Chapter 1
The International Tourism Industry: Opportunities and Threats for Biodiversity Conservation

1.1 The Growth of the International Tourism Industry
Since the Second World War, the growth of international tourism has been phenomenal. Annual tourist arrivals worldwide increased from 25 million in 1950 to 450 million in 1990. Between 1969 and 1979, the World Bank encouraged developing countries to invest in tourism as a strategy for attracting foreign investment, and the governments of developing countries began to see tourism as a means to redistribute resources from North to South.

In the words of the World Tourism Organization (WTO), tourism became “one of the most important economic, social, cultural and political phenomena of the twentieth century” (Ceballos-Lascurain 1996).

Today tourism is often described as the world’s “biggest” industry on the basis of its contribution to global gross domestic product (GDP), the number of jobs it generates, and the number of clients it serves (see Box 1). However, these conclusions are based largely on arrivals statistics, which focus on international tourism and therefore hide the significance of domestic tourism. These statistics may also underestimate regional tourists traveling by land rather than air or sea. The WTO estimates that the ratio of domestic to international tourism is as high as 10:1—although this varies hugely from country to country (WTO 1997). The size of the industry and its rate of growth present both opportunities and threats for biodiversity conservation.

Box 1: The World’s Biggest Industry?
Statistics produced by the World Travel and Tourism Council (WTTC) indicate that tourism generates 11 percent of global GDP, employs 200 million people, and transports nearly 700 million international travelers per year—a figure that is expected to double by 2020.

According to the World Tourism Organization, international tourism
- accounts for 36 percent of trade in commercial services in advanced economies and 66 percent in developing economies;
- constitutes 3–10 percent of GDP in advanced economies and up to 40 percent in developing economies;
- generated US$464 billion in tourism receipts in 2001;
- is one of the top five exports for 83 percent of countries and the main source of foreign currency for at least 38 percent of countries.

The tourism industry was considered by some to be a more reliable source of foreign exchange than minerals, raw materials, cash crops and manufactured goods, which had increasingly unstable prices. Tourism was also seen as an exceptional opportunity to valorize national culture, wildlife and unique natural features.

(Chimire 1997).
1.2 Biodiversity Considerations
The Convention on Biological Diversity (CBD) defines biodiversity as “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems” (CBD 1992). The common understanding of the term “biodiversity” is all the living things on Earth and the ecological processes associated with them. Vermeulen and Koziell (2002) note that, as such, biodiversity can be, and is, used as a synonym for “nature” or “life on Earth.” Often lost in discussions of biodiversity is the emphasis on the variability and variety within species, among species, and among the ecological processes, and the key benefits these bring to humans in the form of choice—both in the present and in the future.

Biodiversity is essential to human development because of the goods and services it provides. Components of biodiversity may be used directly as food, medicine, building materials, and so on. Biodiversity provides more indirect benefits, in the form of environmental regulation, soil conservation, and pollution control. It also has what economists refer to as “non-use values”—for example, the simple enjoyment or “existence value” of some aspects of biodiversity and the option to use biological resources in the future. Many of the services biodiversity provides are not widely recognized or are not appropriately valued in economic terms. However, the combined economic value of 17 ecosystem services has been estimated at US$16.54 trillion per year (Costanza et al. 1997). Furthermore, one of the Working Groups for the World Summit on Sustainable Development (WSSD) reported that an estimated 40 percent of the global economy is based on biological products and processes (WEHAB Working Group 2002).

UNEP’s Global Environmental Outlook (GEO) report on the state of the global environment (UNEP 2002) highlights that, on a global scale, biodiversity is being lost at a rate many times higher than that of natural extinction. This loss is due to land conversion, climate change, pollution, unsustainable harvesting of natural resources, and the introduction of invasive species. Human population growth, together with unsustainable patterns of consumption, increasing production of waste and pollutants, urban development, and international conflict, further contributes to biodiversity loss. Over the past three decades, major losses of virtually every kind of natural habitat have occurred, and the decline and extinction of species have emerged as major environmental issues. Although insufficient information is available to determine precisely how many species have become extinct in the past 3 decades, about 24 percent (1,130) of mammals and 12 percent (1,183) of bird species are currently regarded as globally threat-
ened. So great is the concern over the rate of decline, and its implications for human welfare, that biodiversity was identified as one of the five priority areas for the 2002 World Summit on Sustainable Development (WSSD).

