on high levels of foreign investment. In such situations a significant proportion – which can be 50% or more²⁰ – of tourism revenue 'leaks' from their national economies.

Various measures can be used to reduce this leakage, such as by encouraging the tourism sector to replace imports with local purchasing, and working with local producers to raise the quality and quantity of their goods and services in order to meet the requirements of the tourism sector. The private tourism sector can play a major role in shifting towards greater use of local staff and local purchasing, and there are number of examples of good practice, such as the approach used by the Serena Hotels Group in Tanzania.

All forms of tourism, including wildlife watching, can play a positive role in promoting economic and social development, provided that they are environmentally, economically and socially sustainable, and developed in ways that are compatible with the needs and priorities of local communities. At the same time, however, tourism is also a highly dynamic business sector, and tourism in any area will only succeed if there is an actual market demand for it from tourists, and if it is possible for tourism businesses to provide suitable tourism products and packages to satisfy that demand.

Because of this, it is therefore vital to understand the expectations of tourists and trends in tourism markets, as these will determine whether wildlife watching tourism can be developed into a viable and profitable activity, and one with a potential for contributing to poverty alleviation and community development, at any particular site.

In addition to the seven elements that are needed if benefits from tourism are to reach the poor, the UNWTO has also identified a

series of other factors that affect the viability of tourism activities and their relevance – or otherwise – to different communities²¹:

- For communities to be able to benefit from tourism, they need to have the capacity to engage in and take advantage of the new opportunities that tourism can offer, and the tourism that is developed will need to complement and support their other livelihood activities and options.
- For tourism to be viable and profitable, it needs to meet the standards that are expected by the market including in the ways that it is designed, priced and marketed, the reliability and quality of the services and experiences that are offered, and its general attractiveness in relation to competing products that are available at other sites.

The contribution that tourism is able to make to poverty reduction, and also to wildlife conservation, can also change at different stages of the 'tourism cycle'. The tourism cycle is a common and well-defined pattern of tourism development: an initial period of early development with gradual growth in tourism is followed by a period of rapid expansion and growth. In the next stage growth slows and then stops when there are no more possibilities for expansion, and in a final stage tourism may go into a period of decline.

In the early stages of the tourism cycle, development at any locality often includes a large component that draws on locally available resources, requires low capital investment, and has strong links with local communities. At this stage, environmental impacts from tourism can be relatively slight, while benefits for local communities – through employment opportunities and purchases of local goods and services – can be significant for the communities involved. There is a gradual increase in numbers of visitors as tourism in the locality becomes more established and better known.

In response to increasing visitor numbers, a more rapid phase of tourism expansion begins, in which larger tourism accommodation units and facilities – requiring greater levels of capital investment – are constructed. Although these facilities employ



Fishermen in Cape Verde, © M.Marzot/FAO/17098

more people, they also have higher training requirements for staff recruitment and may bring in employees from elsewhere: as a result, employment opportunities may decline for those in the community who are poorest and have only basic education. At the same time, this phase can cause significant environmental impacts, and put increased pressure on wildlife, leading to declines in the quality of the features on which tourism is based. In turn, this leads to a decline in overall income from tourism, although numbers of tourists can still remain high if prices are lowered to attract less affluent tourists.

For example, dolphin watching at Samadai Reef off the Egyptian Red Sea coast was subject to excessive visitation that reduced its quality, and tour prices had to be lowered from around USD



Arabic caravan with little boy, © John Newby/SSIG

60 - 80 per visitor to USD 10, reducing income and encouraging even higher levels of visitation. The Red Sea Marine Parks successfully addressed this problem by instituting the Samadai Service Fee Programme²² charging an access fee of USD 15 per person per day for access to the reef by motor boat and USD 7 per person per day for access by sail boat, and using a ticketing systems to enforce a daily limit of 100 divers and 100 snorkelers at the reef.

In order to ensure that the initial contributions of tourism to poverty reduction and community development are maintained, it is important to manage the expansion of tourism carefully through land use planning controls, by developing plans that are compatible with the needs and wishes of local communities, and keeping development at a slow-enough pace to be able to manage it effectively.

CASE STUDY: SEA TURTLES AND TOURISM IN

Projeto TAMAR protects five species of turtles that are found around Brazil's coasts. Established by the Brazilian government in 1980, it takes its name from the contraction of 'Tartaruga MARinha', the Portuguese name for sea turtle. TAMAR is constituted as a non-governmental organisation affiliated to IBAMA, the Brazilian government's environmental institute, and currently receives sponsorship from the Brazilian parastatal oil company, Petrobras.

Before TAMAR was set up, no sea turtle conservation activities existed in Brazil: although they were listed as endangered species, they were disappearing rapidly, due to fishing, and collection of turtle eggs at their nesting beach sites.

From the start, TAMAR's approach has focused on community involvement in turtle protection and research as the keystone to the turtle conservation programme. It has applied a highly participative approach to draw local people into turtle conservation and the search for economic sustainable alternatives for their communities. Based on this approach, TAMAR has

supported improvements for fishing activities, which increase income to fishermen while protecting turtles, and a range of other livelihood opportunities, including tourism and handicrafts production. These activities are also used to generate funds that contribute to the project's budget.

TAMAR's conservation programme is based on a network of 22 stations along 1,100 km of coastline, as well as on three oceanic islands. The stations are located in the major nesting and feeding areas for sea turtles, and provide direct employment to 1,300 people, at least 80 percent of whom are fishermen and their relatives resident in villages around the stations.

Visitor centres have been opened at the 10 most visited sites, and between them they receive one and a half million visitors each year. The most popular, at Praia do Forte, receives over 500,000 visitors a year, approximately ninety-four per cent of whom are Brazilians; in 2003 this centre generated net revenues of USD 490,000 from sales and admissions, contributing around 17 per



*Green turtle (Chelonia mydas) surfacing to breathe,
© Alejandro Fallabrino*

cent of Projeto TAMAR's annual budget of USD 2.9 million. In addition, visitors to TAMAR stations also create large indirect expenditures in local businesses.

The visitor centres charge an admission fee equivalent to USD 3 per person per visit, and provide a range of displays – including live turtles

rescued from fishing nets, lectures and video exhibitions to raise awareness about turtle conservation, as well as restaurants, bars and gift shops that sell TAMAR products and local crafts. Visitors also have opportunities to go on guided tours and to participate in fieldwork with TAMAR's researchers – including participation in

BRAZIL

night-time turtle hatchling tours, for a fee of USD 35, during the nesting period, guided by TAMAR biologists who provide interpretation on the turtles and on their research.

TAMAR has active programmes to train people for employment in tourism and through this to promote social inclusion. One of these, the Mini Guides Programme, annually trains around 60 local youngsters aged ten to fifteen years old, in basic aspects of sea turtle biology and marine conservation, as well as providing them with skills to interact with tourists. The mini guides also receive stipends that enable them to continue their studies at school, and regular school attendance is a condition for their participation in the Mini Guides Programme. When trained, the mini guides become part of TAMAR's staff and work at visitor centers, where they lead tourist groups and gain further experience in conservation activities.

At several stations, TAMAR also offers training – such as free surfing courses – to community members to help improve their prospects for employment in tourism.

Tourism is only feasible as an income generating activity at some of TAMAR's stations. To enable communities in localities with low tourism potential to benefit from the high levels of tourism that occur at other sites, TAMAR has developed a 'social production chain' in which the stations with low tourism potential produce products for sale at sites with visitor centers. In 2003 the social production chain resulted in net sales that totaled USD 1.47 million, providing income for families at sites with low tourism potential, and revenue to fund conservation activities.

In addition to its community-based conservation activities, TAMAR has a major research programme on sea turtles in Brazil, including tagging for mark-and-recapture monitoring of turtle movements and population biology. Research results produced by TAMAR, and through partnerships with the national and international scientific community, are presented at specialist meetings and published in scientific journals worldwide.

One of the features of TAMAR is the emphasis that it places on self-sufficiency

in coastal communities, and detailed evaluation of the socio-economic as well as conservation results from its programmes, including its tourism components. This focus is maintained by TAMAR's policy for recruiting its staff as far as possible from local village residents.

Today, through TAMAR's efforts, sea turtles, with their widely recognisable image, have become a symbol for many Brazilian people, a flagship for marine conservation and a responsible relationship between people and their environment.

Source:

- Projeto TAMAR website – www.projetotamar.com.br
- Claudia F. Vieitas, Gustavo G. Lopez, and Maria Â. Marcovaldi (1999) Local community involvement in conservation—the use of mini-guides in a programme for sea turtles in Brazil, *Oryx*, Volume 33, p.127
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- Maria Ângela Marcovaldi, Victor Patiri, and João Carlos Thomé (2005) Projeto TAMAR-IBAMA: Twenty-five Years Protecting Brazilian Sea Turtles Through a Community-Based Conservation Programme, *MAST*, 3(2) and 4(1): 39–62.

CASE STUDY: LITTLE PENGUINS IN PHILLIP

Phillip Island Nature Park is Australia's most popular natural wildlife attraction. In 2005, the park received 626,542 paying visitors who came to watch penguins and koalas. Just over half of these visitors came from outside Australia. Admission fees raised A\$6.3 million for the park in 2005, and a further A\$2.5 million was raised from sales of souvenirs, food and beverages.

The park is on part of the traditional lands of the Bunurong Aboriginal people, and was developed to protect one of the last remaining nesting sites for Little Penguins on the coast of the State of Victoria. Over the past century, at least nine other sites have been destroyed by housing and urban development. Establishing a self-financing nature park was the only way to protect the Phillip Island colony from similar development.

The nature park is small – covering just 1805 hectares – and raises all its funds from the three main tourist attractions that it has developed: Penguin Parade – when between 300 to 2000 Little Penguins come ashore each evening to their sand dune

burrows, the Koala Conservation Centre, and Churchill Island. Each of these attractions has achieved the highest level of ecotourism certification that is available from Ecotourism Australia.

To maintain a steady income stream from visitors, marketing of Phillip Island as a tourist attraction is highly professional, and conducted in the same way as for any major commercial attraction. The marketing strategy includes attendance at a number of international tourism fairs, as well as domestic marketing through national media and the Internet, rebranding to maintain and promote a fresh image for the park and its attractions, and national promotion campaigns. The range of attractions is used to encourage tourists to spend 1 – 2 full days on their visits to the nature park.

