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ECOTOURISM AND RAINFORESTS

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INTRODUCTION

For most tourists interested in nature, rainforests are about the most attractive biome on earth. They may see rainforests as lush, luxuriant, vibrant, immense, mysterious, spiritual and romantic. As most tourists are urban-dwellers from countries without rainforests, a visit to a rainforest is an exotic and rare experience. Rainforests are also associated with other attractive experiences and images. Tropical beaches, islands and resorts are easily associated with rainforests. Rainforests hold a special place for some as the landscapes of the dinosaurs. Today, rainforests are the home of exotic, rare and threatened species, such as the Mountain Gorillas of Africa and the Orangutans of Sumatra. With increased interest over the last twenty years in preservation of the environment, the fate of the rainforests, especially those of the Amazon Basin, has become symbolic of that struggle. For many tourists a visit to a rainforests is an affirmation of their support of the environment.

Rainforests seem easy to understand, certainly at the simple level. Even the most urban-centred tourist can enjoy a short venture into a rainforest (especially if along a well-made path or walkway). In addition to the enjoyment of such pleasant surroundings, such a tourist could easily understand many of the special characteristics and values of the rainforest and how it can be threatened. Massive coverage of rainforest issues, especially through television and educational institutions, have led to most of us feeling we have some expertise in understanding rainforests. In contrast, the special features of other biomes, such as grasslands, are far harder for the ordinary tourist to understand and appreciate.

Increasingly, rainforests are where ecotourism and mass tourism collide. This creates many problems. Should tourism operators and park managers cater for the niche or mass market? Can they satisfy both? If the average tourist already comes armed with a great deal of general knowledge and set expectations about rainforests, how then do we approach the provision of interpretation? Is it acceptable to manipulate the natural environment to better fit preconceptions about rainforests? How do we manage visitors to rainforests to maximise their experience and minimise their impact?

This paper has two main aims. The first is to provide a general descriptive overview of rainforests and rainforest tourism. That rainforests are seen as so easy to understand is a trap. It is important to fully understand the complexities of their definition, different typology and geographical distribution. Similarly rainforest tourism needs some careful explanation, for it comes in different guises and there are quite marked geographical differences across the world.

The second aim is to provide a discussion of the key issues affecting rainforests and rainforest tourism. These include the difficulties of balancing mass and ecotourism, providing meaningful interpretation and protecting rainforests from excessive visitor impact. Consideration is also given to the increasing trend towards artificial rainforests as tourist attractions.

WHAT ARE RAINFORESTS?

Defining rainforests generally is simple, defining them exactly is very difficult and has generated much debate. The term rainforest was coined in 1898 by the German - American botanist Andreas Schimper in his *Plant geography upon an ecological basis* (posthumously translated into English in 1903). He described dense lush tropical forests which he had visited on fieldwork in the Caribbean and Indonesia. These forests only occurred in areas of high rainfall. Thus he combined rain and forest for the term *Regenwald*, which was quickly translated into English as *Rainforest* (the alternative *Rain Forest* is mainly used by northern hemisphere writers).

Difficulties arose when other high rainfall forests around the globe were considered. Some were structurally similar to Schimper's tropical rainforest but occurred in sub-tropical, temperate and even cold temperate climates. Other tall dense forests occurred in high rainfall areas, but seemed substantially different in structure. In the confusion rainforests were often defined in a negative way (Adam 1992). Schimper and his fellow botanists were mainly Europeans and North Americans, they already knew about the high rainfall conifer and deciduous forests of their home countries, they were describing different forests, so they defined rainforest in a eurocentric way as *evergreen broadleaf forest* (ie not European). In Australia some botanists defined rainforests as forests in high rainfall areas which were *not eucalypt forests*. Similarly on the west coast of the USA it was decided that the redwood (*sequoia*) forests were not rainforests.

The problem got worse in the 1960s and beyond as the use of the term expanded beyond scientific circles and into common usage. Ordinary people began to use it generally to describe any high rainfall forest (nowadays a common dictionary definition). Many botanists began to focus on definitions based on denseness of canopy and other structural differences rather than geography or climate. Some botanists were disturbed by the existence of deciduous rainforest trees, forests that seemed to be rainforests but lacked the diversity which characterised tropical rainforests, anomalies regarding conifers (*araucarian* conifers were acceptable, but not others) and increasing evidence that species (such as eucalypts) which had been excluded from rainforests had actually evolved from rainforests.

