

Sustainable Ecotourism: The Galapagos Balance

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ABSTRACT

Ecotourism is discussed as an outgrowth of a conservation ethic that is interwoven in all fibers of modern life. Revenues from ecotourism are substantial and form an integral part of sustainable use of natural resources. The development of a management plan which is based on scientific monitoring and conservation measures is key for successful use of an environment. Galapagos is used as an example of long-term management and to demonstrate the positive and negative aspects of ecotourism.

The 1960s and 1970s saw the beginning of the popularization of the conservation ethic. Early catalysts for the conservation movement were the International Union for Conservation of Nature and Natural Resources and the World Wildlife Fund. Today the National Wildlife Federation lists 2,391 national, international, and regional conservation organizations and more are created every day. During the same period, charitable giving, a good indicator of current social trends, grew significantly for non-profit conservation organizations. The World Wildlife Fund, one of the leading conservation organizations worldwide, reports that in the ten years preceding 1995 its revenues grew from \$15 to \$68 million.

The conservation ethic has permeated every aspect of politically correct life. Clothing from natural fibers, foods grown organically, and non-polluting human-powered transportation are signs of our times. Seventy-six per cent of Americans regard themselves as "environmentalists" according to a Gallup poll reported by *E Magazine* in August 1990.

In 1992, worldwide nature tourism generated \$12 billion. In a prime example of supply and demand, the travel industry has changed drastically to capture the revenue from this fastest-growing segment of the industry, estimated in 1987 by the World Tourism Organization to be growing at 30 percent annually. While continuing to offer traditional beach and ski resort vacations, tour agencies are responding to the pressure of new consumer groups. Young professionals between thirty and forty years of age with substantial incomes, an interest in seeing the world, and a concern for the future seek travel to destinations that offer an ecological experience. Travel agencies report that high on their list of "hot spots" are places where endangered or vanishing species can be found. Jerry Mallett, president of the Adventure Travel Society which represents nature-

based tourism, reported there are 9,000 adventure-travel organizations in the U.S. specializing in activities such as horseback trips, bungee-jumping, whale-watching, swimming with dolphins, catch-and-release fishing, llama trekking, and rain forest canoe trips. In 1992, the Travel Industry Association of America, the largest tourism trade group in the U.S., estimated the market for ecotourism at 43 million Americans.

The demand for ecotours has changed the travel industry—not only in the destinations it offers, but also in the way it packages tours. Clientele want to do more than relax by the pool in a sunny location; they want to contribute something to a place, take away a special memory, or enhance their education. Ecotours provide reading lists, lecturers, opportunities to work side by side with a naturalist in a field setting. By adding ecotours to its agenda, the travel industry has been able to include a segment of society that is willing to live in moderate accommodations and travel in difficult areas to achieve a certain experience. The benefits to the industry are enormous in terms of broadening its scope of services, especially when compared with industry standards before Earth Day 1970.

Tour providers and hotels are responding to pressure to be environmentally conscientious in many ways. The Intercontinental Hotels Group published a 220-page operating manual for eco-correct hotels that has resulted in a recycling and a CFC-use reduction campaign. Some tour operators give a portion of their profits to local conservation organizations. Tour companies organizing travel in the Galapagos provide information on the Charles Darwin Foundation and help solicit contributions for science and conservation in the Islands.

Ecotourism is an integral part of a sustainable-use approach to the environment and is at the root of many international efforts to set aside protected areas in the form of national parks and reserves. In Ecuador, managed use of the Galapagos National Park led to an agreement between the Charles Darwin Foundation for the Galapagos and the Republic of Ecuador to establish a research station in the Islands that provides a scientific basis for conservation by the Servicio Parque Nacional Galapagos.

Education of the local population and visitors in the natural history of the Galapagos is a goal of the Station and the Park and programs are conducted in the Islands and on the mainland. An intensive course for naturalist guides, which is required to supervise visitors to Park sites, is conducted annually. Guides in the Galapagos are on every ship. They keep visitors on defined paths, give daily briefings, and accompany them on-site to explain and expand the experience. The ecotourist, in Galapagos as elsewhere, comes away

Travel to exotic places to experience nature has followed on a burgeoning interest in and concern for the environment.

from the visit with a greater grasp of environmental issues and dedication to conservation.

The advent of ecotourism has fostered international cooperation. Working toward the common goal of preserving the environment and sustaining ecotourism brings countries together and fosters technology transfer. Planning for such efforts as Debt-for-Nature swaps, particularly in Ecuador, has included detailed exchanges on natural resource management and analysis of national readiness in the sciences.

Finally, ecotourism benefits the local country with increased revenues. The nature traveler spends more money (\$1,000 in two weeks) in a country than the recreational traveler. While many ecotourist ventures have received criticism for not providing appropriate revenues to local people, most return a significant profit to the host country. Comparing local Ecuadorian and foreign profits from a typical tour to the Galapagos the U.S.-owned operators and the in-country service providers fare about equally. Revenues are shared by the U.S.-owned tour company and the Ecuadorian one; the international airfare benefits a U.S.-owned company; the hotel profits are Ecuadorian as are the profits from ship-based accommodations, meals, and souvenirs purchased in the Islands. Though the average ecotourist sees himself or herself as an environmentalist, it is not possible to visit any site on earth without some impact.

Besides being "big business," ecotourism fosters managed care for the environments on which it depends.

THE GALAPAGOS SITUATION

Tourism in Galapagos has developed under a management plan that allows limited numbers of tourists at selected sites in the National Park. The Park makes up 97 per cent of the land area of the archipelago. Since the advent of organized tourism in the mid-1960s, the number of tourists has increased from 4,500 in 1970 to 26,000 in 1987 and to 41,000 in 1991. Methods for handling tourists include ship-based accommodations and controlled landings supervised by trained guides.

