

9 REVIEW

Nature-based Tourism¹

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Ecotourism is big business. It can provide foreign exchange and economic reward for the preservation of natural systems and wildlife. But ecotourism also threatens to destroy the resources on which it depends. Tour boats dump garbage in the waters off Antarctica, shutterbugs harass wildlife in National Parks, hordes of us trample fragile areas. This frenzied activity threatens the viability of natural systems. At times we seem to be loving nature to death (Berle, 1990).

This quotation, from an editorial in the American nature conservation journal *Audubon*, at once expresses the hopes and fears many people hold for nature-based tourism. Is it the ideal, low impact, high value, dream tourism sought by host communities the world over? Is it ecologically sustainable development? Can it form the basis for community tourism in developing countries? Will it further destroy the ailing conservation programs by adding internal pressures to parks already under assault from external forces? Can we live with it? Can we live without it?

In this chapter the essential elements of nature-based tourism are explored and examples from around the world help illustrate its diversity of form. Existing literature is reviewed and an assessment made on the present state of knowledge about ecotourism and some of the most pressing issues awaiting research. An overall management perspective reflects the intimate link between nature-based tourism and nature conservation.

Nature and Tourism – The Context

The primary role of nature in attracting tourists to specific destinations is now well understood and in this broad sense most tourism may be described as nature-based. For example, in Africa the work of Ferrario has identified the dominance of natural resources: using features listed in 10 travel guides, a total of 2,100 items were classified into 21 'resource' classes. The three most important classes were all natural (Ferrario, 1982).

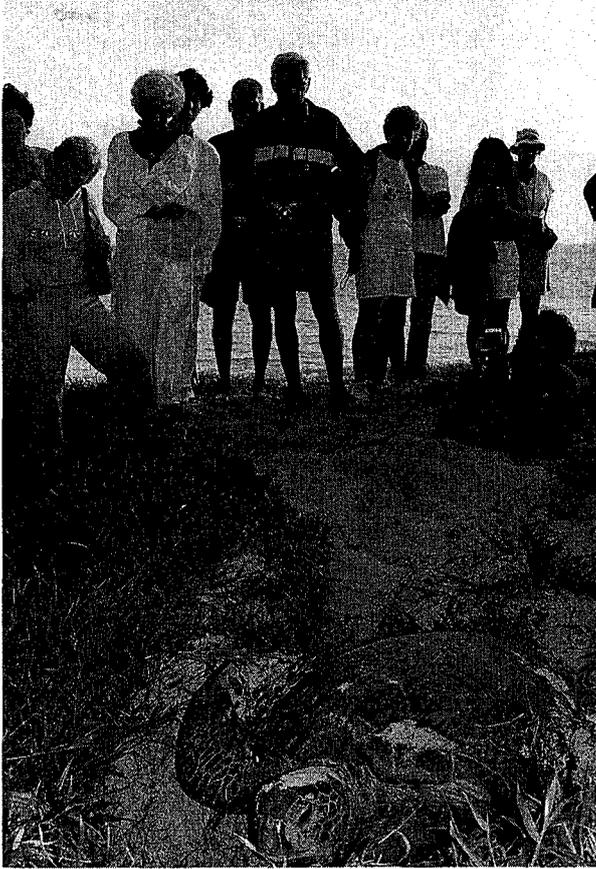


Plate 9.1 Group observing green turtle laying her eggs, Heron Island, Australia (courtesy of TravelLearn)

A survey of international tourists to Australia showed that 55.8 per cent of visitors viewed Australia's tourist assets as the 'natural environment' (Tisdell, 1984). During 1989 the Tourism Council of the South Pacific prepared four brochures in association with its South Pacific Islands Travel Manual (Dive, Fish, Adventure and Nature). All brochures are dominated by natural environment photographs and this emphasis in advertising is generally true throughout the travel industry. In the United States a survey of 'non-consumptive wildlife use' reported a total of 29 million US citizens participated in approximately 310 million nature trips away from their homes in 1980 (Boo, 1990, p.3). These figures include more than 1 million people making over 4 million international nature trips, very many of which are to Central and South America. Costa Rica, for example, has a very significant tourism industry based on its national park system – the best in Latin America. The remarkable array of flora and fauna, some 5 per cent of all the planet's biodiversity, seems well protected with 12 per cent of the land area

in national parks and a further 15 per cent in other refuges and reserves. It is not surprising that tourism provides the third largest source of foreign exchange in the country, and that there are very many nature tour companies. Apart from the 16 national parks plus additional government reserves, there are at least 15 significant privately owned nature reserves which cater for nature tourism (Sheck, 1990, p.206).

The African wildlife connection is well known (Luard, 1985). The singular importance of encounters with wildlife has been documented (Valentine, 1984) including the role of crocodiles in tropical Australian tourism and bears in Canada and northern USA, whalewatching (Shaw, 1987) and 'gorilla tourism' (McNeely et al., 1990). In the latter case, the African country Rwanda gains over one third of its foreign exchange revenue from nature-based tourists visiting the Volcans National Park to see gorillas.

The importance of wildlife to people might be illustrated by the expenditure of some US\$14 billion annually on wildlife viewing, photography, travel and feeding of wildlife (Vickerman 1988). This US Fish and Wildlife study included trips only if they were primarily for wildlife viewing. It did not include supporting equipment values. Other indications of the perceived attractive power of wildlife in tourism developments include the hotel in Kakadu National Park which is shaped like a crocodile and the numerous concrete and fibreglass models of animals used throughout the tourism industry. Walt Disney was perhaps one of the first to recognize this and certainly a person who made much from people's love of wildlife.