The large numbers of visitors make it essential to ensure that wildlife watching is well managed. In particular, the Penguin Parade is watched by three-quarters of the visitors to the park under very controlled conditions: most viewing is conducted from fenced boardwalks, or for smaller groups, from an



Little penguins (Eudyptula minor), ©Takver

elevated viewing tower, and rangers provide interpretation about the penguins, their ecology and behaviour. The park also provides closer penguin viewing on a separate beach for groups of up to 10 visitors on a ranger-guided tour. Viewing fees range from A\$17 (USD 12) per person on the boardwalk, and A\$40 (USD 28) for

the tower, to A\$60 (USD 42) for the ranger-guided tour, and provide tourists with a choice of different options and pricing.

As well as funding provision of tourist facilities that include walking tracks, sanitation, interpretation and management programmes, revenues from tourism to

ISLAND NATURE PARK, AUSTRALIA

Phillip Island Nature Park support major research, conservation and environmental initiatives. Overall, the park, which is a not-for-profit organisation, is able to employ a large staff – 149 people in 2005 – to manage tourism and conservation, and to undertake research. Bunurong community representatives are also involved in the delivery of interpretative and education programmes in the Nature Park, and in supervision of some projects.

Conservation management includes revegetation around built infrastructure, propagation of indigenous plant species, control of introduced predator species, such as foxes, which are a significant threat to the Little Penguin population, and a koala breeding programme. The park also carries out a wide range of research on the ecology of Little Penguins, and on other species which currently include Crested Terns and Australian Fur Seals, and its researchers published 39 papers in research journals during 2005.

In order to manage tourism, conservation and research effectively, Phillip Island Nature Park uses a combination of strategic and business

planning. A Nature Park Management Plan is prepared every five years through extensive consultation with stakeholders and the community. This covers environmental management; flora and fauna management; infrastructure and facilities; research and education; visitor experiences; and community relationships. In addition, detailed business plans are prepared annually.

To meet its vision to be a world leader in environmental, economic and socially sustainable nature-based and ecotourism experiences, the park has set goals for effective marketing and provision of high-quality ecotourism experiences, as well as for excellence in conservation and wildlife research.

The Nature Park Management Plan is currently being reviewed and updated for the period to 2010. The Community and Stakeholder Consultation Process for this includes meetings with conservation and heritage groups, local tourism organisations and open community forums, and key State and local Government agencies. The process is overseen by an 8-person multi-stakeholder committee.



Little penguin (Eudyptula minor), ©Takver

The approach of Phillip Island Nature Park shows how excellent product development and marketing has been used to create a wildlife watching experience that is extremely popular, well-controlled to ensure that the high volume of tourism does not have adverse effects on the penguins and other species in the park, well-supported in the local community, and which makes a major contribution to conservation and research.

Sources:

- Phillip Island Nature Parks Annual Report 2004-2005
- Phillip Island Nature Parks website www.penguins.org.au

CASE STUDY: THE MONARCH BUTTERFLY

The Monarch butterflies of Mexico and North America undertake an annual migration from a few overwintering sites in Mexico to breeding sites in United States and as far north as the southern part of Canada. Over successive generations the migrating Monarch butterflies travel as much as 5,000 km, and are a source of interest and enjoyment for millions of people.

Although the butterflies spread out across the North America continent during the spring and summer months - they over winter in Mexico in just a few forest sites. Every autumn, a new generation of Monarchs butterfly leaves its home in the United States and Canada and journeys south to Mexico. This particular generation of Monarchs completes the southern journey to Mexico and spends the winter in protected forested areas. These forest sites are located within the Sierra Madre mountain range, and each site may be no bigger than the size of three football pitches, with as many as 20 million butterflies congregating in each one, where they may stay for more than 100 days. In the spring this over wintering generation of Monarchs

mate, and a new generation is born and undertake their northern migration.

In 1986, the Mexican Government established the Special Biosphere Reserve of the Monarch Butterfly to protect the Monarchs' five main overwintering sites. The protected areas encompass 16,110 hectares of forest in the States of Michoacan and Mexico, in one of the most densely populated areas of the country. These areas are located in, and also help to protect a major watershed that supplies water for two large cities.

Initially only one of these sites was open for tourism, but with increasing numbers of visitors a second site was opened for tourism in 1996. Municipalities also organised Monarch Butterfly Festivals to promote tourism. By 1999, around 250,000 mostly Mexican tourists, visited these sites. The scale of visitation, and its concentration into the period from January to March, when 80% of all visits are made, created a number of economic opportunities for the area – such as establishment of restaurants and a handicrafts trade – but also created



Monarch butterflies (Danaus plexippus),
© Allen Montgomery/USFWS

problems for planning and waste management.

In 1997, the Monarch Butterfly Model Forest project was established by the Mexican Ministry of Environment and Natural Resources (SEMARNAT) and the International Model Forest Network, with joint funding from the Mexican and Canadian Governments. With the assistance

of the Manitoba Model Forest in Canada, the project has now successfully established an ecotourism infrastructure in four Monarch butterfly visitor centres, promoted the protection of the Monarch butterfly in recreation centres, and implemented tourism management practices for two Monarch butterfly sanctuaries.

MODEL FOREST IN MEXICO

The Special Biosphere Reserve of the Monarch Butterfly is located in one of the most densely populated regions of Mexico. In order to protect the Monarch sites, and to promote community development and protection of forests and environmental resources throughout the region, the Monarch Butterfly Model Forest project has focused on creating a range of solutions to livelihoods and income-generation for the people throughout an area of 300 x 250 km.

With the support of the Manitoba Model Forest, the project has undertaken reforestation of areas of critical Monarch Butterfly overwintering habitat within and nearby two protected Monarch Butterfly Sanctuaries, and has provided training in ecotourism for local people. Canadian experts have been brought in to advise on forest management and tree nursery management, environmental assessment, trail design and ecotourism.

The Monarch Butterfly Model Forest is working to improve and utilize the existing infrastructure in the sanctuary areas for Monarchs that are already open to the public, and to diversify tou-

rism based on other natural and cultural features of the region (examples include scenic driving tours, archeology, colonial history, rural farm tourism, birdwatching, hiking, and kayaking). This will help to spread visitors through the region, reducing pressure on the Monarchs' overwintering sites, enabling more communities to benefit from tourism and for longer periods of every year.

The Model Forest region's communities are being involved in all aspects of the project, and participate in the decisions, development, evaluation, follow up processes, and execution of all proposed activities. Community members are also involved in specific tourism roles such as interpretive guides, nature guards, and administrators in the sales of artcrafts, as well as being employed in the construction and reconditioning of the local infrastructure.

Threats to the Monarchs include logging in Mexico and destruction of milkweed – the plant that is the Monarchs' major food source on which they lay their eggs – in their breeding grounds in the United States and Canada. Their survival depends on



Monarch butterflies in a tree (Danaus plexippus), © Milton Friend/USFWS

the cooperation of all three countries in North America. The cooperation between Mexico and Canada on the Monarch Butterfly Model Forest shows the importance of an integrated approach that addresses not just the specific conservation issues at individual sites, but also overall social and economic factors in surrounding communities.

Sources:

- J. Trent Hreno. Chair, International Committee, Manitoba Model Forest Inc.

- Manitoba Model Forest Inc. 2004 Annual Report
- Planeta.com
- Joseph M. Keszi, Ecotourism Development in Mexico's Monarch Butterfly Model Forest Region (Bosque Modelo Mariposa Monarca):1998 Exploratory Trip Findings, Summary Report prepared for Manitoba Model Forest

CASE STUDY: BRACKEN CAVE & CONGRESS

The Congress Avenue Bridge is home to the largest urban bat colony in the United States. Located in Austin, Texas, it supports approximately 1.5 million Mexican free-tailed bats (*Tadarida brasiliensis*), which emerge as a spectacular flock during the evening to feed. The bats inhabit the underside of the bridge from March through November, and migrate south during the winter months. Each summer evening, they consume approximately 14,000 kilograms of insects including countless pests.

The colony's emergences have become a tourist attraction for city residents, who make up a third of bat watching visitors, and tourists to the city. Each evening, the bats are viewed by between 200 – 1500 people from a bat viewing area, which includes a series of information panels on bats and their ecology and behaviour that has been established on a grassy hill beside the bridge.

No charge is made to view the bats, but the economic benefits for the local area are significant. A survey conducted for Bat Conservation International (BCI) gathered information from nearly 900

visitors about their expenditures during their bat watching visits using a combination of interviews and survey forms. This information and daily data on visitor numbers at the bat watching site, resulted in the estimate that visitor expenditures directly connected to bat watching visits is in excess of USD 3 million a year.

BCI also own and manage Bracken Bat Cave and Nature Reserve, which was purchased to protect it from housing development. The cave houses a large bat maternity colony of around 20 million Mexican free-tailed bats from March to October – the bats migrate to Mexico during the winter. Like bats in general, this species is threatened by development, and loss of feeding and roosting habitats; large colonies are also at risk from vandalism.

Access to the reserve is restricted to BCI members, who pay an annual subscription of USD 35, invited visitors that include potential donors, students and other civic organizations, and local volunteers who assist with the running of the reserve.

Around 35,000 day visits are made to Bracken Bat Cave each year. Group size and access is managed to minimize disturbance to the bats, and an interpreter accompanies every group of visitors. Facilities for tourism at the site are very basic, but BCI has plans in place to construct an interpretative center which would be opened to public access, and to move viewing further away from the cave entrance than currently permitted, in order to reduce impacts.

Source:

- Andy Moore and Barbara French, Bat Conservation International (BCI)
- Gail R. Ryser and Roxana Popovici (1999) The Fiscal Impact of the Congress Avenue Bridge Bat Colony on the City of Austin, a study for BCI

AVENUE BRIDGE BAT COLONIES, TEXAS, USA



At dusk millions of Mexican free-tailed bats stream out of breeding cave in Texas, © Fred Bruemmer/ Still Pictures

3 CONSERVATION BENEFITS FROM WILDLIFE

Economic expenditures associated with wildlife watching tourism are large. There is therefore a huge potential for some of the revenues generated through wildlife watching tourism to be used to contribute to conservation of the watched species. Tourism businesses also have an incentive to protect the species that they bring tourists to watch.

