Tourism on the Move in a Changing Climate

Rising temperatures, higher sea levels and degraded habitats will have serious impacts on almost every sub-sector of the tourism industry. But options exist to help the industry adapt to climate change.

- **IMPACTS** Changes already affecting the tourism sector
- **RISKS** Likely impacts on tourism in the future
- **ADAPTATION** How the industry can respond
- **MITIGATION** What tourism can do to reduce its emissions

Mountain and Snow Tourism

RISKS
Rising temperatures will mean that fewer resorts will be able to rely upon sufficient snowfall.

ADAPTATION
Snow-making machines can help operators respond to less reliable snowfall, although they will face technological and economic limits as temperatures rise.

ADAPTATION
Winter sport resorts can adapt by marketing themselves as year round-destinations, with longer 'green seasons' helping to offset shorter skiing seasons.

Forest and Lake Tourism

MITIGATION
Behavioural changes, such as holidaying locally in favour of long-haul destinations, would reduce the impacts of tourism.

IMPACTS
Severe droughts and pest infestation have led to widescale forest die-back in North America.

RISKS
In Southern Europe, North America and Australia, fire seasons will lengthen, and there will be an increase in the number of high fire danger days.

Biodiversity and Agricultural Tourism

RISKS
Rising temperatures are seeing species shift towards the poles and to higher elevations where possible. Extinctions are increasingly likely as climate change progresses.

RISKS
In sub-Saharan Africa, up to 40% of species in national parks are likely to become endangered by 2080, assuming they are unable to migrate.

RISKS
The suitability of most existing wine regions for vine-growing is expected to decline, affecting wine tourism.

Cities and Urban Centre Tourism

RISKS
An estimated 150 million people currently live in cities with perennial water shortage, a figure which could rise to 1 billion by 2050.

IMPACTS
Half to two-thirds of Asia's cities with 1 million or more inhabitants are exposed to one or more climate-related hazards, with floods and cyclones the most important.

MITIGATION
The built environment accounts for 20% of the sector's climate impact; retrofitting or energy-efficient new builds would cut emissions.

Beach and Coastal Tourism

IMPACTS
Sea levels are estimated to rise 0.45–0.82m higher than present by the end of the century if emissions continue to rise at the current rate.

RISKS
Degraded beaches reduce the desirability of destinations, and beach erosion can reduce the prices that operators can charge for accommodation.

MITIGATION
New aircraft typically offer 20–30% improvement in efficiency. Shifting from kerosene to biofuels offers 30% + cuts in direct greenhouse gas emissions.

Ocean and Sea Life Tourism

ADAPTATION
The decline in sea ice is expected to add to an already rapid increase in Arctic cruises.

IMPACTS
Distributions of fish and other marine fauna are changing as the oceans warm, impacting recreational fishing and marine animal watching.

RISKS
2°C of global warming by 2050-2100 and ocean acidification would would see reef structures degrade with serious consequences for tourism. Mass coral bleaching and mortality becomes an annual risk under all climate scenarios, with mass mortality events beginning to occur every 1–2 years by 2100.

Mountain and Snow Tourism

Snow sports are at obvious risk from rising temperatures, with lower-elevation resorts facing progressively less reliable snowfalls and shorter seasons. But other types of mountain tourism are also vulnerable, as infrastructure is put at risk from melting glaciers and thawing permafrost.

Forest and Lake Tourism

Outdoor activities will be affected by large-scale forest dieback and more widespread wildfires, triggered by sustained drought and higher temperatures. Longer fire seasons will reduce access to national parks. Rising temperatures will change lake habitats, affecting fishing tourism.

Biodiversity and Agricultural Tourism

As temperatures rise, the geographical dispersal of flora and fauna will change, as species shift to conditions to which they are better adapted. Given that many nature reserves are geographically isolated, this may prove difficult or impossible for many iconic species.

Cities and Urban Centre Tourism

City visits account for a large percentage of the global tourism industry. Across the world, city infrastructure is exposed to a range of climate impacts, including extreme heat events, water shortages and flooding. Coastal cities, meanwhile, are at risk from sea-level rise.

Beach and Coastal Tourism

Rising sea levels and more extreme weather events threaten beaches and coastal infrastructure enjoyed by hundreds of millions of tourists each year. While adaptation can protect at-risk infrastructure, beaches are difficult to protect without reducing their attractiveness.

Ocean and Sea Life Tourism

The combination of rising water temperatures and increasing ocean acidification, caused by the absorption of carbon dioxide, spell particular peril for reef ecosystems and the dive tourism they support. Warming sea temperatures will also change the distributions of fish and marine mammals.