On the other hand, under increased pressure to not log rainforests, foresters and public land managers demanded narrower and narrower 'scientific' definitions of rainforests. This conflict was well illustrated in the instance of Victoria (Australia) where much of the high rainfall eucalypt forests are intermingled with rainforest species as an understory and along moister gullies. In 1985 the State Department of Conservation and Environment established a Rainforest Technical Committee consisting of senior botanists. This committee's brief was to finally provide a 'scientific' definition of rainforest. However, when the committee agreed upon a definition which included the mixed eucalypt rainforest forests, the State Government deleted these mixed rainforests from the final definition in order to appease forestry interests (Cameron 1992).

What has developed is a continuum scale of definitions. At one extreme we still have writers who only accept tropical rainforests as rainforest (a common position in many popular works). Moving along the scale there are many who accept a number of different types of rainforest, but draw the line if so-called non-rainforest species are present. Next come a group (seemingly growing) who accept various levels of mixing. Finally we have the other extreme that all high-rainfall forests are rainforests (a position increasingly adopted by some tourist operators trying to attract as many tourists as possible).

Bearing all these difficulties in mind, it is possible to construct a generally acceptable definition of rainforest. A rainforest is a dense grouping of tall trees and other vegetation, in which the tall trees forms a dense canopy which significantly reduces light levels at the forest floor. Many of the trees in the rainforest will be evergreens with relatively soft leaves and these trees will have the ability to reproduce under the undisturbed canopy. However, the rainforest may also include numbers of conifers and hard leaved evergreens. As these species do not usually have the ability to reproduce under the canopy they may be relics from previous disturbances or be found mainly around the edges of the rainforest.

TYPES OF RAINFOREST

There are a number of different ways of classifying rainforests, the following is probably the most common. Though it uses a nomenclature which suggests typology based on climate, the differences are really much more of a structural nature.

Tropical Rainforest

This is the original rainforest as described by Schimper, the most common type and the stereotype of rainforest firmly lodged in the mind of most tourists. Its chief characteristics are:

- A very wide diversity of tree and plant species. Even though tropical rainforests only cover 7% of the earth's landmass, they provide about 50% of the world's plant species (Whitmore 1990).
- A very dense canopy, often multi-layered, sometimes with a fairly open understory at ground level.
- Most trees have very large leaves and often massive buttress roots.
- Large numbers of thick woody vines, palms and epiphytes.

Tropical rainforest primarily requires warm temperatures (a minimum of 18°C) and secondarily even high rainfall (a minimum of 100 millimetres *each* month). Half the world's tropical rainforests are in the Americas, particularly Central America, the Caribbean and the northern third of South America. Tropical rainforests are also found in West Africa, Madagascar, western India, Sri Lanka, southern China, South-East Asia, Papua-New Guinea, the far north-eastern coast of Australia and many Pacific and Indian Ocean islands (Whitmore 1990).

Sub-tropical rainforest

Occurs adjacent to tropical rainforest in areas that are slightly cooler due to difference in altitude or latitude. Sub-tropical rainforest looks very similar to tropical rainforest, except it is just less luxuriant and diverse. It is dominated by only a few tree species and it is less layered. Buttresses, figs, palms, large epiphytes and woody vines may be less frequent and there may be more ferns.

An interesting and confusing variation occurs with rainforest on less fertile and acidic soil. Even though it may be adjacent to sub-tropical rainforest, this depauperate type is called *warm temperate rainforest*. It is typically dominated by one or two species, trees are shorter, leaves are smaller and it has far less tropical rainforest characteristics (for example buttresses, woody vines).

Dry or Monsoonal Rainforests

Usually contiguous to tropical and sub-tropical rainforests, these are rainforests markedly affected by a pronounced dry season. They are characterised by species typically found in the other rainforests, but which have adapted to the more seasonal conditions. This adaptation might include dwarfing or a limited growing season. Such rainforests are typically more open with far less luxuriant foliage. They may be dominated by more drought-tolerant rainforest species, such as araucarian conifers. In some instances small patches of dry rainforest may be found along watercourses and in gorges in regions that are normally considered quite arid.

