

Tourism: facing the challenge of climate change



**WWF conserves
wildlife and the
natural environment
for present and
future generations**

International tourism is the largest and most rapidly expanding industry in the world. Many of the most popular tourist destinations depend heavily on the natural environment for their appeal: coastal resorts, tropical rainforests, wildlife safaris and alpine ski resorts, for example, all rely on a mixture of natural beauty, good weather and safe conditions to attract holiday-makers.

Whether you prefer a package deal, an exotic “no news-no shoes” adventure, skiing, winter sunshine or ecotourism, holidays have become an essential part of our lives. In the UK they are one of our most costly items of expenditure, with an average package holiday at home costing 70p per household per week, and £8.10 per household per week for a package holiday overseas. As well as the more popular short-haul flights – for example to Spain, Greece and Turkey – more tourists are now flocking to long-haul destinations.

Facing the challenge of climate change

The tourism industry’s heavy reliance on the local environment to sell holidays means that it could face serious challenges as a result of climate change. Global and regional temperatures are rising. The hottest year of the millennium was 1998 and the 1990s was the warmest decade. Climate models suggest a future warming of 0.2 – 0.3°C per decade and sea-levels are expected to rise at a rate of 4 to 10 centimetres per decade. While the impacts of global warming on tourism will vary, it is already clear that small island states such as the Maldives in the Indian Ocean, an increasingly popular tourist destination, will be particularly vulnerable to sea-level rise.

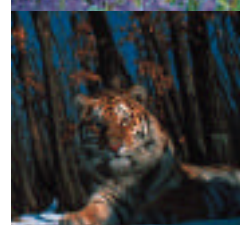
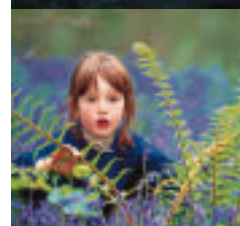
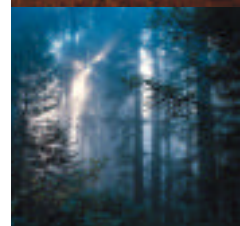
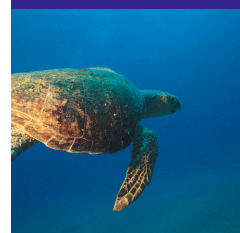
Climate change is also expected to increase the risk of illness in several parts of the world and this may lead to a falling-off of tourism. More frequent periods of extreme heat will cause discomfort in many eastern Mediterranean resorts, where the number of days above 40°C is expected to increase. A decline in cloud cover in Australia will increase exposure to the sun’s harmful rays and malaria is likely to re-emerge in Spain, the most popular destination for British package holiday-makers.

Winter tourism may also be affected, as the Alps and other European skiing destinations experience less snowfall and shorter skiing seasons. These impacts will be especially pronounced in lower-lying ski resorts such as Kitzbühel in Austria, and in places where commercial ventures are already marginal, such as the Scottish Highlands.

Tour operators and countries that rely on tourism for foreign revenue will need to take into account the potential impacts of climate change when planning new resorts or upgrading their present facilities.

Tourism – part of the problem

Tourism is not just a potential victim of global warming: it also contributes to the causes of climate change. For example, air travel is the fastest growing source of greenhouse gas emissions and therefore increases the risk of continued global warming. From 594 million international travellers in 1996, numbers are forecast to leap to 702 million by next year, 1,018 million by 2010 and 1,600 million in 2020. As a consequence, the role of air travel within the industry is also likely to expand and cause considerable environmental damage.



Panda House, Weyside Park
Godalming, Surrey GU7 1XR
Telephone 01483 426444
Fax 01483 426409

Visit our web site:
www.wwf-uk.org

Case studies

The Maldives

The Maldives are an archipelago of 1,190 coral atolls which themselves comprise numerous small islands, of which nearly 200 are inhabited. During the 1980s, tourism in the Maldives became one of the most important and highest growth sectors of the economy. But the low elevation of the Maldives makes the archipelago extremely vulnerable to sea level rise. Many of the islands are less than one metre above sea-level. As the world's oceans heat up, they expand – and this causes sea levels to rise between 4cm and 10cm every 10 years. At best, a rise in sea level would cause coastal erosion in the Maldives, and at worst a sizeable proportion of the landmass could become submerged over the next 30 years. Coral reefs, a major tourist attraction, could be destroyed.

