

Lecture 5

Environmental Consequences of Tourism Development

Chapter 1: Environmental impacts of tourism

Table 5:1 attempts to summarize a representative cross-section of positive and negative effects that tourism may have upon physical environments and proposes five key headings under which tourism effects may be grouped.

Under the first heading, biodiversity, are located a number of effects that broadly impact upon the flora and fauna of a host region. The 'balance' of influence here leans strongly towards the group of negative impacts, for whilst tourist demands have occasionally been partly or fully responsible for programs aimed at establishing zones of conservation in which wildlife and their natural ecosystems are protected (for example, in the national parks in Kenya and Tanzania or on the Great Barrier Reef in Australia), the more commonplace patterns are associated with damage.

As Table 5:1 indicates, such damage may occur in varying forms. Most widely, processes of tourism development (construction of hotels and apartments, new roads, new attractions, etc.) can result in a direct loss of habitats.

In the Alps, extensive clearance of forests to develop ski-fields and the loss of Alpine meadows with particularly rich stocks of wild flowers to new hotel and chalet construction has significantly altered ecological balances and, in the case of deforestation, greatly increased risks associated with landslides and snow avalanches.

At a more localized scale, other impacts become apparent. Destruction of vegetation at popular visitor locations through trampling or the passage of wheeled vehicles is a common problem.

The overall effect of such change is normally to reduce species diversity and the incidence of rare plants which, in turn, may impact upon the local composition of insect populations, insectivorous birds and possibly small mammals for which plant and insect populations are key elements in a food chain.

Larger animals may be affected in different ways by tourism, even within environments that are protected. The increasing popularity of safari holidays has become a problem in African national parks where the close attention of tourists in vehicles has been held to account for disruption to feeding and breeding patterns of animals and, in some cases, their eventual migration to remoter areas.

The impacts of tourism upon the diversity of flora and fauna link with the second area of concern, erosion and physical damage, and this illustrates how environmental problems tend to be interlinked. Erosion is typically the result of trampling by visitors' feet, and, whilst footpaths and natural locations are the most likely places for such problems to occur, extreme weight of numbers can lead to damage to the built environment.

The Parthenon in Athens, for example, not only is under attack from airborne pollutants but also is being eroded by the shoes of millions of visitors. However, in such situations, tourism can have positive impacts, for although the activity may be a major cause of problems, revenue generated by visitors may also be a key source of funding for wider programs of environmental restoration.

Table 5:1 'Balance sheet' of environmental impacts of tourism

<i>Area of effect</i>	<i>Negative impacts</i>	<i>Positive impacts</i>
Biodiversity	Disruption of breeding/feeding patterns Killing of animals for leisure (hunting) or to supply souvenir trade Loss of habitats and change in species composition Destruction of vegetation	Encouragement to conserve animals as attractions Establishment of protected or conserved areas to meet tourist demands
Erosion and physical damage	Soil erosion Damage to sites through trampling Overloading of key infrastructure (e.g. water supply networks)	Tourism revenue to finance ground repair and site restoration Improvement to infrastructure prompted by tourist demand
Pollution	Water pollution through sewage or fuel spillage and rubbish from pleasure boats Air pollution (e.g. vehicle emissions) Noise pollution (e.g. from vehicles or tourist attractions: bars, discos, etc.) Littering	Cleaning programmes to protect the attractiveness of location to tourists
Resource base	Depletion of ground and surface water Diversion of water supply to meet tourist needs (e.g. golf courses or pools) Depletion of local fuel sources Depletion of local building-material sources	Development of new/improved sources of supply
Visual/structural change	Land transfers to tourism (e.g. from farming) Detrimental visual impact on natural and non-natural landscapes through tourism development Introduction of new architectural styles Changes in (urban) functions Physical expansion of built-up areas	New uses for marginal or unproductive lands Landscape improvement (e.g. to clear urban dereliction) Regeneration and/or modernisation of built environment Reuse of disused buildings

Source: Adapted from Hunter and Green (1995).