Apart from this well established link between most tourism and the environment, there has recently been an increasing focus on 'nature-based tourism' as a kind of special interest tourism, evidenced by a very high level of interest in and recent publications on the topic (e.g. Ingram and Durst, 1987, 1989; Laarman and Durst, 1987; Kutay, 1989; Boo, 1990; Goudberg, Cassells, and Valentine, 1991). The fact that this is a recent phenomenon is supported by the literature surveyed for this review – of the over 100 publications consulted, 60 per cent were published in the last three years. There had previously been numerous expressions of concern about the growing role of tourism in protected areas (for example Budowski, 1976; Coleman, 1980; Lucas, 1984; Marsh, 1987; Bateson, Nyman, and Sheppard, 1989; Neumann and Machlis, 1989) and responses include the development of guidelines to help park managers deal with tourism, especially in developing countries (McNeely and Thorsell, 1987; Thorsell and McNeely, 1988).

The focus of this chapter is to provide a framework for analysis of nature based tourism and to discuss the relative merits of particular options. A basic premise is the underlying need for nature conservation at all levels. Further, it is recognized that there is a great interest in nature-tourism as a way to achieve symbiosis between nature conservation and local development – such interest being expressed by both local communities and by conservation agencies (Young, 1986). The results of this review suggest not enough is known about nature tourism to express confidence that it might

readily achieve either of these goals. Despite this uncertainty, or perhaps because of it, the experimental development of nature-tourism is seen as a valuable option for those communities with the resources and the inclination. This chapter is meant to be of practical value in better understanding the challenges inherent in nature-based tourism.

Defining Nature-based Tourism

There is a plethora of expressions for nature-based tourism already in the literature. Laarman and Durst (1987) use the term 'nature travel' (or sometimes 'nature-oriented tourism') to refer to a style of tourism which 'combines education, recreation and often adventure'. Boo (1990) in her major study of Latin America uses the title 'eco-tourism' as synonymous with 'nature tourism' which she uses throughout the work and defines as 'travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations' (adopted from Ceballos-Lascurain). Lucas (1984) defines nature tourism as 'tourism which is based on the enjoyment of natural areas and the observation of nature' and further specifies that such tourism 'has a low impact environmentally, is labour intensive and contributes socially and economically to the nation'.

Nature-based tourism is also a subset of a larger class of tourism styles or developments much discussed by social analysts. Here the concepts of 'alternative tourism' (Gonsalves, 1987) and 'appropriate' tourism (Richter, 1987) encompass a critical concern about large scale mass tourism and its impacts on people and places. Other terms which have been applied to ecotourism and nature tourism include 'responsible' or 'ethical' tourism (Kutay, 1989), 'environment-friendly travel' (Borst, 1990), and 'green tourism' and 'sustainable tourism' (Lane, 1990). The evolution of concerns about the impacts of tourism on the environment has produced other perspectives also, for example the entire field of nature tourist ethics (Anon, 1989a, 1989b; Graham, 1979). Despite the complexity implicit in this array of terms, a useful starting point is the relatively simple definition:

nature-based tourism is primarily concerned with the direct enjoyment of some relatively undisturbed phenomenon of nature.

For such tourism to be ecologically sustainable it must be appropriate for the specific location and should produce no permanent degradation of the natural environment.

Ecotourism Destinations and Activities

Examples of nature-based tourism help illustrate the diversity of activities, the range of destinations and the various styles of travel associated with it.

Table 9.1 Dimensions of nature-based tourism

Dimension and variation	
Experience	Nature-dependency (dependent, enhanced) Intensity of interaction (dedicated, casual) Social sensitivity (intra-group dynamics) Duration
Style	Level of infrastructure support (field, base) Group size and type Cultural interaction factor Willingness to pay Length of visit
Location	Accessibility (remoteness) Development contribution (city, village) Ownership (private, government) Fragility (sustainable, capacity)

In a study of nature-oriented tour operators, Ingram and Durst (1989) analysed the promotion of specific activities and their results show trekking and hiking the most commonly included activity in advertising (72 per cent of operators) closely followed by birdwatching, nature photography, wildlife safaris and camping (all over 60 per cent). Many quite specialist activities feature in the promotion including mountain climbing, botanical study, orchid study, butterfly collecting and river rafting.

The destinations are also very diverse. For this sample of USA operators, Kenya came in tops with Nepal, Tanzania and Puerto Rica providing high levels of 'activity-destination opportunities'. Other places included were India, China, Brazil, Costa Rica, Mexico, Paraguay and Ecuador. Some places are almost shrines for ecotourists of the 'environmental pilgrimage' type; for example the Galapagos Islands (Kenchington, 1989). The spatial spread of destinations of a single tour operator might be very great indeed. For example the 1990 tours for Peregrine Bird Tours (an Australian company) include Canada (northern), Israel, Nepal, Tibet, China, Kenya, New Zealand and Cape York Peninsula (northern Queensland). Other operators frequently offer similar geographic diversity in their nature tours.