The Convention on Biological Diversity's Guidelines on Biodiversity and Tourism Development identify a number of potential benefits of tourism for wildlife conservation in protected areas that include:

- Revenue creation for the maintenance of natural resources of the area;
- Contributions to economic and social development, such as:
 - Funding the development of infrastructure and services;
 - Providing jobs;
 - Providing funds for development or maintenance of sustainable practices;
 - Providing alternative and supplementary ways for communities to receive revenue from biological diversity;
 - Generating incomes;
 - Education and empowerment;
 - An entry product that can have direct benefits for developing other related products at the site and regionally;
 - Tourist satisfaction and experience gained at tourist destination.

Examples from around the world show how tourism has been used successfully to help fund conservation activities, and through this, to protect wildlife and habitats that might otherwise have been destroyed or subjected to alternative uses with far



Humpback whale (Megaptera novaeangliae), © WDCCS

greater environmental impacts. For example, conservationists set up crocodile watching safaris on the Black River in Jamaica to protect the crocodile population which was threatened by poaching. Projeto Tamar has successfully promoted the conservation of turtles along the Brazilian coastline, and has helped to improve turtle numbers by protecting hatcheries – introducing more than 600,000 turtle hatchlings to the sea in 2003 alone. Projeto Tamar has achieved this by working with local communities and fishermen to establish alternative employment and income streams based on turtle protection.

In the Annapurna Conservation Area in Nepal, where tourism is an important activity, observations of several deer species have found that they are more abundant in the conservation area than outside it²³. A census of mountain gorillas in the Democratic Republic of Congo (DRC), Rwanda and Uganda, has found that the population is increasing, and that the greatest increase is evident in gorilla groups that are habituated for tourism and regularly visited. In Península Valdés, Argentina, the whale population is

WATCHING

increasing and the high number of mother-calf pairs in nursery grounds there suggest that they are unaffected by current whale watching activities.

In the Galapagos Islands and Bunaken National Marine Park, wildlife watching tourism provides all or most of the annual budget for park management, including the costs of managing tourism. In the Seychelles, whale shark watching is used to raise the funds needed for monitoring and research for whale shark conservation.

In Mexico, conservation of the main overwintering sites for Monarch butterflies, which together cover only a few hundred hectares, has been integrated with a much larger project – the Monarch Butterfly Model Forest – focused on improving livelihoods and income-generation opportunities for people and communities throughout an area of 300 km x 250 km. The project has promoted community development and protection of forests and environmental resources throughout this region, as well as restoring critical Monarch Butterfly overwintering habitat, and providing training in ecotourism for local people.

These examples and others like them, show how tourism, conservation and community development can work together. However, it cannot be assumed that this will always be the case. Tourism can only be a suitable strategy for making a contribution to conservation in situations where wildlife and associated habitats are sufficiently resilient to withstand the impacts and disturbance that comes from visitation; where visitation and tourism development can be kept within acceptable limits in the long-term; and where it is possible to establish viable tourism businesses.

Many development and conservation projects over the past two decades have incorporated a tourism component with the aims of generating revenues that would contribute to on-going project financing, and providing an alternative source of income and employment for local communities. However, there has been little detailed evaluation of the effectiveness of many of these projects in terms of the on-going viability of tourism activities, and effects on conservation and wildlife. There is often no



Grey seal (Halichoerus grypus), © K.-E. Heers

reliable information gathered on levels of visitation and income from tourism, on the costs associated with the management of wildlife watching tourism at conservation sites – such as providing rangers to oversee visitation, and providing and maintaining visitor facilities, sanitation and waste disposal arrangements – and on the effects of tourism on the watched species and their habitats.

One study of World Bank GEF-related projects, found that a majority of these mention ecotourism as an important source of revenue for the protection and sustainable management of resources, but of the 94 projects that did state this, only 8 carried out any kind of detailed quantitative analysis of the income to be derived from ecotourism.

The study found that while the role of such tourism can be important, it was not always the key or most important source of revenue, and additional income from other sources was often needed. It concluded that given the combination of a stated importance of ecotourism and a limited quantification of its impacts, there is danger that too much will be expected from this source; and that this needs to be avoided by careful assessment of what can be achieved²⁴.

This highlights a need for projects that incorporate wildlife watching elements to prepare business and marketing plans for these elements, in addition to considering the conservation issues.

3.1 Raising revenue for conservation management

For wildlife watching tourism to contribute to conservation at any site it needs to²⁵:

- Cover the costs of:
 - management of tourism to avoid or minimise damage,
 - providing and maintaining appropriate facilities for tourists,
 - raising awareness amongst tourists of the importance of conservation, and of practices and behaviours that assist conservation
 - restoring damage that tourism activities may cause
- Generate additional revenues from tourism that can be used to support general conservation activities
- Demonstrate through tourism the long-term economic value of conservation both nationally and locally by generating tangible benefits for local communities – for example, by generating employment and stimulating private sector activities

Successful wildlife watching tourism may also generate non-monetary benefits that can include valuable political and government support for species conservation, as well as support from local communities and key stakeholders, and public awareness of the significance of wildlife in the national heritage.

A number of economic studies have shown in a range of different contexts that wildlife watching tourism – for example, of whales and dolphins, sharks, or on land, of gorillas – provides much greater real economic returns compared to the value of catching a wide range of species for food or processing. For example, the direct income from tourism at turtle nesting sites is on average at least three times the income that can be obtained from

consumptive uses of turtles, and also generates further indirect expenditures that can be even greater than direct income²⁶.

Projeto TAMAR has used tourism based on turtle watching to create viable livelihood alternatives for coastal communities in Brazil. However, as Projeto TAMAR shows, for this to be possible, local communities have to receive a fair share of income from tourism if they are to be able to switch from livelihoods based on consumptive uses of species such as turtles.

Other studies regularly show that wildlife watching tourists are often willing to pay significantly more than current access fees for wildlife watching, while protected areas which constitute major wildlife watching sites often lack the resources and funds required for effective management. It therefore makes sense to review how to get a better balance between the costs of conservation management and fees charged for access to wildlife watching sites.

The main mechanisms that are used to raise funds from tourism for conservation and for community development are²⁷:

- Entrance fees
- User fees
- Concessions and leases
- Direct operation of commercial activities
- Taxes
- Volunteers and donations

Mostly funding is raised through charging a mix of entrance fees for access to wildlife watching sites, user fees for those undertaking specific activities such as snorkeling or scuba diving, concession and lease fees to allow tour operators to run wildlife watching tours - such as guided walks, vehicle safaris or whale watching boats – at wildlife watching sites. Some sites also operate wildlife watching activities directly and charge for

these – for example, Serengeti National Park in Tanzania is developing a programme of ranger-guided walks, and Phillip Island in Australia provides a range of wildlife watching products with differing levels of interpretation and pricing.

Some conservation sites are also able to raise significant funds for conservation through donations from visitors or from tourism companies, a growing number of which set aside a small proportion of their profits, or make a donation per booking, to support a variety of conservation and/or community development activities²⁸. ‘Volunteer’ tourism where tourists pay to undertake research, monitoring and conservation activities under guidance of qualified staff is also a growing area of tourism, and can make valuable contributions both financially and through the activities that volunteers participate in, to conservation at some sites.

However, it is also important to recognise that implementation of any fundraising or fee system requires investment both in designing the system and gaining support for it from local stakeholders, and in providing training to staff to ensure that it is put into practice effectively. Tourists and tourism businesses are generally supportive of such schemes provided they can see that funds raised are well-managed and accounted for, and are used to make visible improvements for conservation and community development²⁹.

Conservation linked to wildlife watching tourism is also emerging as a preferred commercial option for land use in some environments for both communities and private investors. In southern Africa alone there are reported to be over eleven hundred privately managed nature reserves and more than four hundred private conservancies³⁰. For example, Conservation Corporation Africa has established private reserves for wildlife watching tourism in southern Africa, and has shown that its reserves, which are managed for conservation and tourism, generate larger economic returns per hectare than the alternative use option of cattle ranching. Private reserves also build up their wildlife stocks with animals that are moved from overcrowded sites and which otherwise might have to be culled.

This suggests that in appropriate locations there may also be potential to develop wildlife watching tourism around species reintroduction programmes, such as those for antelopes in Tunisia and other countries of the Sahelo-Saharan region.

Local communities in South Africa are also turning to tourism and conservation as a preferred economic option for management of their lands. One example is Kosi Bay on the edge of Greater St. Lucia Wetland Park. Here the community has entered into a joint venture with a tour operator under an agreement through which the community as land owner also receives additional payments for each visitor-night, gains employment in tourism operations and opportunities to supply goods and services to tourism. This not only secures a sustainable income through tourism-based activities but also preserves their culture and lifestyle and adds a strong awareness and involvement in conservation that draws tourists.

Marine conservation can also benefit from a private sector approach, as at Chumbe Island, an officially designated marine park in Tanzania. The marine park is run by a private company that uses tourism to generate funds for management of the island and its coral reefs, and for research and environmental education. Representatives from nearby fishing villages, as well as university scientists and government officials, participate in management of the island. The project employs local people, and tourism has created the stimulus for protecting the reefs.

These projects clearly demonstrate that with the right approach to marketing and management, wildlife watching tourism can contribute to conservation.

CASE STUDY: BUNAKEN NATIONAL MARINE

Bunaken National Marine Park, established in 1991, encompasses almost 90,000 hectares, including five islands and some of the North Sulawesi mainland. The park has pioneered an innovative co-management approach which is now being used as a model by some other protected areas in the region.

Bunaken has an extremely high level of marine biodiversity, which includes around 70 genera of corals, and 2,500 fish species, making it popular with growing numbers of scuba divers. The park is also home to 30,000 people who live within the park boundary, and whose livelihoods are based on fishing. Effective management of the park therefore depends on balancing its use for fishing and tourism, with requirements for conservation.

The co-management approach ensures that all the interests of all groups who live in or utilise the park are fully taken into account. Park management is overseen by the multistakeholder Bunaken Management Advisory Board (BNPMAB) which was established by the Indonesian government. The 19

seats on the board are allocated to 10 non-governmental and 9 governmental organisations, and include representatives of the 30 villages within the park, the park authority, the Tourism and Fisheries Departments, the local university, and the private tourism sector.