A common strategy for biodiversity conservation has been identify priority areas and focus conservation efforts on those areas. The international system of national and regional protected areas is a clear example of this approach, and it is also implemented through a variety of international agreements: the Ramsar Convention produces a list of Wetlands of International Importance, and the World Heritage Convention identifies sites of natural heritage considered to be of outstanding value. Several international conservation organizations have also adopted this strategy: BirdLife International designates Important Bird Areas (IBAs), based, *inter alia*, on the presence of globally threatened or endemic species; and World Wildlife Fund (WWF) has defined a “Global 200” set of priority conservation areas, with the central concept being to conserve the broadest variety of the world’s habitats and the most endangered wildlife.

**1.3 Conservation International’s Priority-Setting Mechanisms: Biodiversity Hotspots, Wilderness Areas, and Coral Reef Hotspots**

CI has developed a priority-setting strategy that focuses its attention on biodiversity hotspots around the world. CI notes that two factors are considered for hotspot designation:

“Hotspots are regions that harbor a great diversity of endemic species and, at the same time, have been significantly impacted and altered by human activities” (Meyers, et. al. 2000).

Plant diversity is the biological basis for hotspot designation—to qualify as a biodiversity hotspot, a region must support at least 1,500 endemic plant species (0.5 percent of the global total). Existing primary vegetation is the basis for assessing human impact in a region, and a hotspot must have lost 70 percent or more of its original habitat. Overall, the hotspots have lost nearly 90 percent of their original natural vegetation.

The biodiversity hotspots contain 44 percent of all known endemic plant species and 35 percent of all known endemic species of birds, mammals, reptiles, and amphibians in only 1.4 percent of the planet’s land area (Meyers, et. al. 2000).

Given the great concentration of plant and animal species in such a small and highly threatened terrestrial fragment of the world, it is extremely important that these areas receive very special conservation attention, along with research and monitoring to prevent further extinctions.

Map 1 illustrates the location of each of the hotspots. The biodiversity hotspots span countries of different sizes, economic and resource endowments, and social contexts. Mass tourism, as well as nature-based and adventure tourism, is a significant revenue generator in many of these countries.

CI has also identified 10 coral reef hotspots. Eight of the 10 are adjacent to terrestrial biodiversity hotspots. Extending terrestrial conservation efforts seaward in those places offers an effective and affordable strategy for protecting global biodiversity. Coral reef hotspots, many of which receive significant tourism volumes, are also identified in Map 1.

An additional and complementary terrestrial prioritization category used by CI is that of wilderness areas. Three major tropical wilderness areas are shown in Map 1 —Amazonia, the Congo Forest of Central Africa, and the island of New Guinea. They are at least 70 percent intact and are generally under less pressure from encroaching human populations than are the biodiversity hotspots, having fewer than five people per square kilometer. As such, these areas are among the last places where indigenous people can maintain traditional lifestyles. These wilderness areas are among the largest remaining tracts of pristine land on Earth but, compared to similarly intact desert, arctic, or boreal regions, they hold a high proportion of the planet’s biodiversity. They are also of crucial importance to climate regulation and watershed protection.

**1.4 Tourism Development and Biodiversity Conservation: Linkages and Disconnects**

The travel and tourism industry claims that it is well placed to contribute to sustainable development on the grounds that it...
• has less impact on the environment than many other industries,
• is based on an enjoyment of the natural and cultural environment and so is motivated to protect them,
• can play a positive role in awareness raising and consumer education through its vast distribution channels, and
• provides an economic incentive to protect habitat that might otherwise be converted to less environmentally friendly land uses (WTTC and IHRA 1999).