Ingram and Durst (1989) also report the variety of accommodation style and their sample ranged from rural village through hostel, camping and luxury hotels. According to Laarman and Durst (1987) 'nature-oriented tourism has hard and soft dimensions in two senses' and these relate to the extent to which the tourism is dedicated or casual on the one hand and difficult or easy on the other. Thus a scientific study of butterflies is hard ecotourism while a casual (recreational?) interest in wildlife generally is soft. On the other axis if the nature tourist is 'roughing it' – by camping for example and preparing meals, this is seen as hard compared with the equally nature-based tourist who sleeps easy in a hotel with all meals provided – the soft option.

Understanding Diversity in Nature-based Tourism

It should be clear that nature-based tourists are not homogeneous and management agencies which act as though tourists are all alike create many problems for both tourists and themselves. Belief in the stereotypic tourist has also led to peculiar management practices such as access restrictions based entirely on numbers with no qualitative modifier. In classifying the range of tourists and operations which might be encompassed by the term 'nature tourism' it is apparent that there are many dimensions in which variation might occur. Initially it might seem that the most important element is the degree to which the experience depends upon nature. In a discussion on research needs for the management of recreation in tropical rainforest reserves, Cassells and Valentine (1991) discussed appropriate activities using a tripartite division:

- those activities (experiences) dependent on nature;
- those activities (experiences) enhanced by nature; and
- those activities (experiences) for which the natural setting is incidental.

For example, people seeking to observe animals in the wild (e.g. Hornbills) require natural environment (e.g. Khao Yai National Park) to enjoy their experience. Such birdwatching is clearly *dependent* on nature and that dependency is the basis of successful tour operators. Camping is an activity frequently *enhanced* by nature – people usually prefer to camp in a forest rather than a quarry. Preferences like this do depend upon nature but the activity might be possible with equal satisfaction for some users without a purely natural setting. If a person's primary interest is a cooling swim then the setting may be *incidental*, and relatively unimportant assuming the water is unpolluted! It is also true that there may be many activities which are ruined or at least degraded by nature – for example the presence of ants at a picnic or sharks at a beach. Nature-based tourism as a type of special interest tourism is mainly nature-dependent.

While this dimension of dependency is a very useful starting point, it is also clear that there are many other dimensions of value in studying nature-based tourism. Table 9.1 is a first approximation of some useful dimensions, divided into broad categories of experience, style and location. These will be of particular use in designing research programs or management plans and for most of these dimensions little is known.

An example might help illustrate the concepts outlined in Table 9.1. One class of nature-based tourism includes 'highly dedicated specialist birders', a market which is already well developed and expanding and can involve considerable cash flow (Valentine, 1984; Vardaman, 1982). Such birders ('twitchers' in some parts of the world – cf. Oddie, 1980) are frequently impatient with the presence of lesser skilled individuals and desire small group sizes of birders with a comparable experience base. Satisfaction comes almost entirely from nature observations, or related activities. By

contrast a 'nature club tour group' would probably tolerate a wider variety of skills; would not focus simply on birds; and would be comfortable with a larger group and more variable individuals. A third example might be non-specialist tourists whose interest is in 'seeing somewhere different from home'. These 'exotica' tourists may also have an interest in nature and typically make up a high proportion of visitors to nature destinations accessible by road (e.g. national park front country). Satisfaction for this group comes mainly from the relatively superficial interaction with nature and the sense of discovery associated with it. These three examples illustrate a further point: that the impacts of the experience on both the participant and the environment will vary depending upon the dimensions outlined in Table 9.1. Certainly different groups would need very different support, and managers might need to design distinctive interpretation for each major group of users.

Although providing a potential area for future research, the immediate broad issue for many developing tourism destinations is the desirability or otherwise of nature-based tourism. What are the prospects and the problems?

Issues and Prospects for Nature-based Tourism

Social Carrying Capacity The dimensions listed in Table 9.1 draw attention to the possible characteristics of nature-based tourists. Wilson and Laarman (1987, p.1) point out that 'nature-oriented tourism usually is constrained by low social carrying capacity. The nature-oriented tourist tends to perceive crowding as a problem, not tolerating large numbers of other nature-related tourists'. The implications of this are clear – such nature-based tourism must be low volume and will have limited prospects for growth. It will also need very careful management if it is to be sustainable. There are very few tourist or resource management agencies with the skills and philosophy to address this issue. In this context it is instructive to note that the Great Barrier Reef Marine Park Authority has recently modified the management zones (Valentine, 1986) by adding a new category for 'wilderness'. Some areas will be permitted to have tourist fixtures and large numbers of visitors, but others will be free of them. This reflects the growing awareness of intergroup conflicts and the different reactions of visitors to built facilities on the reef. It is also important to recognize that different environments may have very different social carrying capacities; tropical rainforest for example is a very effective screening vegetation and may be able to accommodate many more wilderness users or ecotourists than an equivalent area of open woodland (Valentine, 1982).

Environmental Carrying Capacity Virtually every environment has the capacity to support nature-based tourism and there is growing interest in appraising the specific prospects in almost every country; partly due to a

perception that this may well be a more sustainable form of tourism than any other. For example, in a discussion of the values of tropical rainforest it has been claimed that the tourist potential of rainforest equals that of the east African game parks (Allen, 1975) and the review by Boo (1990) gives detailed accounts of central and southern American prospects, many of which focus on rainforest. To a large extent the rainforest national parks of Costa Rica are the driving force behind tourism in that country. But even the Antarctic has seen a rapid increase in tourism over the past two decades, essentially based on the spectacular natural scenery and wildlife (Gell, 1989, p.82; Wace, 1990; Hall, forthcoming). In 1988 there were some 7,200 tourists, most via cruise ship from Chile and Argentina at a cost of between US\$3,000 and US\$10,000 each (Kutay, 1989). A rather more expensive tour was taken by eight tourists who paid US\$35,000 each for a three hours Antarctic Airways flight and brief landing at the South Pole! Much concern has been expressed about the potential impacts on the Antarctic environment and an example of that can be seen in the decision of the Australian Conservation Foundation in July, 1990, to adopt a policy opposing all commercial tourism to the continent. One key element in the debate is the prospect that at least some tourists in Antarctica (carefully managed) might act as watchdogs on the activities of others who use the continent for geopolitical, resource or scientific reasons. On the other hand many people favour the notion that there may be at least one part of the planet not plagued by tourists.