One important outcome of this approach has been replacement of a complicated and ineffective zoning scheme for the park with a much simpler scheme that has been developed through an extensive consultation process, which involved over 50 public meetings, to determine current use patterns in the park and public wishes for future management. The new zoning scheme establishes just three different use zones, each with clearly defined boundaries, and permitted and prohibited activities.

Joint efforts are also underway, involving villagers and local tour dive operators, to restore reefs that have been reduced to rubble by blast fishing. The first two reef restorations were started in 2004 using special 'Ecoreef' modules that were assembled by the villages of Negeri and Alung Banoa, and posi-



Crinoid on hard coral (Comantheria briareus), Bunaken, Sulawesi, Indonesia, © Patricia Jordan/Still Pictures

oned by dive operators from the North Sulawesi Watersports Association (NSWA). With an initial transplantation of corals and natural recruitment of juvenile corals to the modules, the area can be expected to host a thriving coral reef within 3-5 years if well-managed.

The modules were installed in no-take management zones designated by the villa-

gers as sanctuaries for adult coral reef fishes to grow and spawn, and next to a popular dive site. The restoration will help to maintain the quality of diving, and to increase fisheries yields in adjacent areas.

Tourism is an important and growing activity in the park. Just over 39,000 people visited the park in 2003. Around three-quarters of the

PARK, INDONESIA

visitors are domestic day-visitors who come to enjoy Bunaken's beaches, while international visitors come to dive on the reefs. The park charges visitors a user fee of USD 6 for a day ticket, or USD 17 for an annual ticket, to use the park's facilities. Dive tags and tickets are purchased through marine tour operators based in the nearby city of Manado and in the national park, or from ticket booths in the park, and enforcement of the fee system is conducted via spot checks by park rangers on land and at sea.

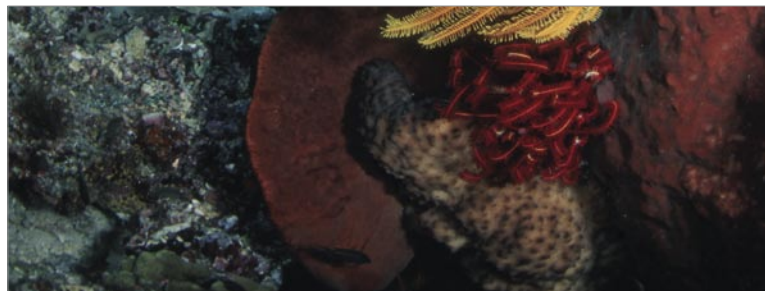
Proceeds from sales of dive tags and tickets are managed by the Bunaken National Park Management Advisory Board (BNPMAB), which uses these funds to finance conservation and development programmes such as village improvement schemes, collection and disposal of plastic and other waste, conservation education of park residents, reef and mangrove rehabilitation, and patrols and law enforcement aimed at ending destructive fishing practices.

The growing popularity of Bunaken is putting pressure on dive sites. In 2003, around

9,000 divers each conducted an average of 15 dives on Bunaken's reefs – a total of 135,000 dives. A recent observational survey found that recreational divers frequently touch or hold onto the reefs – on average 40 times an hour per diver – and also deliberately disturb sediments or fauna during dives. The most heavily dived sites in the park had high levels of dead coral rubble and very high levels of broken corals and coral fragments, consistent with high levels of dive-related impact.

Although there are over 120 dive sites in Bunaken, most diving is concentrated on just a third of these, because of ease of accessibility, manageable currents, suitability for training, and tourist expectations. At these heavily-dived sites, diving by multiple operators occurs on a daily basis, with from three to a maximum of six boats operating at the same time on the busiest days.

Worldwide studies have found that damage is greatest during the first few seasons of diving at a new site, and that once any site receives more than 6,000 dives per year, the level of damage increa-



*Underwater view of the Bunaken, Sulawesi, Indonesia,
© Patricia Jordan/Still Pictures*

ses dramatically. This level is already exceeded at some of Bunaken's dive sites, and there is a need to spread dives between existing dive sites, and improve dive briefings and guide procedures, to reduce overall impacts.

The NSWA has been working to ensure high standards amongst its member dive operators, but with more than 40 dive operators now working in and around Bunaken, not all of whom are members of the NSWA, it is becoming more difficult to use a voluntary approach to ensuring good practices. A new licensing system may therefore need to be designed in order to manage visitation by granting a limited number of dive operator licenses, and setting limits on boat capacity, dive guide to diver ratios, and other appropriate factors.

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- Mark V. Erdmann, North Sulawesi Provincial Advisor, in NRM Headline News, Issue 12, August 2004

CASE STUDY: VIEWING CRANES IN MÜRITZ

Müritz National Park in the north east of Germany is a popular site for tourists and receives about 600,000 visitors each year to enjoy the lakes, forests and bogs of the post-glacial landscape and view a variety of species including white-tailed eagles, ospreys, cranes and red deer. The park covers 32,200 hectares and was established in 1990. Starting with almost zero tourism, national park tourism now generates over € 13 million a year for the region, supporting an estimated 628 full time jobs.

Müritz National Park covers mainly state-owned land, but communal, church and privately-owned land is also included. Most public areas can be freely accessed. The visitor infrastructure includes an extensive system of marked trails, cycle and canoe routes, platforms, hides and towers. Managing the park effectively requires the cooperation of local communities and businesses located in or surrounding the park. The National Park Authority has therefore undertaken a highly participatory process for preparation of the Müritz National Park Plan, which was produced in 2004. This

process has involved the National Parks Association of Local Communities and District Councils, as well as a series of issue-based working groups with local and other relevant stakeholders, and consideration of over 900 written submissions.

The participatory process used to prepare the plan is being continued for its implementation. This provides an important mechanism for integrating conservation with rural development of the region.

The park can be accessed from many sites, and a visitor monitoring scheme has been used since 1999 to identify levels of visitation in different parts of the park, and the main activities of visitors. Detailed visitor surveys are conducted every three years, and sample checks are made annually. This information is then used to improve visitor management across the park.

One example of visitor management has been introduced to control viewing of migrant cranes around Lake Rederang. The park hosts up to 8,000 migrating cranes (*Grus grus*) at any one time



Common crane (*Grus grus*), © Igor Bartashov

during September and October, and also has a small population breeding of about 80 cranes. The cranes rest overnight on the shallow, undisturbed lakeshores within Müritz National Park, where they are safe from predators, and during the day feed on nearby agricultural fields.

Cranes are sensitive to disturbance from visitors – including impacts from noise, flash photography, and bright coloured clothing – and change their pre-resting habits and flight patterns under these conditions. To control visitation and minimize impacts, a ticket and guiding system to view the cranes as they come to their overnight

NATIONAL PARK, GERMANY

resting sites was introduced in 2003.

The 'Crane Ticket' system has been developed as a public-private partnership that involves Müritz National Park Authority and the National Park Service OHG, which is a local tourism company that has contracted guiding and bus services from two more companies. Tickets cost €7 per visitor, and there is a limit of 130 visitors each evening. The ticket price includes the bus transfer from the nearby town of Waren (Müritz). Viewing is conducted in groups of up to 20 visitors, and is confined to two locations. Free access to the resting locations is prevented by partial closure of trails during the evenings. The National Park Rangers control the restrictions and provide one guided tour to each location, and the tourism company provides further guides, who are usually experienced conservationists.

The income from the Crane Ticket is just sufficient to cover the costs of the private services that are involved. Although the income does not directly support conservation in the park, the scheme provides significant non-monetary benefits for

conservation by regulating viewing and minimizing any disturbance to the cranes, by providing a general incentive for tour companies linked to crane conservation, and by enabling the park to promote greater awareness of crane ecology and conservation and the interpretation that it provides.

The Crane Ticket also helps to promote tourism to the region in the lower season. In 2005, a total of 3,100 visitors took advantage of the Crane Ticket in September and October. Some hotels also include Crane Tickets as a special offer for their guests.

Monitoring of the cranes shows that there have been minimal impacts on the cranes since the Crane Ticket was introduced. Besides cranes, visitors can also frequently observe red deer and the rutting of red deer stags, wild boar, white-tailed eagles and other animals in their habitat. Guiding provides good interpretation of the cranes' ecology and migration that creates a high quality visitor experience and also ensures visitor behaviour does not disturb the cranes.



Landscape Müritz National Park, Germany, © Ulrich Meißner.

Source:

- Job et al. (2005): Ökonomische Effekte von Großschutzgebieten, BfN-Skripten 135, Bonn
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- Jens Brüggemann, Assistant Director, Müritz National Park Authority

CASE STUDY: WATCHING WHALE SHARKS IN

The Marine Conservation Society, Seychelles (MCSS) is using whale shark watching tourism as a way of raising funds for its whale shark research programme and of raising awareness about the importance of conserving these animals. Whale sharks migrate over huge distances in the Indian Ocean, and in other ocean basins, and are a protected species in the Seychelles and in the Maldives, the Philippines, India, and Western Australia. They are threatened by boat strikes, since the species generally swims near the ocean surface, and also, in several parts of the Indian Ocean, by illegal fisheries.

Up to 200 whale sharks visit specific coastal areas around Mahe between July to November most years. They appear to be aggregating in these areas to feed on dense zooplankton patches caused by the seasonal upwelling of nutrients caused by the prevailing trade winds. Most specimens are juveniles and are frequently seen feeding at the surface, very few adult specimens have been noted in the 10 years of the MCSS programme.

Whale sharks are plankton feeders and their size – with adults reaching lengths of up to 18 metres – and relative rarity makes them a species of great attraction for recreational divers and other wildlife watching tourists. However, very little is known about the effects of such encounters on the behaviour and ecology of whale sharks.

The sharks do react to the presence of both boats and swimmers in the water near them, usually in a positive manner by coming closer to investigate, however this may lessen their feeding time and an Encounter Code has been developed through a national public workshop to minimize the potential for negative disturbance. The code limits the distance a boat may approach a shark, allows only one boat within a contact zone of 200m around a shark for a maximum of 30 minutes, limits the number of people in the water with a shark to eight, and requires that they keep a minimum distance of 3 metres from the shark, do not touch it or use flash photography.