By and large the main impact of tourists to the almost sixty visitor sites in the Islands is some damage to geological features, trail wear at most of the sites, and some erosion. While there are worries that nesting birds in proximity to tourist areas have increased heart rates and elevated temperatures (in the birds), there are no studies that show nesting success has significantly changed (Coulter, M. personal communication 1995). There are reports of floating trash from tour ships and plastics which have strangled sea lions and seabirds. Indigenous culture was impacted. Traditional uses of the land and sea gave way to tourist-related work, such as supplying

small boat travel in the islands and selling food, goods, and services to tourists.

The indirect impacts of the industry have been enormous. Ecotourism has brought with it increasing damage and threats from exotic species introductions, human population growth, and extraction of resources for export markets—all of which can lead to reduced biodiversity and species loss.

The delicate balance of island ecosystems in the Galapagos was assaulted by introduced animals and plants from long before Darwin visited in 1835. The literature is replete with discoveries of exotic species of vertebrates, invertebrates, and plants, often from the activities of the local populations. Ship traffic, for tourism or otherwise, has resulted in the introduction and spread of exotic species from island to island.

Immigration from the mainland of Ecuador has increased as the tourism-based economy has grown and outstripped even the capital city of Quito as a high income area. The impact on towns such as Puerto Ayora on Santa Cruz Island was significant. City services were strained by the quadrupling of the Galapagos population to 14,000 in 1995. Crime increased. New immigrants from Guayaquil and other towns on the mainland do not share the conservation ethic of the Galapaguenos in respecting native fauna and flora.

These new immigrants are attracted to the Galapagos to exploit its marine resources for export to the mainland and to the Asian food and aphrodisiac markets. They pose the single greatest threat to the marine environment of Galapagos, extracting shark, lobster, groupers, sea cucumbers, sea horses, black coral, sea urchins, and sea lions at the industrial level in sharp contrast to artisanal fisheries. Such species-specific fisheries run the risk of overharvesting and causing the populations of these significant marine species to crash. Such losses can alter marine food webs and even affect the marine-dependent terrestrial fauna, e.g., marine iguanas, cormorants, and penguins.

Recently, the Charles Darwin Research Station and Galapagos National Park Service advised the government of Ecuador to close the harvest of sea cucumbers to protect the population from depletion. The “pepineros” (sea cucumber fishers) rioted and in January 1995 the Director of the Station was taken hostage along with other Station and Park workers for a brief period.

With tourism comes development. In the Galapagos, every possible effort is made to limit development, but the growth of tourism has necessitated the expansion of an airport on two islands and the extension of road systems. The effect of such fragmentation on species is well documented at the Biological Dynamics of Forest

Environmental education and global cooperation are important spin-offs from ecotourism.

Fragments program site in Manaus, Brazil. According to the WCMC's 1992 Global Biodiversity report, habitat destruction impacts 50 per cent of threatened island species, and Galapagos is no exception. If it were not for giant efforts on the part of the Darwin Foundation and the Galapagos National Park to thwart attempts at development, there is little doubt that the fragile ecosystem of the Galapagos would long since have been converted to other uses.

Sustainable ecotourism has been practiced for more than twenty years in the Galapagos with relative success. A recent appeal by Craig MacFarland, President of the Charles Darwin Foundation for the Galapagos, provides insights into the need for constant scientific monitoring of animal and plant populations and habitats and attentive management of ecotourist sites. He warns about:

- the need to improve zoning for the Park;
- impacts of new kinds of tourism, such as day tours;
- expansion of tourism to include larger-capacity boats;
- decline in conservation ethics among new boat operators and guides;
- limiting numbers of tourists;
- competition between tourists and natives for basic services;
- the need for adequate monitoring and evaluation of tourism impacts and adjustment of visitor management.

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It is clear from the Galapagos example that sustainable ecotourism requires a balance between conservation and development. The maintenance of this balance through informed natural resource management and visitor control requires sustained observation and monitoring of natural and human populations and impacts. All of this must function within a context of cooperation between the local, national, and international interests that come together in an ecotourist venture. All must function with a clear vision of the importance of maintaining the beauty and integrity of the natural system that is the focal attraction.

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Marsha Sitnik is Science Program Administrator for the National Museum of Natural History, Smithsonian Institution, and manages the Museum's programs studying biodiversity. Since joining the Smithsonian in 1970, she has developed science and conservation programs around the world, especially associated with nature reserves, parks and World Heritage sites. All programs within her scope as manager of Biodiversity Programs take Smithsonian science to the people, in the U.S. and abroad, and incorporate conservation ethics. Her efforts in such outreach were recently recognized by the John D. and Catherine T. MacArthur Foundation by a two-year grant to teach mangrove ecology to the high school teachers of the country of Belize. She worked for the Charles Darwin Foundation for the Galapagos Islands and helped plan for the growth of tourism from a trickle in the 1970s to a deluge in the 1990s. In the early 1980s she helped draft plans for the Seychelles Islands Foundation to manage conservation and science. Since 1985 she has administered the Caribbean Coral Reef Ecosystems program in Belize and has participated in planning for ecotourism development. Her current interests include Myanmar, China, and Cuba where she is developing science programs for the Museum and studying the growth of tourism. The recipient of numerous achievement awards from the Smithsonian and other organizations, in 1996 she was one of 150 Unsung Heroes chosen as part of the Smithsonian 150th Anniversary celebration.

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