Economic Impacts Peak nature experiences are extremely valuable and may command high willingness to pay values. For these kinds of nature-based tourism, the 'threshold' or 'excluvist' approach adopted by Bhutan may be valuable (Dixit, 1989, p.4). That country imposed a national quota (1988) of 2,400 visitors per annum, required US\$200 per day per person expenditure and has minimal leakage of its 'rarity value' dollars. Some kinds of nature-based tourism undoubtedly share similar characteristics – exclusiveness and rarity dimensions. Most studies of nature-based tourism conclude that countries fail to collect the full potential income from such visitors (e.g. Brockelman, 1988). The other side of this issue is the tendency for societies to undervalue the worth of national parks and other protected areas (Valentine, 1989). Ecotourism represents an excellent mechanism for societies to recover some of the costs of a national park system.

In contrast to the environmental and social limits to nature-based tourism, the economic potential of nature-tourism may be extremely high. It is therefore often referred to as an example of 'low volume high value' tourism. This high value aspect can be seen in the kinds of costs usually associated with specialist nature tours. For example a bird-watching trip of three to four weeks in a developing country might cost around Aus.\$5,000 per person. In 1990 Peregrine Bird Tours was running a 27 day trip to Nepal, Tibet and China for Aus.\$7,572 (ex Australia). The 23 day Kenya trip was Aus.\$7,313. In each case the ground content was just over 75 per cent of the total. Also

in 1990, specialist nature trips to the Amazon with the Sierra Club (USA) cost around Aus.\$3,700 for 14 days not including airfares while an African wildlife trip came in at over Aus.\$4,000 ground costs for two weeks. These figures are fairly typical of nature-based group tours. An extreme example of high expenditure for nature-based tourism might be seen in the single Texan birdwatcher who in 1980 spent 10 days birding around the world (Valentine, 1984). This trip began in northern Queensland and planned to yield 1,000 different species of birds in just 10 days. After very rapid visits to Australia, Kenya, Germany and Peru the target was finally achieved (1,041 species). The same nature-tourist had earlier spent Aus.\$50,000 seeing over 700 species in the USA in a single year.

But nature-based tourism may also be relatively inexpensive. The extreme thrills of tiger watching in the national parks of India is available at very moderate rates for western tourists, especially the backpacking style traveller. In Kanha National Park (Valentine, 1983) and in Bandhavgah National Park (both in Madhya Pradesh) either government or private facilities can provide a 10 day visit with ground costs between Aus.\$20–\$100 per day. There are few nature tourism experiences so intense and rewarding as stalking a tiger on elephant back and it is highly likely that consumer surplus remains very high. Another characteristic of nature-based tourism is that such tourists 'are generally more accepting of conditions different from home than are other types of tourists' (Boo, 1990, p.13). It is therefore likely that relatively low capital environments (i.e. developing countries) would experience less leakage from nature-based tourism than other kinds of tourism.

Political and Management Issues For many people the first example of nature tourism which springs to mind is the African wildlife safari. Such tourism may be seen as the 'soft' version of the big game safaris of earlier eras with cameras replacing rifles. Apart from the high economic values of African wildlife tourism (Western and Henry, 1979) there are interesting links between international ecotourism and nature conservation. It was Budowski (1976) who first articulated the idea of symbiosis between conservation and tourism, more recently expressed as 'wildlife pays so wildlife stays' (Kutay, 1989). In recent years one of the motivations for nations to nominate areas for World Heritage Listing has been a perceived link between that designation and the attraction of international ecotourists.

A related aspect is the view that ecotourists may be more desirable than mass tourists. In developing countries in particular there may be real advantages in attracting nature-based tourists but such policy-based discrimination is never easy (Richter and Richter, 1985; Richter, 1989). On the other hand ecotourists demand high quality information about nature – material not readily available, at least in most developing countries. Brockelman (1988, p.211), in his excellent review of nature conservation in Thailand, highlights the failure of managers to provide appropriate support for the 'very large and growing numbers of young affluent Western tourists

interested in nature'. In this regard the World Wide Fund for Nature gave help in 1989 to the Conservation Data Center (Mahidol University) for the production of two excellent bird guides (for Doi Inthanon National Park and Khao Yai National Park) which are now sold in the parks.

Wilson and Laarman (1987, p.11) identify several beliefs about the characteristics of nature tourism (at this point there are too few studies to accept such beliefs as anything more than working hypotheses). The first, a kind of motherhood assertion, is that nature tourism is a 'wholesome kind of tourism' with a good type of tourist. Given the well known social problems of tourism in most parts of the world, this characteristic, if true, would be seen as highly desirable by host communities. A second hypothesis is that nature-based tourism disperses income more widely through the country (away from capital cities). This also may prove particularly valuable for some societies but of course will be constrained by the environmental resource. Finally, there is the belief that such tourists stay longer. The limited data presented by Boo (1990) suggests they may not stay longer but they might spend more. However, the extra expenditure may well be in high leakage areas (e.g. travel).