The sub-tropical, warm temperate and dry or monsoonal rainforests extend significantly outwards from the tropical rainforest cores of Central-South America, West Africa and South-East Asia. For example, rainforest is found in northern Iran. However, rainforests are usually not regarded as extending into Europe, the USA or Canada.

Cool Temperate Rainforest

Cool temperate rainforests don't really match the stereotypes of rainforests. They lack the diversity and luxuriance of tropical rainforests. They are usually cold and wet and therefore unattractive to some tourists. They look far more like European forests. Yet in the last few decades they have come to occupy a special niche for rainforest lovers. In a way that tropical rainforests are not, cool temperate rainforests are seen as *real wild places*, a sort of last frontier. Being cold and wet they are usually not in close proximity to

intensive cultivation or large densities of humans. Furthermore, they are viewed as having strong links to the earth's prehistoric past, they are perhaps seen as *living fossils*. This link is best seen in how modern cool temperate rainforests were used as the background for the 1999 BBC series *Walking with dinosaurs*.

Cool temperate rainforests are geographically distant from the other rainforests. They are mainly found in the southern half of the southern hemisphere, namely Chile, Tasmania and New Zealand. However, very small patches can be found further north, but only at high altitudes.

The chief characteristics of cool temperate rainforests are:

- One dominant tree variety. Usually *nothofagus* (southern beech).
- Very small leaf size. Sometimes deciduous.
- Buttresses, palms, figs, large epiphytes and woody vines completely absent.
- Abundant ferns, mosses and lichens.

Some writers, mainly from the northern hemisphere, refer to cool temperate rainforests as *montane rainforests* and to tropical and sub-tropical rainforests as *lowland rainforests*.

EVOLUTION OF THE RAINFORESTS

Schimper in 1898 only *discovered* rainforests in a eurocentric sense, by naming them. The far longer history of rainforests has really only been pieced together more recently. Their origins are in the great southern supercontinent *Gondwanaland* which existed between 160 and 100 million years ago and consisted of modern day South America, southern Africa, India, Australia and Antarctica. In a world much warmer and wetter than today, *Gondwanaland* developed as a rainforest continent. The Gondwanan dinosaurs grazed in an extensive and lush environment of conifers, ferns, palms and cycads. A striking example of how much more extensive the rainforest coverage was then is the recent uncovering of hundreds of rainforest fossil leaves from the desert at Lake Eyre in South Australia (White 1994).

About 125 to 100 million years ago flowering plants began to develop, probably as opportunists filling newly created ecological niches as sea levels varied (White 1994). At around the same time *Gondwanaland* began to break apart, some parts drifting off to collide with the northern supercontinent *Laurasia* and other parts remaining separate. Today's rainforests are either found on former parts of *Gondwanaland* or in regions of close proximity. The break up of *Gondwanaland* was accompanied by (and probably caused) global cooling and drying, which was particularly manifested in the development of polar ice caps and irregular Ice Ages. This caused rainforests to evolve their cool temperate form and prevented their spread into Europe and temperate North America. Indeed increased understanding of our botanical history reverses traditional eurocentric views. The supposedly ancient forests of Europe are really post Ice Age youngsters.

CHANGING ATTITUDES TO RAINFORESTS

For tens of thousands of years the rainforests of the Americas, Africa, Asia and Australia have been the home of indigenous peoples. In the last 500 years the expansion of Europeans over the globe has led to nearly all rainforests coming under some sort of colonial administration. In many cases the European colonies were primarily extractive with indigenous peoples coerced into a colonial labour force. In some instances indigenous peoples were replaced or supplemented with labour drawn from other locations (such as African slaves or Chinese indentured labourers). In Australia and New Zealand the Europeans created settler societies. In the twentieth century European colonialism declined dramatically, with most countries gaining independence. However, in place of colonial powers, domination has passed to a handful of key economic powers. All these different interests have led to a wide range of attitudes towards rainforests.