The Alps

The Alps are not only one of the primary European winter holiday destinations for skiers, but are also a popular destination for summer walking holidays. The mountains exhibit a great range of climatic conditions, with virtually every Alpine valley having a unique local climate. Tourism is important to the economy of many Alpine countries, but in some places the industry has been in decline for five years.

It is expected that as temperatures rise, the snow season will shorten and snowfall reduce. In many areas this reduction may be as much as 30 per cent by the 2020s and more than 50 per cent by the 2050s. Garmisch-Partenkirchen, Bavaria's best-known ski resort, and Kitzbühel in Austria, will both suffer. By 2050 snow cover in Kitzbühel is expected to fall from 76 to 53 days in the winter.

The eastern Mediterranean

Greece and Turkey enjoy mild winters and long hot summers, with maximum temperatures often exceeding 40°C. It is likely that the mean summer temperature will rise by more than 4°C by the middle of the 21st century. Increases in summer temperatures to above 40°C will reduce personal comfort and could lead to more heat stress and associated mortality.

While beach resorts may still be bearable, Athens will become decidedly uncomfortable. Smog will continue to be a big problem, not only in Athens but elsewhere in the eastern Mediterranean. Other detrimental impacts are likely to include further water supply restrictions and forest fires.

South-eastern Spain

Climate change will bring with it a likely rise in temperatures – for example, September in 2050 may well be as warm as a present-day July. The indications are that rainfall will not change significantly, so the summer months will remain very dry, with a resulting pressure on water supply.

Malaria has already re-surfaced in Spain and parts of the country may become a suitable habitat for some malaria-bearing mosquitos by the 2020s. Other impacts of climate change in Spain are likely to include flash floods, heat stress and more forest fires. According to the Spanish Forestry Service ICONA, between 1985 and 1994 almost 250,000 hectares were burnt. In recent years following periods of extreme dryness, the number of forest fires has increased. In the future, large areas of forest and parkland may be closed off to summer visitors.

Scotland

Scotland's weather is highly variable. Future changes in the climate will result in warmer summers and winters. Sufficient snow cover is far from certain even in the present climate. If the warming trend continues, the viability of the Scottish skiing industry will be at risk.

The European Lakes

The high-altitude locations of some of Europe's large lakes make them attractive to tourists but vulnerable to climate change. Shallow lakes, such as Lake Balaton in Hungary which has an average depth of two or three metres, respond quickly to an increase in temperature. Climate models suggest that both Switzerland and Hungary can expect hotter and drier summers.

The resulting changes in water level could have an adverse impact on the local tourist industry. A decrease in water level coupled with higher temperatures may result in greater concentrations of pollution including algal blooms along the shore which could discourage water sports. Lakes of all sizes could be affected. Small rivers and streams are also vulnerable and this could have an impact on sports fishing.

East and South Africa

Tourism is one of Kenya's top two foreign exchange earners. Tanzania has a huge potential for wildlife-related tourism, with nearly 26 per cent of its land – including the world famous Serengeti National Park – set aside as protected or conservation areas. And in South Africa, tourism has benefited most from the end of apartheid. All have wildlife reserves as a chief attraction for tourists.

These countries already have very variable climates, and any further change could have significant impacts on tourism. The distribution of wildlife could alter as a result of increased drought and changed temperatures, potentially causing havoc to Africa's system of protected areas which are based on wildlife distribution. Some of the world's already endangered animals could face new pressures as they try to move out of protected areas in search of the right environment. The infrastructure supporting these tourist activities could also be put under pressure.

Australia

Australia's environment is one of enormous variety. The rainforests in the subtropical north give way to the often parched Outback, which in turn submits to the cooler regions of the south. The Great Barrier Reef, the Blue Mountains, water sports and skiing earn the country some 11.5 billion Australian dollars a year.