Nature-based tourism in its many forms frequently includes a strong educational component (Laarman and Perdue, 1988). There are numerous local and international nature-based education programs which develop links with nature conservation management agencies, or research institutes, and provide a service. Such ecotourists pay for the privilege of working as volunteers on nature-based projects and it appears this style of tourism is increasingly popular (e.g. Earthwatch, Sierra Club, Operation Raleigh). This might be one way by which managers can overcome the failure to use tourists enough to help conserve nature (Thorsell and McNeely, 1988).

Problems of Nature-based Tourism

Environmental Impacts Amongst the more popular discussions of nature-based tourism there is often a heroic assumption that it is inevitably environment friendly. This is far from the truth and, while it may appear ideal compared with many forms of mass tourism, there are significant problems. Many of these can be collectively identified as the need for high quality management. For example, an expression employed by United States Fish and Wildlife Service is 'non-consumptive wildlife use', which might imply no threat to the wildlife. Unfortunately, unintended negative effects of wildlife watchers have been well documented throughout the world (Webster, 1980; Duffie, 1981; Henry, 1982; Valentine, 1984). Even in the case of whales there are examples of harassment by watchers requiring the legal controls now in place in the waters off Hawaii and off Queensland, Australia. Very little is yet known about the tolerance levels of wildlife for human contact in the wild. There are numerous examples of tolerance failure

amongst crocodiles, sharks, bears and tigers but little information about the less threatening and perhaps more threatened species. A useful account of the conflicts between bears and people will be found in Jonkel and Servheen (1977) and the unhappy story of grizzly bears in Canadian Parks is examined by Cottingham and Langshaw (1981). In North America, Ream has documented numerous examples of human-wildlife conflict (1978, 1980).

Apart from this aspect there is the more complex issue of environmental degradation. Cole has been quantifying some of the more significant human impacts on wilderness in a long series of studies (1989a, 1989b). How much damage can the environment take? How much degradation will the 'desirable' tourist accept? Both the ecological and experiential domains need careful study if nature-based tourism is to be sustainable. There is already evidence that as environments become damaged or use level and type changes, some tourists are displaced.

One of the greatest difficulties is to determine and maintain an appropriate level of tourism. How many people is enough? In an economic study of tropical forest tourism, Healy (1988, p.54) urges caution in expanding the volume of tourists at his study sites and suggests that increasing charges might be a more attractive alternative. The lure of expansion is very difficult to resist. One of the more poignant ironies in nature-tourism concerns the California over-wintering sites for the spectacular aggregations of the Monarch butterfly. Long the focus of a large nature-tourism industry, one of the local motels (Butterfly Trees Lodge) lost all its over-wintering clusters because expansion of units modified the area sufficiently that the butterflies have not returned (New, 1987, p.30).

There are many other examples of serious conflict between nature-based tourists and the particular aspect of nature they seek. Amongst the best known are the problems of interference with predator behaviour in the game parks of Africa (MacKinnon, et al., 1986, p.85). Henry (1982), discussing Amboseli National Park in Kenya, has identified a problem of potential conflict between nature tourists and the wildlife they love. By measuring the length of time visitor vehicles were stationary and identifying the animal species associated with the stop, he demonstrated that there were large variations in the focus of nature tourism on different animals. Six of the 56 species of large mammals in the park account for 80 per cent of the total stationary time – the six being lions, cheetah, elephants, rhino, giraffe and buffalo. The combined total of lions and cheetahs accounted for more than 50 per cent of all stationary time while lions alone produced 28 per cent of the stops! There are also reports of hyenas in Serengeti National Park using the presence of 'stationary minibuses as a means of locating and robbing cheetah families of their prey' (Edington and Edington, 1986, p.40). One point which was not made by Henry (1982), is that the decision on where and when to go and stop is made by the tour operators rather than the individual tourists. This suggests, given that the majority of visitors are in commercial operators' vehicles, the management agency must work with

Table 9.2 Negative impacts of nature tourists in national parks

Factor	Impact on nature	Effects on experiences
crowding	environmental stress, animals show changes in behaviour	irritation, displacement
development	built structures intrude on visual quality	reduced aesthetic values
roads and tracks	habitat loss, drainage change, barriers to animals	aesthetic scars
access – motor vehicles, powerboats, pedestrian	disturbance to animals, loss of quiet, trail erosion disturbs wildlife	noise pollution, loss of wilderness intergroup conflict, aesthetic impact
antisocial activity (noise, radios etc.), litter	interference with natural sounds, wildlife impairment of scene, habituation of wildlife to garbage	irritation aesthetic loss, health hazard
vandalism	mutilation	loss of natural beauty
vehicle speeding	wildlife mortality, dust	aesthetic values, reduced safety concerns
driving – off-road and night	soil and vegetation damage, disturbance to wildlife	loss of wilderness, disruption of wildlife viewing
feeding animals	behavioural changes, poor diet	danger to tourists
souvenir and wood collection	removal of natural attractions, disruption of natural processes, loss of habitat	perceived inappropriate behaviour in national park
powerlines	destruction of vegetation, erosion	aesthetic impacts.