For many indigenous peoples the rainforests were their entire world. Certain parts of the rainforest, particularly certain groups of trees, were regarded as sacred and taboo and certain rainforest animals had religious and totemic significance (Flannery 1998; Boomgaard 1999). Rainforests provided nearly all their economic wants. Food came from hunting and gathering, often combined with simple *slash and burn* agriculture. Tropical rainforest was particularly diverse in the range of resources it provided, a diversity which required indigenous peoples to develop and pass on from generation to generation a massive range of local botanical and zoological knowledge (Flannery 1998). Indeed so abundant were the resources of rainforests that they may have stifled agricultural development in many regions.

The close relationship between indigenous peoples and rainforests leads to a common misunderstanding. Because the rainforests were not exotic and therefore (it is sometimes argued) *special* to these peoples, it has been quite easy for eurocentric commentators to conclude that indigenous peoples had nothing more than a utilitarian relationship with the rainforests.

Initially for Europeans the rainforest was a mask they had to remove. It hid precious minerals and sometimes hid the forces of resistance. Most importantly it hid agricultural opportunities. Removing the rainforest allowed the rain and (sometimes imagined) fertile soil to produce high value export commodities. Rainforests were cleared for rubber, coffee, tea, sugar and dairying (Aiken & Leigh 1992; Grove 1995; Dean, 1995; Frost 1997). Where overcropping caused declining soil fertility, land was abandoned and more virgin rainforest cleared and planted (Grove 1995; Dean 1995; Frost 1997). Until late in the twentieth century timber-cutting fell far behind mining and agriculture, for with the exception of some very high-value woods, it was not economic to export timber. As a result cleared rainforest was usually burnt as a waste product.

Over time a variety of conservation sentiments developed. Declining stream flow and soil fertility quickly became a major problem on some West Indian and Indian Ocean islands (Grove 1995). In some colonies Europeans formed conservation societies in order to protect particular animals for their exclusive game hunting (Boomgaarden 1999). However, in other cases there was very little interest in conservation (Dean 1995).

It was in Australia, the one area where rainforests were successfully converted into family farms by European settlers, that the strongest and most widespread regard for rainforests developed. Whilst clearing large areas, many farming communities took great care to preserve small patches (especially waterfalls and gullies) as parks. Rainforest beauty spots were not only valued by locals, between the 1870s and the 1930s rainforests were seen as especially attractive by urban-dwellers and became a major component of a successful nature-based tourism sector in Australia (O'Reilly 1945; Ritchie 1989; Frost 2000).

After World War Two the clearing of tropical rainforests quickened due to the massive economic expansion which characterised this period, especially in the Asia-Pacific Region. The buoyant economies of the USA and East Asia increasingly demanded timber, food and minerals. These could be gained cheaply by clearing rainforests in poorer countries which were missing out on industrialisation but were still keen to grab a piece of the global action. The development and utilisation of modern machinery allowed clearing to occur far more quickly and cheaply than before (Whitmore 1990, Aiken & Leigh 1992, Collins 1990).

The scale of modern clearance is difficult to quantify. Government statistical authorities rarely collect forest clearance data. Estimates may be done on different criteria and for different time periods and comparisons between countries may be very difficult (for example see Salim & Ullsten 1999). If we are just counting area cleared the greatest modern clearance has occurred in Brazil, followed by Indonesia and Nigeria. On the other hand if we consider area cleared as a percentage of total rainforest, the highest rates of clearance are in Ivory Coast, Nigeria, Costa Rica and El Salvador (Whitmore 1990). However we view the statistics, it is clear that in the 1980s and 1990s rainforest clearing in many countries has reached a rate which cannot be sustained if these rainforests are to survive as significant biomes.

The scale and intensity of recent clearance has directly led to a tremendous growth of interest and appreciation in rainforests. Less than twenty years ago some commentators bemoaned that few tourists understood rainforests (Valentine 1991). However, by 1990 it was confidently proclaimed that, 'rain forests have crossed a threshold of perception' (Whitmore 1990). Writers on heritage argue that many things only come to be seen as heritage when they are under threat (Davison 1991). That is exactly what occurred with rainforests. Publicity about clearing stimulated anger *and* fascination. Rainforests became a *cause celebre* of the 1980s and 1990s. Film, television and popular music reinforced images of rainforest as something worth saving. And as interest in the conservation of rainforests grew, so too did interest in visiting and experiencing rainforests.