The above points can be made equally in relation to tourism's potential contribution to biodiversity conservation, because biodiversity is a critical component of the natural environment that tourists enjoy. It is true, as this research project illustrates, that tourism has been growing and increasing particularly in biodiversity hotspots in the South. Given the rapid growth in nature and adventure travel within the global tourism industry during the past 2 decades, it is reasonable to assume that tourism's growth in these high biodiversity areas is linked to their relatively unique natural environments. Destroying the environment on which the success of the industry is based is therefore like killing the goose that lays the golden egg.

Tourism can, and sometimes does, make significant contributions to protected-area systems of conservation. Direct benefits from tourism to conservation can be clustered in five areas (Brandon 1996):

1. a source of financing for biodiversity conservation, especially in legally protected areas;
2. economic justification for protected areas;
3. economic alternatives for local people to reduce overexploitation of wildland and wildlife resources on protected areas;
4. constituency-building, which promotes biodiversity conservation; and
5. an impetus for private biodiversity conservation efforts.

In the South, tourism is often the overriding justification for governments to support the creation of new protected areas. In addition, since the mid-1980s, the trend toward wildlife needing to “pay its way” and for local communities to be actively involved in conservation efforts has led to the emergence of ecotourism as a more responsible form of nature-based travel that promotes biodiversity conservation and also brings benefits to local communities (see Box 2).

During the seventh session of the United Nations Commission on Sustainable Development (CSD) in 1999, UNEP reemphasized the growing recognition that “the involvement of local communities in tourism development and operation appears to be one important condition for the conservation and sustainable use of biodiversity.” Obligations of donors and governments under the CBD, with its emphasis on sustainable use and benefit sharing, have served to reinforce this trend, resulting in

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**Box 2: Ecotourism—Linking Tourism and Biodiversity Conservation**

“Ecotourism is an idea, a concept, that is challenging tourism as we have known it. Defined most succinctly as ‘responsible travel to natural areas, that conserves the environment and sustains the well being of local people,’ ecotourism fundamentally reshapes the basic precepts behind tourism, which is quite simply travel undertaken for pleasure. Nature tourism, which is frequently but erroneously considered the same as ecotourism, is defined as travel to unspoiled places to experience and enjoy nature. Its close cousin, adventure tourism, is described as nature tourism with a kick—nature tourism with a degree of risk taking and physical endurance. Nature and adventure tourism focus on what the tourist is seeking. In contrast, ecotourism is qualitatively different. It focuses on what the traveler does, plus the impact of this travel on both the environment and the people in the host country. Ecotourism posits that this impact should be positive. Ecotourism is not, therefore, simply another niche market within the tourism industry. Rather, ecotourism is a philosophy, a set of practices and principles that, if properly understood and implemented, will transform the way we travel.”

(Honey 2002)
the **CBD Guidelines on Sustainable Tourism in Vulnerable Ecosystems**, approved in the convention’s Scientific and Technical advisory body in March 2003.

Communities that receive significant income from tourism may be motivated to conserve biodiversity. However, if benefits are small—or not sufficiently linked with conservation inputs—they may be reinvested in activities that undermine biodiversity conservation such as livestock rearing (WCPA 2000).

Sustainable tourism has emerged as a more responsible form of mass tourism development (see Box 3). In the past, traditional mass tourism developments have been a major threat to biodiversity conservation because management controls and effective planning mechanisms have been lacking. Drawing from the concepts of ecotourism, namely that tourism should “conserve the environment and sustain the well-being of local people” (TIES 1991), sustainable tourism seeks to minimize the negative footprint of tourism developments and at the same time contribute to conservation and community development in the areas being developed.

It might be expected that tourism development following the principles associated with ecotourism would go hand in hand with biodiversity conservation and improvements in rural livelihoods. In many instances, tourism has been instrumental in delivering scarce funds for conservation and providing local people with an economic incentive to protect biodiversity from other, potentially more damaging forms of develop-
The role of tourism in biodiversity conservation is especially significant in Southern nations because many Southern nations have particularly rich biodiversity but...protected area agencies with few funds and little political power. Northern tourism can provide incentives to conserve biodiversity through foreign exchange and economic opportunities for Southern governments and local communities. (Buckley 2002)

Box 3: Sustainable Tourism and Biodiversity Conservation

Sustainable tourism (which draws on the principles of ecotourism) can directly contribute to biodiversity conservation by:

- offering less destructive livelihood alternatives to local communities and landowners in buffer zones and conservation corridors, away from unregulated logging, intensive cattle-ranching, monoculture, hunting, and unsustainable tourism;
- providing an incentive for public and private landowners in critical ecosystems to permanently conserve biodiversity-rich properties, by offering revenue-producing, low-impact economic use;
- providing protected-area managers with additional financial resources from visitation and donations; and
- raising visitor awareness, promoting community involvement and interest in conservation issues, and generating political support for conservation through environmental education during travel.