Source: based partly on Thorsell and McNeely, 1988.

the operators, as well as the tourists, to address the problem. Careful management is necessary to control this situation and to enable the wildlife to continue their normal lives.

Similarly, the presence of Mexican species of birds in the Chiricahua mountains of southern USA has prompted a concentration of birdwatchers which at times overwhelms the birds. A sign erected by the National Parks

Service warns birders to avoid disturbance to the birds but not everyone is careful (Valentine, 1984). Table 9.2 sets out a number of the types of potential impacts of nature tourists in national parks and other wildlife areas.

Community and Social Impacts Another dimension of concern is the impact on local communities (O'Grady 1990). Nature-based tourism is sometimes viewed with resentment by local people, especially in developing countries where the tourists tend to be affluent and not local while the local people may be very poor. Thus Mishra (1984, p.201) notes that most visitors to Chitwan National Park in Nepal are non-Nepalese and goes on to claim these 'are outsiders who have little interest in local problems'. Included amongst the local problems are human deaths inflicted by park wildlife (rhinos 3-5 per year and tigers 1 per year), as well as crop destruction from rhino trampling. Mishra also notes local price rises and little employment helps build local resentment against this nature tourism. In such circumstances the National Park may be viewed as being against the interests of the local people – as places for tourists only. Similarly, there is great resentment from the locals surrounding the management of Dudhwa National Park in India. This is not surprising when in four years 93 people were killed by tigers, and even more so when the government pays compensation of Rs5,000 per death but fines locals Rs50,000 if they kill a tiger! If the conservation is seen as primarily for tourism then it is likely problems will arise. 'One has to consider that pure tourism-based nature conservation is mainly for privileged visitors and usually outside the control and benefit of local people' (O'Grady, 1990, p.40).

Leakage of Benefits In his review of an African example, Lusigi (1984, p.141) points out 'little of that [tourism] money directly benefits the local populations surrounding the park' thereby leading to resentment, in this case exacerbated by a lack of resources to purchase the necessary bus to join the tourism industry and made more irksome for the people by a government-required permit to enter the land they have previously always used.

In developing countries in particular, there will be a need for novel skills amongst the local communities if they are to benefit from nature tourists. Language skills and natural history skills must be added to existing environmental skills and the necessary training programs are not in place. One consequence of the absence of such skills is the dominance in existing nature-based tourism of operators from outside the host country. This introduces higher levels of leakage and minimizes the scope for local control and benefits. As Boo (1990, p.36) points out, even if willingness to spend money is high amongst nature tourists, the extent to which this translates into more local dollars depends very much on the organization of the tourist industry. In principle, at least, nature-based tourism should perform well as a 'community tourism' candidate but in practice much local, regional and national skill will be needed.

Examples of Nature-based Tourism

There is an extraordinary level of interest in nature-tourism in developing countries and this seems particularly true throughout the Asian-Pacific region as well as in Central and South America. But nature-based tourism is also well established in the industrial nations throughout the world and although conditions vary, there may be many lessons to be learned which cross cultural and biogeographical boundaries. Despite the level of interest little is known about the appropriate styles of nature tourism, largely because so little research has been undertaken. In the following section some examples of nature-based tourism are given with brief comments on each as a way to identify some of the successful and some of the less successful elements. Note that many of these overlap with other types of special interest tourism such as adventure travel, sport tourism (see Chapter 11), and cultural tourism (see Chapters 5 and 7). But some of the more fascinating are very specialized, as for example attempts in Sikkim to focus on specialty ecotourists by organizing 'orchid treks' and 'bird treks', and the specialist tours to see the birds of paradise in Papua New Guinea.

Island Bird Sanctuary Bird concentrations are frequently spectacular and ocean islands provide some opportunities for limited tourism. Skomer Island off the Pembrokeshire coast of Wales is a Nature Reserve with access controlled by the daily ferry. A quota of 100 visitors per day has been established and a hardened walk path has been completed (about 3 km long) to which all visitors must keep. Both domestic and international travellers come to see the remarkably rich bird life (10,000 Puffins, 100,000 Manx Shearwaters and many other species). It is suspected that considerable consumer surplus exists due to the high quality of experiences. Local people (mainland) provide accommodation, food and the boat ride for the tourists. The island itself is uninhabited and access is strictly controlled. It is managed by the West Wales Naturalist Trust and provides an excellent model if the natural resources are available.

A different situation occurs at Michalmas Cay on the Great Barrier Reef. This National Park island is a breeding place for many sea birds and was originally subject to regular seaplane landings. These have been prohibited due to the disturbance to the birds and instead access is by boats including a large (300 passenger) power cat. The primary attraction at this location is the adjacent reef where people snorkel and dive, so this is an example of sport or adventure tourism, but most visitors go ashore on the Cay and experience the bird life. The island is segregated into a small strip of beach for tourists and the remainder preserved for the birds. Most of the benefits from the tourists go to the transport company and, given the mass tourism base in northern Queensland, a large local leakage occurs.