The Encounter Code has been adopted and is in use by the MCSS on their moni-



*Whale shark (Rhincodon typus) with scuba diver,
© Chris Goodwin/MCSS*

toring and encounter trips, and is awaiting formal legislation by the Government of Seychelles.

On encounter trips, paying visitors are taken to the sharks using boats chartered from local commercial operators so that there is direct income into the local industry. All trips run by the MCSS

start with an overview of the monitoring and encounter programmes, the code of conduct and a general safety briefing. Increasingly visitors are coming specifically to participate in this activity, rather than it being an additional activity chosen opportunistically when visiting; as such there is a substantial influx into the supporting tou-

THE SEYCHELLES



Whale shark (*Rhincodon typus*), © Alan James Photography/MCSS



Whale Shark (*Rhincodon typus*), © Alan James Photography/MCSS

rism industry by the booking of hotels, restaurants, transfers and similar tourism services.

The sole purpose of the current encounter programme is to raise funds for the MCSS monitoring and conservation activities, which include studies on the way in which encounters affect whale sharks. Information is recorded about all encounters including details of duration, the number of people in the water, the behaviour of the whale shark(s) and the reason why the encounter terminated. Aerial observations are also being carried out to record whale shark behaviour in the absence of external disturbances from boats and people.

Stakeholder involvement has been important in establishing the Encounter Code, and developing the MCSS monitoring and encounter programmes for whale sharks. Community involvement is promoted through public workshops, a bi-monthly newsletter that gives regular reports on monitoring activities and sightings of whale sharks, and by regular visits by the MCSS Research Officer to local organisations.

In 2005, 496 tourists participated in whale shark watching, providing a total income of just over USD 35,000, split between USD 14,500 in direct income to boat operators, and USD 20,500 to support the MCSS whale shark monitoring programme. However, the total added value of

tourism from these visitors, including travel and accommodation expenditures, was calculated to amount to nearly USD 1.75 million. Numbers of visitors participating in the whale shark encounter programme are projected to increase to 880 in 2008.

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CASE STUDY: GORILLA WATCHING TOURISM

Gorilla tourism has mostly concentrated on mountain gorillas in Rwanda, Democratic Republic of Congo (DRC) and Uganda, but more recently, the development of tourism linked to lowland gorilla populations in west and central Africa has also been explored. By 2000 four groups of gorillas in Rwanda, three in DRC and three in Uganda were habituated and visited by paying tourists. This represented approximately 70% of the Virunga population. Since then, lowland gorilla groups have been habituated in the Central African Republic, and Republic of Congo.

Gorillas are highly endangered: there are less than 1000 mountain gorillas and 110,000 western lowland gorillas estimated to remain in the wild, and they are subject to threats from logging and land conversion to agriculture, which fragment their forest habitat, and make it easier for poachers to kill gorillas for the bushmeat trade. From a conservation perspective, even though there are risks to gorillas from tourism, these are far less than other threats: it is also argued that without the incentives, revenue and

international attention from tourism, the mountain gorilla population would not have survived.

Currently, tourists pay around USD 350 per person for a permit to watch mountain gorillas, in addition to paying park entrance fees and for their guides. This price ensures that gorilla watching tourism generates significant amounts of revenue, and helps to manage demand from tourists for gorilla watching.

Gorilla watching tourism also leads to expenditures by tourists on accommodation and other services during their visits, and attracts them to travel in countries that they might not otherwise visit. For example, nearly three-quarters of the 8,000 tourists visiting Uganda each year for gorilla watching, also visit other national parks in the country. These indirect expenditures, which are not directly associated with gorilla watching, would not occur in the absence of gorilla watching tourists, and have major economic significance.

Thus gorilla watching is important as much for its indirect economic effects as well



Mountain gorilla (Gorilla gorilla beringei), © Patrick Van Klaveren

as for the revenues that it generates directly. It is also significant in that it promotes protection of the forests which provide the gorillas' habitats, and therefore helps to preserve the valuable ecosystem services provided by the forest, for example, as a water catchment for downstream agricultural areas, and by preventing soil

erosion of the slopes of the Virungas.

The main issues for gorilla conservation and tourism are associated with problems of stress in the habituation process, potential loss of gorillas to human diseases through contact with visitors and guards, and the risks posed to habituated gorilla

IN AFRICA

groups from poachers, guerillas and other armed people in the forests. It is also important to ensure that tourists are protected from any risk of danger to themselves.

These issues can be managed through strict compliance with existing regulations that are designed to minimise negative impacts on gorillas, supported by training courses for guards and guides, and the provision of information leaflets for visitors. Existing regulations for gorilla watching include a maximum group size of 8 tourists, a limit of one tourist visit (for a maximum of 1 hour) to a gorilla group in a single day, no physical contact with the gorillas, and a separation distance of at least 5 metres (7 m is now recommended), no visits by people who are obviously ill, or by children under 15 years, no flash photography, removal of all litter, and no loud noises or talking by the tourist group.

A recent census of mountain gorillas shows a 17% increase in overall numbers between 1989 - 2000, and that the increase is greatest in gorilla groups habituated for

tourism or for research. Tourism means that habituated groups are regularly visited and therefore receive greater protection than non-habituated groups.

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Mountain gorilla (Gorilla gorilla beringei), © Patrick Van Klaveren

4 HOW TO ADDRESS RISKS TO THE SUSTAINABLE

Tourism can provide benefits for conservation, but at the same time may also give rise to a number of adverse effects. These arise both directly from disturbance caused by wildlife watching activities, and indirectly from the construction and operation of tourism facilities, and the general background levels of disturbance from tourism. Such adverse effects can be avoided or minimized, providing that sufficient resources and funds are available for effective management, and that tourism development is subject to proper planning controls and limits. For example, limiting visitor numbers and accompanying visitor groups with trained guides helps to minimise the direct disturbance of wildlife; and walkways can be installed to reduce habitat damage from trampling by visitors in heavily visited areas. Tourism facilities can be planned so that they are situated well away from sensitive areas for wildlife, and overall development kept within clear limits that are established to prevent unacceptable impacts.

Although some species – such as those that thrive in towns and cities – adapt easily to human presence, many are highly sensitive to disturbance. Crane species, for example, will take flight to avoid disturbances such as noise or visitors with bright clothing. Glow-worms have even been observed to reduce the intensity of their glow – which is used to attract the insects on which they feed – if they are caught in torchlight beams used to guide tourists on glow-worm watching tours.

Wildlife watching tourism requires careful planning, management and monitoring if it is to take place without risk to the species that are watched or their habitats, and to bring benefits to local communities. The aim of planning is to establish clear objectives and targets for wildlife watching tourism, which are then implemented through appropriate management actions. Monitoring is used to check whether targets are being met - and if targets are not being met, management actions are adjusted and improved to achieve them in future. This 'adaptive management' approach enables continuous improvements to be made in management actions for conservation, tourism and community benefits, based on lessons learned from day-to-day management experience.



Siberian crane (Grus leucogeranus), © Irina Gavrilova/Oka Crane Breeding Center

Requirements and issues for successful conservation management are generally quite different from those for successful tourism management, or for successful community development, and each involves different expertise. In planning for sustainable wildlife watching tourism, it is therefore important to find those places where the requirements for conservation, tourism and community development are compatible with each other and to recognise that elsewhere wildlife watching tourism is unlikely to be successful and cannot be sustainable.

Three key questions need to be addressed in planning for wildlife watching tourism:

- How can wildlife watching be managed in a way that is compatible with conservation of the watched species and associated habitats?
- Is there a realistic market demand for tourism managed in this way?
- How would the local communities be able to benefit from such tourism?

LITY OF WILDLIFE WATCHING

Answering these questions requires inputs that draw on the expertise of a range of different stakeholders. This can best be obtained by encouraging all the relevant stakeholders to participate in planning and setting objectives for wildlife watching tourism. Involving stakeholders in the planning process can be a powerful way to identify interests that they share, and to generate local commitment to plans, and associated regulations, for wildlife watching.

Participatory approaches to planning wildlife watching tourism are being used widely: successful examples of stakeholder participation include adoption of a voluntary code of conduct for whale watching in Península Valdés, and establishment of no-fishing zones and dive sites as part of the overall zonation of Bunaken National Marine Park.

4.1 Effects of disturbance from tourism on wildlife

Wildlife watching tourism can have adverse effects on wildlife in three main ways – by causing changes in their behaviour, to their physiology, or damage to their habitats. There are also risks associated with both pressures for further tourism expansion that can build up as destinations and attractions become better known and more popular, and from the sharp changes that can occur in levels of visitation to particular sites or regions from year to year, which arise from competition between destinations, changes in the preferences of tourists, and concerns of tourists for their personal security.

Behavioural effects of disturbance

Individuals that are subject to disturbance will spend less time feeding or resting, and more energy on trying to move away from the source of disturbance, perhaps shifting to more remote or less productive feeding grounds: they may also face greater

competition from other species, and be more vulnerable to predation, in these less favoured feeding grounds. Evidence for this has been found in a wide range of species groups, including cetaceans, great apes, and birds. For example, both chimpanzees and dolphins have been observed to feed less, and to be more watchful, when being observed by tourist groups.

Species are often particularly vulnerable to the effects of disturbance during their breeding periods, and during their juvenile stages. Any disruption of courtship and mating behaviours, or later on, of care for offspring, reduces overall breeding success, and therefore is a serious threat to population maintenance and survival. For example, if the cubs of big cats, such as cheetahs or leopards, become separated from their mothers, they are vulnerable to predation. Tourists are often particularly keen to watch mother-offspring groups, and therefore great care is needed to limit and control any tourism around them.

Physiological effects of disturbance

Recent studies have also found physiological changes in animals subject to disturbance through tourism. These changes include alterations to their blood chemistry, such as increases in the levels of stress hormones in their blood, and additional changes in individuals that are regularly fed by humans as part of the tourism experience, such as stingrays at Stingray City and the Sand Bar in the Cayman Islands. The long-term implications of such physiological changes on the survival of individuals and populations are only beginning to be investigated. However, such changes emphasise the need for caution in managing populations that are regularly the subject of wildlife watching activities.