RAINFOREST TOURISM TODAY

Rainforest tourism is very difficult to package neatly and quantify. There are major problems in defining rainforest tourists and counting them. Do we define by interests, activities or attractions visited? Do we count numbers or revenue yielded? Is it right (as is commonly done) to value international tourists as far more important than domestic tourists? How do we deal with comparisons between countries? As we are a long way off quantifying rainforest tourism and there has been very little research specifically on rainforest tourism the approach taken here is descriptive and somewhat speculative.

The most significant development in recent decades in rainforest tourism has been the growth of high-value packaged tours. These have been particularly noticeable in Latin America, most notably Costa Rica, but also Guatemala, Honduras, Belize, southern Mexico and Brazil (Thomlinson and Getz 1996, Wallace and Pierce 1996, Lumsdon and Swift 1998, Weaver 1998, Honey 1999). Tours also occur to a lesser extent in most of the rainforested areas of the world, though political instability and warfare have severely limited their development in some countries (Shackley 1995, Weaver 1998).

The market for this type of rainforest tourism is typically relatively well-to-do tourists from well-developed countries, especially from the USA and northern Europe. Such tourists fit the classic ecotourism mould, they are generally well-educated, keen to incorporate learning experiences into their holiday and concerned about conservation. Whether or not the tours and experiences they engage in are truly ecotourism is the subject of a lively ongoing debate (Thomlinson and Getz 1996, Wallace and Pierce 1996, Lumsdon and Swift 1998). Nonetheless, many of these tourists would either see themselves as *real* ecotourists or as far more *serious* than the usual sun and sand crowd.

The cost of such tours averages US\$100 to \$200 per day per person for the land component only (Shackley 1995, Thomlinson and Getz 1996). When airfares are added a rainforest holiday is an expensive proposition. This tends to limit the market to older, high income, experienced, highly motivated travellers. It also tends to preclude domestic tourists (though Costa Rica and Australia do have strong domestic visitor rates). However, it is important to distinguish between the current and potential markets. In recent years there has been the growth of a younger backpacker market. Their tendency is to be more independent, accept cheaper accommodation, meals and transport and splurge on short expensive rainforest tours and experiences (in the same way as normally frugal backpackers still tend to be big spenders on diving experiences on the Great Barrier Reef).

Much of the high-value rainforest tourism is through traditional style group tours. These are typically seven to fourteen days, all inclusive of food, accommodation and attractions, often cover a large area and a number of countries and are usually built around a strong theme. In addition there has been much development of accommodation properties as self-contained destinations. These often have distinctive themes or styles, for example they may be promoted as *eco-lodges* or *safari camps* or as *boutique* or *specialised* (Moscardo, Morrison and Pearce 1996, Wallace and Pierce 1996). Some even present themselves as scientific research centres (Weaver 1998, Honey 1999). As well as food and lodging they tend to offer exclusive access to local rainforest, guided tours, animal feeding and interpretative talks. Many now have strong links to indigenous groups, utilising them as guides and interpreters and in some

cases these facilities may be owned and operated by local communities (Wallace and Pierce 1996, Weaver 1998).

Rainforests are not the sole attraction for these tourists. They may be interested in a range of attractions which are geographically linked to the rainforest, or it may even be that the rainforest is just the background for a far stronger interest. Tours of Central America are packaged and promoted around a number of features, including Mayan ruins, beaches, adventure activities and indigenous culture as well as the rainforests (Thomlinson and Getz 1996, Lumsdon and Swift 1998, Weaver 1998). Most tropical beach resorts have some linkages to rainforests, either having adjoining stands or offering longer tours to nearby forests. While their customers are primarily interested in the beach and resort activities, the rainforest offers variety and exotic glamour. Animal and bird watching tourism is a particularly significant high-value niche market which often utilises rainforest environments (Shackley 1995).