Underwater Guiding Program Although most of the Great Barrier Reef tourism in Australia does not fit the narrow definition of nature tourism there

are segments within it which do. Most diving trips fall into the category of sport tourism (see Chapters 11 and 13), however some, including one with a snorkel guide service available at one of the offshore reef destinations, are particularly relevant to nature-based tourism. Here tourists pay for the professional services of marine biologists who lead them on discovery trips underwater. This has proved very successful despite the significant extra cost, demonstrating that many tourists who use the facilities of mass tourism have added willingness to pay for nature. As a proportion of total travel costs to this destination the extra cost is relatively minor. The recruitment of tourists for this opportunity usually occurs during the boat trip to the reef. A different style of nature-based tourism also uses the same reefs, but this is based on a fixed group of tourists from international origins who travel in a group with the local specialist nature guides who are expert marine biologists and photographers. The entire trip is packaged and all services are provided by the local operator who deliberately limits the quantity and emphasizes quality experiences. Selling is done by the operators during the low season and involves travel to the major centres of origin (USA, Europe) for personal recruitment through a network of contacts using highly sophisticated slide presentations. This style of operation requires very high operator skills and is very demanding personally, but also rewarding.

Whale Watching This classic wildlife observation style of nature tourism is increasing in importance throughout the Pacific. Whale watching is also developing as a nature-based tourism opportunity in the waters off Australia (Tucker, 1989), New Zealand, Chesapeake Bay and in the Ogasawama Islands of Japan – especially off Chichiyima Island. The problem of avoiding disturbance to whales while allowing close up encounters is a major management issue and involves cooperation between operators and management authorities (with appropriate legislation in the case of Hawaii and Queensland). Within the Great Barrier Reef region whale sightings do occur frequently from day cruise vessels. The ability of nature to generate a dramatic response was evident on one cruise when a largely indolent boatload of visitors, returning home from the outer reef near the Whitsunday Islands, were galvanized into action with the appearance of whales. No other event on that trip came close to achieving the same unanimity of response or generated such excitement.

It is this intensity of experience which is frequently the hallmark of human-animal interactions provided by nature-based tourism. Shaw (1987) points out the cognitive element involved in whale-watching. Referring to the Cabrillo National Monument in California he notes that although the whale-watching activity seems neither aesthetically pleasing nor recreational 'nevertheless, the excitement of the participants is obvious... [and] the essence of this experience lies in the mind of the beholder'. The coastal presence of wild dolphins, as at Monkey Mia near Shark Bay in Western Australia (Doak, 1988), has also generated a large nature-based tourism program, sure to increase since a change in the area's status to World Heritage.

Navua River Wilderness Trips – Fiji Several operators use the Navua River for wilderness and ethnic tours (day trips). These include canoe trips down the river and powered long boat trips up. The river valley, beginning a few kilometres upstream from the town of Navua, narrows and the slopes and mountains are well vegetated. In places there is evidence of village gardens but generally the forest cover is extensive. Waterfalls and birdlife form part of the attraction. The power boats stop at one of two villages some 20 kms upstream, where the tourists meet the village people with appropriate ceremony. Although the operation is run by Fijians, they are from Suva and the local village people receive no return. The 'wilderness' is not interpreted for the tourists and the guides seem to have little or no interest in wildlife, and certainly no knowledge is shared. Despite being marketed as 'wilderness' these trips are of poor value for natural history tourists and the links with nature are slender. The potential exists for much more intensive nature-based tourism to be developed here, and for a better structure to support the local communities and environmental protection.

Cape York Wilderness Safaris (Queensland, Australia) This remote and wild part of Australia has rapidly gained large numbers of nature tourists in recent years. Despite the absence of sealed roads, and the impassable conditions of the roads for the duration of the wet season, by 1987 around 25,000 vehicles drove at least part way up the peninsula and about 16,000 vehicles (4 wheel drive) made it beyond the Archer River, implying at least 1,000 km of dirt 'road' travel. These adventure tourists are enjoying the 'wilderness on wheels' experience of the Australian outback but many are driven specifically because of wildlife. In a study of safari tourism on Cape York in 1987–1988 some 18 companies were operating with emphasis on adventure, remoteness and unique wildlife. These operators usually include several of the national parks and mostly follow a bush camping regime. Iron Range, a tropical rainforest area on the east coast, is especially important for nature-based tourists due to the many locally endemic wildlife species and the richness of the rainforests. Some companies offer a 'fly in fly out' option while others have 'fly-drive' or even 'ship-drive' by cruising up the waters of the Great Barrier Reef. People engaged in organized nature-based tours of Cape York are better educated, more affluent and better prepared than those travelling in their own vehicles. So far, however, little support in the form of interpretation has been made available in the national parks in the peninsula.

Strategies for Developing Nature-based Tourism

Ecological Sustainable Development

National parks and other protected areas form the basic resource for nature-based tourism throughout most of the world. One of the motives for

international support to nature-based tourism is its potential to assist in nature conservation. It can only achieve this if certain conditions are met:

- (a) a clear sustained and adequate benefit to the local community from the nature-based tourism venture;
- (b) a clear link between the tourist choice of destination and locally protected nature; and
- (c) appropriate local management and skills to provide satisfaction to both the visitors and the local community.

Even where state-owned and managed national parks are the primary resource, it seems likely that a similar set of conditions would add sustainability to nature-based tourism.

Returning to the parameters of nature-based tourism identified earlier, it is not possible to espouse any particular combination of location, style and experience as a preferred model. However, local communities and national governments will need to consider the implications of their choices very carefully. The unfortunate reality is that there are few properly documented case studies of nature-based tourism successes or failures which may help design new ventures. There are no doubt many potentially successful designs of nature-based tourism and different regions may benefit from a wide range of options, depending very much on local social and natural environments.

Guidelines for Integrating Nature-based Community Tourism and Conservation

Many parts of the world are just beginning to develop a nature-based tourist industry and the following principles may be useful in the absence of a formal manual. They certainly need testing but they are based on much international experience coupled with sensible caution. The guidelines suggested by McNeely and Thorsell (1987) for national parks should also be consulted.