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Sustainable tourism aims to...
(IUCN) notes that this can, in turn, have additional negative impacts on biodiversity, by concentrating local resource use in smaller areas and/or by undermining local resource management systems (WCPA 2000).

In addition to resource depletion and habitat disruption, littering and water pollution are problems associated with mainstream tourism that can have negative consequences for biodiversity conservation. The littering problem is exacerbated in remote areas, where waste collection can be logistically difficult (e.g., on mountains, in the middle of the ocean). Waste disposal from cruise ships has been problematic, as they have limited capacity to carry all their waste until they reach their home port, and destination ports have limited incentive (and capacity) to accommodate periodic discharges. However, “most of the major cruise lines have begun to implement comprehensive waste management programs and wastes such as glass, cardboard, aluminum and steel cans are processed onboard through crushing, reuse and/or recycling and incineration” (Sweeting & Wayne 2003). Construction of hotels, recreation, and other facilities often leads to increased sewage pollution. Wastewater has polluted seas and lakes surrounding tourist attractions, damaging the flora and fauna.

Coral reefs are at a particular risk from unplanned tourism development. Holden (2000) notes that, as well as being mined for building materials, reefs suffer from sewage runoff that stimulates the growth of algae, covering the filter-feeding corals and hindering their ability to survive. In addition, reefs are often damaged by the activities of careless tourists—as divers and snorkelers kick and stand on coral, for example, or boats and jet skis scrape the surface of the reef. Furthermore, dive/snorkel boat operators may throw their anchors into corals, and local entrepreneurs often break off pieces of coral to sell as souvenirs.

Mountains are also popular locations for tourism and, because of their fragile soils, they are particularly sensitive to environmental impacts. Deforestation from tourism (through construction, use of wood for fires, etc.) can have direct implications for habitat conservation and watershed management and can also increase the likelihood of landslides.

It is these negative impacts of unmanaged tourism development on the environment and local cultures that gave rise to ecotourism in the 1980s and 1990s as an alternative set of principles and practices to harness tourism’s economic potential for biodiversity conservation and sustainable development. During the last decade, ecotourism has emerged from small model projects demonstrating how tourism can be a catalyst for conserving nature and promoting the well-being of local peoples into a wider set of sustainable tourism principles that can be applied across a larger segment of the travel and tourism industry. However, just how far, and to what degree, these principles will ultimately be able to transform the mass tourism industry to be a more positive force for biodiversity conservation remains to be seen.

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**Box 4: Tourism’s Resource Consumption**

Using consumption averages from various countries, statistics from WTO, and estimates of national tourism in relation to international arrivals, UNEP proposed some estimates of the order of magnitude of resource consumption from tourism.

If the global tourism industry were represented as a country, it would consume resources at the scale of a northern developed country.

International and national tourists use 80 percent of Japan’s yearly primary energy supply (5,000 million kWh/year), produce the same amount of solid waste as France (35 million tons per year), and consume three times the amount of fresh water contained in Lake Superior, between Canada and the United States, in a year (10 million cubic meters).

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**Endnotes**

1. The WTTC commonly quotes this figure, although the WTO puts the figure lower. The difference reflects the difficulty in defining what is and is not included within the tourism “industry” and whether services such as transport are included in the calculation. The WTTC figure also incorporates the multiplier effect of tourism spending and therefore reflects the economic impact of the wider “tourism economy” rather than just the industry itself.

2. WSSD focused on water, energy, health, agriculture, and biodiversity (WEHAB Working Group 2002).