In addition, a few species, such as the great apes, are susceptible to human diseases against which they have little or no immunity. Contact with tourists may therefore increase the risk of disease transmission to the populations of these animals that are being watched.

Habitat damage and disturbance

Wildlife watching tourism can also result in damage to sites and habitats where species are watched. One dramatic example of this is the damage that is commonly reported to coral reefs at sites that are regularly visited by large numbers of recreational divers. Breakages of coral destroy reef organisms, and reduce the habitat available to fish for spawning and feeding. This in turn reduces the abundance of marine life at these sites, and ultimately makes them much less attractive to divers.

In addition, tourism facilities that are primarily used by tourists who come to watch wildlife, and impacts from solid and liquid wastes, can also be a threat to wildlife habitats. For example, international visitors who come to dive around the reefs of Bunaken National Marine Park in Indonesia, mainly use home-stay accommodation. Although the majority of homestays make significant efforts to minimize physical impacts on Bunaken's reefs, most also use septic wastewater and sewage treatment systems and a high proportion of these are located within 50 metres of a beach. Should leakages occur from the systems, the nutrient enrichment of coastal waters would damage nearby reefs.

4.2 Risks from variations in visitation and expansion of tourism

There are further risks that arise from the dynamic nature of tourism itself. Levels of visitation to tourist attractions can be highly variable from year to year, depending on latest consumer preferences, competition from other destinations and attractions, and on perceptions of personal safety in different countries. If wildlife conservation and communities become significantly dependent on income and employment from tourism, then any drop in tourism will have serious social and economic consequences. It is therefore important to develop diversified sources of income for both conservation and communities, and to avoid over-reliance on wildlife watching tourism.

An equally significant risk is the extent to which establishment of even low levels of tourism may activate the 'tourism cycle' and expose areas to a rapid and often poorly planned and uncoordinated expansion of tourism. Such expansion can be both a cause of habitat loss, and increased pressure and disturbance from tourists on wildlife watching areas. For example, part of the Sian Ka'an Biosphere Reserve in Mexico is experiencing significant increases in numbers of day visitors as development of high-volume tourism in the Riviera Maya expands and hotels are built nearer to the Reserve, making access easier. The day visitors, who come to participate in snorkeling and diving on a section of the Meso-American Barrier Reef system, spend relatively little in the Reserve and the local community, but present a major problem for management of wastes and sanitation. Furthermore, the local dive sites are suffering damage from overuse, and the presence of day visitors is making the Reserve less attractive for the low-volume high-value tourism which has been an important source of income for many years. The Reserve is working with local dive operators to improve management of dive sites, but has no power to control the numbers of people who travel into the Reserve as day visitors.

General tourism developments can also be a threat to certain species. For example, coastal tourism development in many parts of the world continues to cause serious impacts and damage to turtle nesting areas on beaches. This underlines the need for effective land use and coastal area planning to protect key wildlife sites from development.

4.3 Managing visitors to minimise impacts on wildlife

Provided watched populations and their habitats have sufficient periods of time in which to recover following each disturbance by tourists, overall effects on population health and reproduction are likely to be low. But as the scale and frequency of tourism to watch a particular population of animals increases, the recovery

periods become shorter and the impacts of disturbance on wildlife can rapidly increase.

Disturbance is damaging to animal populations and their habitats, and reduces the quality of the tourism experience. For example, heavily-visited dive sites on coral reefs often display very high levels of damage to coral, and a reduced number of fish species and other reef organisms. It is therefore vital to plan and manage wildlife watching tourism in ways that minimise impacts on wildlife. Main options for visitation management for wildlife watching are to:

- reduce visitation – by restricting the numbers of tourists allowed into viewing sites at any one time, by increasing fees for visitation, and/or by restricting the times when viewing is allowed – examples of this are the Crane Ticket introduced at Müritz National Park, or the schedules used by the Galapagos National Park to spread visitation over a number of sites
- modify visitation – by altering the way in which wildlife watching is conducted:
 - by briefing visitors on appropriate behaviour while wildlife watching, and by setting up codes of conduct for wildlife watching – For example, regulations for gorilla watching tours require that tourists remain at least 7 metres away from gorillas, and do not make loud noises or take flash photographs. Periods of contact with gorilla groups are limited to a maximum of one hour per day, and all tours are led by registered and trained guides, and limited to a maximum of 8 tourists (6 in Uganda). For whale watching, regulations at most whale watching sites specify a minimum approach distance of 100 metres between whale watching boats and whales at the surface, for a period of 15 minutes. Only one boat can be this close at any time, and one other boat is permitted to wait in an ‘approach zone’ extending 300 metres from the watched whales.
 - by providing trained guides to accompany visitor groups to provide interpretation and supervise wildlife viewing

- by moving viewing sites further away from the animals that are being watched – for example, the WDCS encourages land-based watching wherever possible, in preference to watching whales from boats – or by installing hides to screen tourists from wildlife

- redirect visitation – by developing alternative attractions and infrastructure, such as visitor and interpretation centres, viewing points, and additional wildlife watching sites in less sensitive locations – an example is the Serengeti National Park which is setting up areas where visitors can get out of their vehicles to undertake specific activities, such as short guided walks or viewing water-birds
- prevent visitation – by closing wildlife watching sites and associated infrastructure to protect sensitive areas, or to allow for maintenance and restoration

In some cases, it is also possible to use habituation to increase the ability of some species – such as primates – to tolerate observation by tourist groups.

Many tourism businesses recognise the important role that they have to play in ensuring that their tours are conducted responsibly and minimise adverse impacts on the environment and wildlife. They also recognise the value of visitor management measures designed to maintain healthy populations of the wildlife which their customers come to view, and the need to provide a high quality experience for their visitors by avoiding overcrowding. For example, the North Sulawesi Watersports Association has worked closely with Bunaken National Marine Park on introduction of dive fees, and helps to collect these fees on behalf of the Park. Surveys also reveal that recreational divers and other types of visitor to Bunaken and many others sites have a high willingness to pay for entrance and user fees for wildlife watching, provided that they can see that the revenues raised are being used effectively for local conservation, community development, and tourism management.

Many tour operators that provide specialist wildlife watching holiday packages already provide detailed information on wild-

life watching to their clients, and some tour operators work with hotels and destinations to ensure that their clients understand ways in which they can help to protect important wildlife. Examples are Accor which has developed an information leaflet on prevention of damage to coral reefs which it pioneered with its customers travelling to destinations along the Red Sea, and TUI is seeking to improve the quality of whale watching in many destinations, such as Tenerife and La Gomera, and Samana Bay in the Dominican Republic, and to develop support for whale and dolphin conservation initiatives through tourism.

4.4 Planning approaches for zoning and visitor management

Sites generally incorporate visitor management into a system of zones, that allow different levels of access and use. In Serengeti National Park, the zoning scheme sets out three zones for different types of wildlife watching and levels of use, and also establishes a no-go zone where tourism access or use is not permitted. In the Galapagos, tourism is restricted to 54 terrestrial visitor sites that cover less than 1% of the total land area of the National Park, and 64 marine visitor sites. In Phillip Island, development of tourism facilities has been managed to create an area of the site that accommodates very high annual visitor numbers, while leaving many other sections free from development and accessible only on foot to lower numbers of visitors.

Site zoning is important for balancing different types of tourism use, and non-tourism uses that might otherwise conflict with each other. In many marine sites, establishment of no fishing zones which are used for recreational diving and snorkelling has been important for preventing conflicts between tourism and fishing, and has also contributed to an increase in fish stocks and catches by providing fish with protected areas for spawning and growth. Examples include Bunaken National Marine Park in Indonesia, and the Soufriere Marine Management Area in St. Lucia.

Zoning and measures to minimise disturbance to wildlife are most effective if they are introduced through the cooperation between wildlife conservation managers and tourism providers. The Müritz Crane Ticket and the Galapagos schedules for site visits by tourist boats both require coordination between tourism enterprises and the relevant park authorities. So does the provision of briefings to visitors, compliance with wildlife watching regulations, or relocation of viewing sites.

Stakeholder participation in planning for wildlife watching tourism can take place through meetings, workshops, and consultations, and in some cases, as at Bunaken, may also involve establishment of a multi-stakeholder advisory group with designated responsibilities for overseeing all aspects of resource conservation and management.

Stakeholder participation can also be integrated with planning methodologies such as the Limits of Acceptable Change (LAC) and Recreation Opportunity Spectrum (ROS) approaches³¹, which can be used to help set objectives for wildlife watching tourism. The LAC approach identifies appropriate and acceptable resource and social conditions and the actions needed to protect or achieve those conditions. It includes identification of the scale and types of tourism activities that would be compatible with requirements for wildlife conservation in any particular location - for example, by identifying a maximum number of visitors and groups that an area or animal population could safely sustain without a risk of adverse effects on its sustainability and survival. Appropriate management actions and indicators – including indicators for the health of the watched animals – are then agreed and implemented.

The ROS is a planning approach that is designed to match different types of tourism to land and resources management, including biodiversity conservation and sustainable use. The ROS divides land use types for recreation and tourism purposes into categories that range from essentially natural, low-use areas which offer resource-dependent recreational opportunities, to highly developed, intensive use areas where recreational opportunities are based around constructed facilities and/or are vehicle-dependent.

The outcome of planning for wildlife watching tourism is a series of objectives and targets for conservation, community benefits and tourism. Conservation objectives will generally include targets for maintaining a healthy population – for example, setting minimum population numbers and measures of breeding success. Objectives for community benefits may include setting aside a portion of tourism revenues to be spent on community projects, and training and employment of a minimum number of people from local communities. Tourism objectives will generally include minimum and maximum numbers of tourists, quality of the tourism experience, provision of appropriate facilities and qualified guides for tourism, and targets for tourism income.

Overall, objectives for wildlife watching tourism set a maximum acceptable level for tourism in any area or for any group of watched animals that is based on conservation, social and tourism considerations.