A more common problem is soil erosion, and Figure 5:1 attempts to show how the systematic manner in which the environment operates actually transmits the initial impact of trampling to produce a series of secondary effects which may eventually exert profound changes upon local ecosystems, leading to extensive damage.

Localized examples of such damage can be spectacular. In north Wales, popular tourist trails to the summit of Snowdon now commonly reveal eroded ground that may extend to 9 m in width, whilst localized incidence of soil erosion and gullyng has lowered path levels by nearly 2 m in a little over twenty years.

The environmental impacts of which the tourist is probably most aware are those associated with pollution, particularly the pollution of water.

With so much tourism centered in or around water resources, pollution of water is a major concern. Poor-quality water may devalue the aesthetic appeal of a location and be a source of water-borne diseases such as gastro-enteritis, hepatitis, dysentery and typhoid.

Visible water pollutants (sewage, organic and inorganic rubbish, fuel oil from boats, etc.) will also be routinely deposited by wave action onto beaches and shorelines, leading to direct contamination, noxious smells and visually unpleasant scenes.

Pollution of water also has a number of direct effects upon plant and animal communities. Reduced levels of dissolved oxygen and increased sedimentation of polluted water diminish species diversity, encouraging rampant growth of some plants (e.g., various forms of seaweed) whilst discouraging less robust species.

In some cases, such changes have eventually impacted upon tourists. In parts of the Mediterranean, and particularly the Adriatic Sea, the disposal of poorly treated sewage (supplemented by seepage of agricultural fertilizers into watercourses that feed into the sea) has created localized eutrophication of the water. (Eutrophication is a process of nutrient enrichment.)

This has led directly to formation of unsightly and malodorous algal blooms that coat inshore waters during the summer months, reducing the attractiveness of the environment and depressing demand for holidays in the vicinity.

Water pollution is especially commonplace in areas of mass tourism where the industry has developed at a pace that is faster than local infrastructures have been able to match (for example, the Spanish Mediterranean coast), but even in long-established tourism locations, where local water treatment and cleansing services ought to be adjusted to local needs, water pollution is still commonplace.

Alongside water pollution, tourism is also associated with air pollution and, less obviously, noise pollution. Pollution due to noise is usually highly localized, centering upon entertainment districts in popular resorts, airports and routeways that carry heavy volumes of tourist traffic.

However, the dependence of tourism upon travel means that chemical pollution of the atmosphere by vehicle exhaust fumes is more widespread and, given the natural workings of the atmosphere, more likely to travel beyond the region in which the problem is generated.

Nitrogen oxides, lead and hydrocarbons in vehicle emissions not only threaten human health but also attack local vegetation and have been held to account for increased incidence of acid rain in popular localities.

The St Gotthard Pass, which lies on one of the main routeways between Switzerland and Italy, is one location where atmospheric pollution from tourist traffic has been responsible for extensive damage to vegetation, including rare Alpine plants.

A fourth area of concern centers on tourism impacts upon the resource base. Whilst tourism may be an agency for the promotion of resource conservation measures, it will exert negative effects associated with depletion or diversion of key resources.

The attraction of hot, dry climates for many forms of tourism creates particular demands for local water supplies, which may become depleted through excessive tourist consumption or be diverted to meet tourist needs for swimming pools or well-watered golf courses.

In parts of the Mediterranean, tourist consumption of water is as much as six times the levels demanded by local people. Tourism may also be responsible for depletion of local supplies of fuel or perhaps building materials. Paradoxically, the removal of sand (for concrete) from beaches is not uncommon.

The final area of environmental impact concerns visual and structural changes, and it is here that there is perhaps the clearest balance between negative and positive impacts of tourism.

The physical development of tourism will inevitably produce a series of environmental impacts. The natural and non-natural environment may be exposed to forms of 'visual' pollution prompted by new forms of architecture or styles of development.

Land may be transferred from one sector (for example farming) to meet demands for hotel construction, new transport facilities, car parks or other elements of infrastructure. The built environment of tourism will also expand physically, whether in the form of accretions of growth on existing urban resorts, new centers of attraction or second homes in the countryside.