A Small is beautiful principle: both the operation and the infrastructure should be small rather than large and considerable caution should be exercised before any increase in scale is attempted.

B High value – low volume may be best: capitalize on the highest quality elements of the natural environment and exploit the usually high willingness to pay values associated with these. Better to have the visitor numbers as a low proportion of the community numbers (5–10 per cent maximum?).

C Local control is better than overseas or capital city control BUT this must be based on adequate skills. Can a development program be designed to guarantee the transfer of any special skills not held and to refine existing skills? An external partner committed to eventual withdrawal is one

possibility. A partnership with an international company might be valuable if it provides for local people to gain experience in other comparable settings. Alternatively such skills development might be the basis of a good aid program.

D Be cautious about allowing the nature-based experiences being offered to become too closely associated with cultural elements. A well-protected and managed natural resource will provide permanent opportunities for nature-based tourism but culture interests and cultures themselves are usually much more dynamic.

E Develop a careful monitoring program so that every step of the project development is recorded and its contribution to ultimate success or failure identified. Regular reports of progress will help in future decisions about nature-based tourism in the region. Association with concerned organizations such as IUCN or SPREP or WWF, may provide a valuable input of comment and support.

F Develop guidelines for operators. Recent examples include the Code of Environmental Practice developed in 1989 by the Australian Tourism Industry Association, the 1990 booklet prepared by the Tourism Council of the South Pacific, and a guide for maximizing nature tourism's ecological and social benefits produced by the World Resources Institute (Lindberg 1991).

G Develop guidelines for ecotourists. A good example is the Audubon Travel Ethic prepared by the Audubon Society, one of the largest USA conservation groups. This draws attention to the natural and social ethics which ought to be the hallmark of ecotourists. The seven point list is as follows:

- 1 The biota shall not be disturbed;
- 2 Audubon tours to natural areas will be sustainable;
- 3 The sensibilities of other cultures will be respected;
- 4 Waste disposal shall have neither environmental nor aesthetic impacts;
- 5 The experience a tourist gains in traveling with Audubon shall enrich his or her appreciation of nature, conservation, and the environment;
- 6 The effect of an Audubon tour shall be to strengthen the conservation effort and enhance the natural integrity of places visited; and
- 7 Traffic in products that threaten wildlife and plant populations shall not occur (Anon., 1989a).

Research Needs for Nature-based Tourism

Decisions about nature-based tourism are being made in a relative vacuum of research data and knowledge. As Boo points out (1990, p.4), 'despite

rising expectations regarding the value of nature tourism in many fields of expertise, there are great gaps in the information necessary to manage the nature tourism industry'. In this final section some of the specific concerns about nature-based tourism which may be addressed by research are identified. It should be clear from this listing that there are great opportunities for researchers in a number of disciplines to make a valuable contribution to our understanding of eco-tourism. It is also clear that the jury is still out on the whole question of nature-based tourism and its role in both our economy and our ecology.

- 1 What are the attractive powers of nature? If a community sets up a nature-based tourism project what are the magnets and can the friction of distance be overcome?
- 2 What are the perceived and realized benefits for the tourist? In other words what are the components of satisfaction? How important is 'success' in nature tourism ('I saw a Crested Iguana, Spotted Cuscus, Little Penguin, Tiger, Humpback Whale, Bird of Paradise')? Evidence from hunting studies in North America suggests that actual success is less important for satisfaction than the nature of the search for the target. What are the expectations of such tourists, how are these developed and are they realistic? Understanding the role of 'rarity' in contributing to experiences and its interplay with status might help develop appropriate marketing emphases and activity programs.
- 3 What makes a particular destination popular for nature-based tourism and can a set of characteristics be generated which help in the selection of ecotourist locations? Is it biological diversity or some other characteristic (rarity, spectacular nature)?
- 4 What are the social and biological elements in developing ethical nature-tourism behaviour for a given site or species group?
- 5 What are the attributes of nature-based tourists and what demands do they impose on destination communities?
- 6 What skills are required for different roles in a community project in nature-based tourism? How can such skills be developed? Is there a role for aid programs in assisting the establishment of nature-based tourism projects and/or the provision of training needs?
- 7 Why do nature-based tourism projects fail and what are the main threats/problems affecting success?
- 8 How should nature conservation benefit from the commercial activities of nature-based tourism? Does nature-tourism protect or destroy nature? What are the limits to local, regional and national expansion of nature-based tourism?
- 9 What is the economic advantage/disadvantage of nature-based tourism compared with other styles of tourism? Who wins, who loses? How can the government agencies which manage the resources extract a reasonable share of the consumer surplus?
- 10 Are there useful regional or local 'bio-logos' which can draw attention to

special natural attributes of likely interest to tourists. For example, the Cassowary of northern Queensland's tropical rainforests, the Birds of Paradise of Papua New Guinea, and the Iguanas of Fiji. The ideal biologo would also be a carrier species – one of those highly attractive species which appeals to people and which saving from extinction would mean the salvation of a host of other lesser species. In order to save the cassowary from extinction we will need to conserve much tropical rainforest and by so doing will protect thousands of other organisms.

There is a clear role for research into this aspect of tourism and perhaps a need for a central repository to collate and disseminate the accumulated experience as more countries test the waters and walk the forests of nature-based tourism.

Endnote

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