4.5 The importance of planning for sustainable wildlife watching tourism

Measures for minimising disturbance described so far, apply mainly to management of wildlife watching activities at specific sites or groups of sites. However, as the example of pressures from shifts and expansion of tourism at Sian Ka’an illustrates, the management of wildlife watching tourism can also be affected by development of regional infrastructure for tourism. The nature of the tourism cycle means that tourism rarely stops at a low level of visitation, unless there are very firm – generally physical – limits in place. As any locality becomes better known, and as access becomes easier, tourism can begin to grow rapidly, at a pace that can make it difficult to ensure that growth is coordinated and well planned.

There are several implications of rapid tourism growth for wildlife watching: first, there is likely to be a greater demand for wildlife watching activities, and this demand may exceed the limits for sustainable wildlife watching, particularly at the more accessible viewing sites. Without effective controls to keep visitation within sustainable limits, disturbance of the watched animal populations will increase, and the quality of the wildlife watching experience will be affected by overcrowding.

The second factor is that new local tourism operators are also likely to become established, and may be less committed to supporting conservation and working to generate benefits for local communities. For example, in recent years the number of dive operators in Bunaken National Marine Park has expanded to 40, and many of the new operators have not joined the North Sulawesi Watersports Association, which was established by the dive operators who were active in Bunaken in the mid-1990s to promote responsible dive practices and conservation. A third factor is that there may also be pressure on areas used for wildlife watching from unanticipated and competing tourism activities³².

Managing these issues requires a combination of strong spatial and land use planning, and effective management of wildlife watching tourism sites, for example in licensing concessions, setting standards for wildlife watching and habitat protection, and ensuring that tourism operations comply with these standards. This in turn can only be achieved if wildlife and conservation managers have the necessary legal authority and political support.

CASE STUDY: MANAGING TOURISM ON THE

The Galapagos Islands are renowned for their rare and exceptional wildlife – including giant tortoises, marine iguanas, sea lions and birds, such as Darwin’s finches, albatrosses, boobies and frigatebirds. In recognition of their importance, UNESCO designated the islands in 1978 as the first-ever natural World Heritage Site. The Galapagos National Park and the Galapagos Marine Resources Reserve have been established to protect and manage these unique island ecosystems.

The Galapagos Islands are also Ecuador’s most popular tourist destination, and receive nearly 70,000 visitors annually who come to view the wildlife of the islands, and who travel and stay on tourist boats. These visitors generate 11% of Ecuador’s tourism income, and the funds for the National Park and Marine Resources Reserve are generated from a 45% share of entrance fees – currently set at USD 100 per person – for international visitors.

The Islands and their wildlife are vulnerable to human impacts from both visitors and the growing local population.

Tourism is therefore very carefully managed through a combination of zoning, a ‘fixed itinerary’ system for boats carrying more than 20 passengers, and a voluntary certification scheme for tourist boats.

Visitor sites are divided into three management zones:

- sites where visits are permitted for several groups of tourists at a time, and which can be visited by all sizes of tourist boats (intensive use zone)
- sites which may only be visited by groups of up to 16 visitors, one group at a time, and which are used by smaller vessels (extensive use zone)
- sites for use by local residents and visitors seeking less expensive alternatives for recreation, education, hiking, and camping (recreational zone)

The 54 terrestrial visitor sites in total cover less than 1% of the total land area of the National Park, and in the intensive and extensive use zones, tourists must be accompanied by trained guides and keep to marked trails of between



*Elderly couple is observing two sea lions in Ecuador,
© Reiner Heubeck/Still Pictures*

1-1.5 metres width, which are used to protect sensitive wildlife, and to keep physical impacts of visitation on soils and vegetation within very limited and manageable areas. The majority of the 64 marine visitor sites are designated as extensive use zones with visits limited to individual small groups, for diving, snorkelling, and in

a few sites for small launch rides.

Studies suggest that this approach to visitor management is working successfully – for example, comparison of visited and non-visited breeding colonies of birds shows that visitation over several decades has not had any detectable effects on re-

GALAPAGOS ISLANDS, ECUADOR

productive success of these birds.

Around 80 tourist boats currently licensed to operate in the Galapagos Islands. To control pressure on visitor sites, the National Park sets a 'fixed itinerary' each year for every boat that can carry 20 or more passengers. The itinerary sets a schedule for visits to sites by individual boats. Smaller boats have an open itinerary and provide the National Park with the flexibility to move visitors from overused sites to under-visited ones.

Apart from direct visitor effects, some of the major threats to the unique wildlife of the Islands come from risks of introduction of alien species, and of pollution by liquid and solid wastes. To promote minimisation of the environmental impacts from tourist boats, and to ensure good working practices and local community benefits through tourism, a voluntary certification programme – SmartVoyager® – has been introduced.

The programme was designed by an Ecuadorian nonprofit organization - Corporación de Conservación

y Desarrollo (CCD) – with experience in ecotourism and ecolabels, and is guided by an advisory committee – comprised of the Ecuadorian Minister of Tourism, scientists, park officials and representatives of the tourism industry. The International Galapagos Tour Operators Association, representing the companies that manage tourism in the islands, supports the program by distributing information to the tour operators and the tourists themselves.

The certification standards cover potential sources of pollution, such as wastewater and fuels, and set rules for all aspects of tour boat management, including the small craft that ferry visitors ashore. Procurement and supply management guidelines are designed to minimize the chances of introducing alien wildlife species to the area. The standards require good living conditions and advanced training for the boat crew and guides. Passengers must be given maximum opportunity to appreciate the beauty of the islands and close encounters with wildlife while leaving no trace of their visit.

The programme helps boat operators to access expert technical advice and support on how to implement the certification standards. Boats are inspected annually, and provided they still comply with the certification standards, certification is renewed for a further year. The boat operators pay for audits and the use of the SmartVoyager® label.

These tourism management measures are essential for protection of the fragile environment of the Galapagos Islands, and for maintaining the quality of the visitor experience.

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CASE STUDY: WHALE WATCHING, PENÍNSULA

Península Valdés in Argentina is the nursery ground for one of the largest remaining populations of southern right whales. This population has been studied since 1970 and now registers an annual growth of 7%. This species migrates approximately 2000km from its feeding grounds to their nursery ground in the protected waters of the Península Valdés area. On the nursery ground, the whales are distributed close to shore in shallow waters, where they can be seen predictably from June to December. For this reason, Península Valdés has become one of the best places in the world to watch the southern right whale at close range.

Whale-watching tours have become the main tourist attraction in the area, and have grown rapidly since the early 1990s. In 1991, around 17,400 people participated in boat-based whale watching: since then the number participating has grown at around 14% per year, and in 2004, 96,400 passengers went on whale-watch tours at Península Valdés.

The first whale-watch regulations for Valdés were created in 1984 by adapting laws

from other countries. In 2001, the Península Valdés Protected Natural Area was created and a Management Plan was approved. Península Valdés was declared a UNESCO World Heritage Site in 1999. The Management Plan incorporates a no-access zone from which all vessels are prohibited, and a restricted access zone which is only open to authorized whale watching boats. Another zone is provided where only diving with authorized dive operators is permitted. Diving with marine mammals is forbidden in all the zones.

The whale watching regulations forbid approach and/or harassment, sail, swim and diving with any marine mammal species and their calves, inshore and offshore, in provincial waters during the whole year. The regulations were updated in 2004, when tour operators, government representatives and researchers agreed a Voluntary Code of Conduct that would be in effect for the short term until more detailed monitoring studies on the effects of whale watching on the whales have been completed. The Voluntary Code of Conduct includes the following regulations:



Blue whale (Baleanoptera musculus), © WDCS

- 1 no more than one boat per group of whales;
- 2 no drifting toward the animals with engines off;
- 3 always approach whales from their side or back and never from in front;
- 4 do not chase whales when they begin to swim away from the boats;
- 5 do not approach a breaching whale closer than 100 m;
- 6 restrict the maximum time with each individual or group of whales to 15 minutes;
- 7 leave the whales only when their location relative to the boat is certain;
- 8 do not exceed 10 knots when returning from a trip.

Provincial Wardens supervise all whale watching activities, and operators can be fined the equivalent of between 250 - 2000 entry fees for breaking the whale watching regulations, and their permits suspended for a minimum of 5 days or revoked in the most serious cases.

The regulations also establish minimum standards and qualifications that Whale

VALDÉS, ARGENTINA

Watching Tour Operators must meet in order to be granted a whale watching permit, places a limit of two boats per operator, and sets a maximum capacity of 70 passengers per boat. The total number of operators licensed at each site is also controlled. A maximum of five licenses is issued for the Golfo Nuevo watching site, which is the centre of a growing concentration of mother-calf pairs, and six for operators based in Puerto Pirámides. Each company must pay the government a fee of USD 1.75 per passenger.

Península Valdés is one of the places where the Whale and Dolphin Conservation Society (WDCS) organizes specialist travel packages that are designed to give people an opportunity to witness the spectacular natural behaviour of whales and dolphins in the wild. These tours are carefully planned to ensure that they are as sustainable and responsible as possible, minimising impact upon the local marine and terrestrial environments by using only the best local whale watch operators and offering land-based viewing whenever possible; and by

also working closely with local coastal communities to ensure that they benefit directly from the presence of visitors, who use local transport, stay in local accommodation, and enjoy local foods.

The WDCS has supported an orca conservation project on the Peninsula since 1990, and uses the revenue generated from its commercial travel packages to fund conservation work on whales and dolphins around the world. Tours in Península Valdés are accompanied by a WDCS researcher, who provides detailed interpretation of cetacean behaviour and biology based on long-term experience from studying whales and marine life around in the region. The opportunity to learn from a highly knowledgeable wildlife biologist is an added attraction for tourists who join these tours.

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5 CONCLUSIONS AND RECOMMENDATIONS

The case studies included in this report have been selected to illustrate some of the main approaches that are being used for wildlife watching tourism and management with different species around the world. They are just a few of the many that could have been chosen as examples of good practices. However in many parts of the world where wildlife watching takes place, sites may be under threat from both a lack of resources for effective management and also from external pressures.

Even the case study sites experience problems in managing wildlife watching. In Mexico, the Monarch Butterfly Model Forest has been a response to solve problems created through poverty and lack of livelihood opportunities – by creating opportunities through a programme of community development and improved forest management, including major reforestation, pressure has been taken off the sensitive overwintering sites for the Monarch butterflies.