A continuing warming trend may have several knock-on effects in the Australian tourist industry. Ski resorts could lose 44 per cent of their skiers if winters with little natural snow became more common. Australia's only alpine and sub-alpine mammal, the mountain pygmy possum, is already endangered and will be put further at risk if its habitats shrink further.

The Great Barrier Reef, the world's largest coral reef, could also feel the heat. Recent scientific reports suggest that coral bleaching is linked to global warming. This would be catastrophic for its tropical marine ecosystems and the tourist industry built around them.

Some health impacts of climate change in Australia will be immediate – not least death or illness due to heatwaves or bushfires. Other health impacts such as a rise in insect-borne diseases may become more common. And as cloud cover decreases, there will be increased exposure to harmful ultra-violet rays which cause skin cancer.

Florida and the south-east coastline of the US

Tourism is the second largest industry in the US, contributing \$746 billion to the economy and employing 14.4 million people a year.

The Atlantic coasts of Delaware and Maryland may be threatened by sea-level rise, erosion, storm damage and warming waters. Sea-level rise will also affect Florida, where so much recreational and tourist activity is concentrated along its coasts, beaches and islands – many of which are vulnerable to erosion. A number of ecologically important wetlands, such as the Everglades and some coastal areas, may also be under considerable threat. Coral bleaching caused by warmer seas may also have a major adverse impact on Florida's big money-earner.

Brazil

Brazil's rainforests are already under serious threat from deforestation, and climate change could cause further stress to this delicate and threatened ecosystem. Recent climate modelling suggests that increases in temperature, coupled with reduced rainfall, would see a considerable reduction in the rainforest region of Amazonia. These models do not take into account the continuing forest degradation caused by logging. A loss of this magnitude and disturbance to the natural ecosystem could have profound effects on the biodiversity of Amazonia and the surrounding regions.

WWF's recommendations

WWF believes that urgent action must be taken now by governments, individuals, business and industry – including the tourism industry – to reduce the threat of global warming. WWF works to improve the environment, and campaigns for governments worldwide to meet, and ideally go beyond, the commitments they made at the Kyoto climate change summit in 1997.

As one of the world's largest industries, and one that heavily depends on the climate and environment for its success, the tourism industry itself must take action to reduce its contribution to global greenhouse gas emissions. For example, improving the energy efficiency of buildings in existing and newly-built resorts, and where possible using electricity from renewable energy supplies, would make a difference. Transport to, from and around resorts is another key area where changes can be made, and operators should be encouraged to incorporate public transport and cycling infrastructures in their resort plans.

In the UK, WWF lobbies the government to take immediate action to implement policies and measures to meet its target of a 20 per cent reduction in CO₂ emissions by 2010.

We believe that the following actions will help that target to be reached:

- Changes to the UK's energy policy must be introduced, so that a shift takes place from fossil fuels to renewable sources of energy such as wind, sea and solar power. This will need to be coupled with changes to planning procedures and laws, so that more opportunities for renewable energy sources can be developed.
- Energy companies should be required to obtain an increasing proportion of their supply from renewable sources, and to offer more comprehensive energy efficiency programmes to their customers.
- The proposed climate change levy – a business energy tax – should be introduced swiftly. A substantial proportion of the proceeds should be used to provide energy efficiency incentives to small and medium-sized enterprises.
- More stringent efficiency standards and a compulsory energy rating scheme should be employed in the building sector.
- Substantial new investment in public transport is imperative, together with a much improved infrastructure for cyclists and pedestrians. Road and car parking charges should help finance this.
- Support needs to be created for an international (or at least a European Union) aviation fuel tax.
- The issue of comparatively low energy prices in the UK domestic sector needs to be addressed because these are a deterrent to energy efficiency improvements. A domestic energy levy could be used to provide energy efficiency incentives. Low-income families could be given compensatory payments to avoid negative social impacts.
- VAT should be reduced on all energy efficiency materials.