In several sites, there is high variation in the quality of guiding and leadership of tour groups, and sometimes the guides themselves ignore regulations to minimise disturbance to animals, touching reef dwelling organisms to make them move so that divers can see them, or breaking branches so that tourists can get better photos of gorilla groups. This can be the result of a combination of poor training, pressure of expectations from tourists for close-up viewing opportunities, or desire for a better tip.

In some sites, expansion of tourism poses risks that visitation will exceed the numbers that can be managed without leading to unacceptable changes.

Such problems are not uncommon, and they can be rectified provided all the relevant stakeholders commit to finding ways to overcome them. The case studies include a number of examples of participative planning through workshops, seminars and advisory boards that bring wildlife managers, tourism businesses and the local community together to discuss and agree how best to manage wildlife resources and different, potentially conflicting uses.



Polar bear (Ursus maritimus) feeding, © Dave Olsen/USFWS

Participative approaches are just as essential for finding a way out of problems – for example, where there have been poor enforcement of regulations for wildlife watching, conflicts with communities around wildlife watching sites, or problems with wildlife management leading to a decline in population levels or habitat quality. Resolving such problems will generally require a multi-stakeholder approach as the first step towards a more sustainable path for the future.

The continuing worldwide growth in tourism, and the tendency of tourism to follow the ‘tourism cycle’ with a stage of rapid growth that is often difficult to control, mean that wildlife watching tourism can also be expected to continue to increase. This is likely to lead to more pressure on existing wildlife watching sites, their animal populations and habitats, and to development of wildlife watching activities in new areas and for new species. It is therefore vital for governments, conservation managers, and the tourism sector, to monitor the effects of tourism on wildlife, to understand better the way the tourism sector operates in rela-

ON THE WAY FORWARD

tion to wildlife watching, to plan and manage tourism so that it does not exceed acceptable limits, and to ensure that this tourism also makes a net contribution to conservation.

Local communities will also be affected by increasing wildlife watching tourism. If managed well, this can provide opportunities for communities to benefit from new sources of income and employment. But there is also a risk that increasing tourism will place further burdens on communities while offering them few if any benefits. Communities will only be able to gain from tourism if they have access to tourists and are able to provide suitable goods and services to tourists and the tourism sector. To do so, many communities will require training and support to develop the necessary skills for employment in the tourism sector, or to set up their own tourism-related enterprises. Systems may also be needed to ensure that overall tourism income is shared fairly amongst groups of communities, particular in situations where a few communities have much easier access to tourists – perhaps by being situated near a gateway into a national park or major wildlife watching site – compared to other communities in a locality.

5.1 Making wildlife watching tourism sustainable

With the continued expansion of wildlife watching, and the increasing impacts and risks this poses for watched animal populations and their habitats, it is important to ensure that future management of wildlife watching tourism, and associated development of tourism facilities and infrastructure, is better planned and far more systematic than has often been the case in the past.

Wildlife watching can only be sustainable if it contributes to the conservation and survival of the watched species and their habitats, provides benefits for local communities and community development, offers good quality tourism in line with market ex-

pectations, and is commercially viable. The requirements that are needed to attain long-term sustainability of wildlife watching are:

- Long-term survival of population and habitats
- Minimal impact on behaviour of watched and associated species
- Improvement to livelihoods of local people
- Increased awareness of and support for conservation activities amongst all stakeholders
- Plans for sustainable management of wildlife watching tourism, conservation and community development based on set limits of acceptable change and adaptive management
- Ability to manage access to wildlife watching resources and to limit future development
- Supportive legal and planning frameworks combined with commitment from national and local government

Achieving each of these elements involves different sets of skills and expertise, including the ability to access tourism markets, to work with local communities, and to manage wildlife resources. They can best be brought together through participatory approaches to planning for wildlife watching tourism, involving the tourism sector, local communities, local government authorities and wildlife managers. Wildlife watching tourism will not be appropriate in some locations for conservation, social, market or commercial reasons, or a combination of these – it is therefore important to identify and focus on those places where there is a realistic potential to develop sustainable wildlife watching tourism.

There are four areas in particular that need to be addressed to improve the sustainability of wildlife watching tourism, particularly in relation to developing countries:

- Improve understanding of the biology of watched species and monitoring of the effects of tourism on them
- Improve guide training and interpretation
- Evaluate the conditions required for wildlife watching tourism to be a viable option particularly for generating net revenues for conservation and benefits for local communities
- Improve planning and management of tourism in protected areas and wildlife viewing sites

Improve understanding of the biology of watched species and monitoring of the effects of tourism on them

Relatively little is known about the biology of watched species and the effects that wildlife watching tourism may have on them. Most wildlife watching guidelines are based more on attempting to minimise the most visible stress that can be caused to animals, for example by crowding from wildlife watching tours, or through feeding and contact with tourists, or disturbance during breeding periods. However, even for big cats, great apes, whales and dolphins, and some bird species which have been the subject of most research, understanding of the effects of wildlife watching tourism is still quite limited. For example, differences between the way different species are affected by tourism are now becoming apparent, such as differences between lions and cheetahs, or large whales and small whales, and reflect biological and behavioural differences. As a result, wildlife watching codes developed for one species cannot be assumed to be appropriate for other species within the same group.

Research is also starting to reveal that the general background levels of activity in areas where wildlife watching takes place can have significant effects on watched animal populations, in addition to the effects of close observation by tourists. One detailed study found that general patterns of behaviour of dolphins in a popular dolphin watching site in New Zealand were affected – showing less feeding and social interaction – even when animals were not being observed by tourists. As wildlife watching

increases in popularity, general background effects from tourism are likely to have an increasing effect on watched species and their habitats, and to reduce the possibility for watched populations to have access to areas free from disturbance from tourism. Managing the overall development and expansion of wildlife watching tourism will therefore be as important as managing the close interactions between tourists and watched animals, in order to minimise disturbance and adverse effects.

As a first step to more effective management of wildlife watching tourism it is therefore important to improve the understanding of the biology of watched species, and to monitor the effects that tourism has on them. This will enable wildlife watching codes of conduct and regulations to be formulated so that they are more effective in minimising disturbance while ensuring high quality viewing. This may also promote alternative ways of watching wildlife in some situations – for example, the WDCCS encourages land-based whale watching where possible in preference to use of boats.

Improve guide training and interpretation

Wildlife watching is frequently carried out in groups led by guides, particularly where the watched species is rare or difficult to locate. The quality of guiding is often reported to be highly variable, even at the same wildlife watching sites, and in some cases, guides themselves have been found to be poor in their compliance with wildlife watching codes of conduct or regulations. This may partly be linked to pressure from tour groups for closer and longer viewing opportunities.

Enforcement of codes and regulations can be particularly difficult in many wildlife watching situations, and the most effective means is to ensure that guides and tourists understand and feel commitment towards compliance. This requires better training for guides and better briefing for tourists, linked with certification or licensing schemes for guides and tour organisers that include checks on their compliance with wildlife watching codes and regulations, and on quality of interpretation that they provide for tourists.

As well as promoting compliance with wildlife watching codes of conduct and regulations, guide training in interpretation offers scope for enhancing the quality of wildlife watching experiences for tourists and their awareness of conservation issues.

Evaluate the conditions required for wildlife watching tourism to be a viable option particularly for generating net revenues for conservation and benefits for local communities

Although there are plenty of examples of sites which gain significant income from wildlife watching tourism, these are mostly located in areas of high tourism potential with relatively good access and infrastructure. Other sites may have excellent wildlife, but are located further away from main tourism areas, and therefore have lower tourism potential, while at some sites access may need to be restricted for conservation reasons or because of the wishes of local communities. Some areas may also lack effective capacity to manage commercial tourism or provide necessary³³. And in sites with significant levels of tourism, there is no guarantee that a fair share of tourism income will accrue to the local communities and that they will be able to establish livelihoods based on tourism.

At present little attention has been given to understanding the conditions under which wildlife watching tourism can be a sustainable and viable option for conservation and community development. Because of this, there is a risk that wildlife watching activities may be developed that do not match realistic tourism demand and market expectations, or in ways that do not deliver net benefits for conservation or local communities.

It is important to gain a better understanding of the conditions necessary for successful and sustainable wildlife watching tourism, so that guidance can be provided on when it is an appropriate option for conservation and community development, and for when it is not.

Improve planning and management of tourism in protected areas and wildlife viewing sites

Successful wildlife watching tourism requires sound plans to provide the basis for management of the watched populations and their habitats. Because of the uncertainties associated with understanding of the effects of wildlife watching on animals, and with the dynamic nature of tourism, it is particularly important to use adaptive management approaches for management of wildlife watching tourism. Adaptive management requires plans and objectives for wildlife and tourism combined with continuous monitoring and evaluation of tourism and its effects on wildlife to check if objectives set in the plans are being met. Where they are not, management actions are adjusted as necessary to bring wildlife watching tourism into line with the planned objectives.

Effective implementation of plans often requires interactions of a range of different stakeholders – particularly tourism businesses and local communities, as well as wildlife managers – and there is a need to understand better the roles of these stakeholders in making wildlife watching tourism operate successfully to provide high quality tourism, and conservation and local community benefits.

There is also a need for greater understanding of the costs and benefits of managing wildlife sites for wildlife watching tourism, including the costs of providing the necessary visitor facilities, such as trails, sanitation and waste management, and their maintenance, as well as the costs of providing interpretation and, in some cases, habitat restoration.

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 - generation of sufficient revenues to reduce threats to biodiversity from local communities,
 - encouraging all stakeholders, particularly the private sector, to support the conservation of biodiversity,
 - ensuring the effective participation of communities in tourism development, and
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WILDLIFE WATCHING AND TOURISM

A study on the benefits and risks of a fast growing tourism activity and its impacts on species

Wildlife watching tourism can make important contributions to community development and conservation by raising awareness of the animals observed and their habitats, by creating revenues for conservation, and by creating jobs and income for local communities.

However, to achieve these contributions, wildlife watching tourism needs to be carefully planned and managed by government agencies, the tourism sector and conservation managers. With rapidly growing demand from tourists for wildlife watching activities, controls are also needed to prevent adverse effects on wildlife and local communities.

This report and its 12 case studies describe the benefits that can come from wildlife watching tourism, and focus on practical ways to use planning and visitor management to ensure the long-term sustainability of this activity.



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