A different form of rainforest tourism has tended to develop in Australia, particularly in Queensland. It is chiefly distinguished by its markets. In Queensland they are chiefly domestic tourists, international visitors from Asia and backpackers. Prices are lower and packages are built around accommodation destinations rather than long tours. These accommodation destinations (and there are hundreds) skillfully use rainforest plantings and views as their setting. Nonetheless, the rainforest is typically a background for the tourists' chief interests in beaches, water activities and adventure experiences. Ecotourism ventures do exist and have grown in recent years, but they are only a small segment. Another significant difference in Australia is that perhaps over half of rainforest visitors are from nearby areas and many tourists are taken to rainforests by friends or relatives who they are visiting (Parsonson *et al* 1989, Valentine 1991).

RAINFOREST INTERPRETATION

Interpretation aims at providing tourists with explanations about the places they visit and is a very important component of ecotourism. Interpretation has two components: the message (or theme) and the method (or mode). Unfortunately, tourism managers often concentrate more on the method than the message and rainforest tourism is no different in this respect.

Determining what are the key messages for tourists in rainforests is difficult for four reasons. First, most tourists come to rainforests already loaded down with preconceptions. Do tourism managers shape the experience to fit and satisfy these preconceptions or do they risk challenging them? Second, as noted earlier in this chapter, there is considerable unresolved debate about certain aspects of rainforests. How should they be handled? Should the interpretation be kept simple or can it include multiple conflicting explanations? Third, at what level should the interpretation be aimed? Tourists range from children to highly-educated adults, from the mass tourist seeking a pleasant experience to the dark green ecotourist. How do tourism managers strike a balance? Fourth, different tourism managers will have different messages depending on their own circumstances and beliefs. For example a government agency charged with managing rainforests may give its highest priority to promoting what a good job it is doing in conserving a particular patch. However, down the road, an independent tour operator may explain to their tourists that the same government agency is encouraging logging and agricultural clearance.

It has been suggested that there are certain messages which should be included in interpretation at all rainforests. These are as follows (adapted from Frost 1999):

1. What makes a rainforest and the debate over what is and what is not a rainforest.
2. The different types of rainforest and in particular what type is this rainforest.
3. How indigenous people interacted with this rainforest.
4. How European colonisation or settlement affected this rainforest.
5. The major threats today.
6. Plant and tree varieties.
7. Animals, birds and insects.

8. Special growing conditions associated with this rainforest (such as the nutrient cycle or the presence of buttressed roots).
9. The fragility *and* resilience of rainforests in general and of this particular rainforest.
10. Any revegetation or scientific research projects in progress.

Each of these messages varies in terms of complexity, controversy and vested interests. When the interpretative materials at six popular rainforest parks in Australia were surveyed, some strong patterns emerged (Frost 1999). None of the parks provided any information about current threats to rainforests in Australia. However, some referred to rainforest clearing in Brazil! The likely explanation for these omissions is that the government agencies responsible for these parks were usually parts of larger agencies responsible for timber-cutting in the area. In addition, none of the six attempted to provide a 'scientific' definition of rainforest. Again this may have been due to the broader logging interests of the park managers or it may have been seen as just too complex to try and explain to tourists. Curiously, three of the six had good information on indigenous use of the rainforest and three had nothing on this topic.

In contrast all six parks provided extensive excellent quality interpretative material regarding the special growing conditions to be found in that rainforest. Five of the six provided information about the animals, birds and insects and labelled the major tree varieties. Such emphases can be explained in two ways. First, this interpretation focussed on information which was incontestable and uncontroversial. The trees had buttresses, they were of a particular species, there were epiphytes, nutrients were returned to the soil by rapidly rotting leaves. Second, this interpretation related to the internal dynamics of the rainforest, it did not go beyond the rainforest and consider how it interacted with the rest of the world.

The quality of interpretation is highly dependent on the level of knowledge of its creator, whether they be the writer of text for signs or a tour guide. The level of knowledge has become particularly important for rainforest tourism in Latin America. On the high-value tours which characterise this region the tourists are typically well educated, knowledge-hungry and have high expectations. They expect to interact with local (perhaps indigenous) guides. However, they can often be dissatisfied through expecting western standards from non-western guides. Examples of problem areas arising from cultural clashes include guides with low levels of scientific or technical knowledge and guides seemingly indifferent to western ideals of preserving nature (Wallace and Pierce 1996).

Research into the quality of the messages conveyed to tourists through interpretation is a fairly new area. However, for rainforest tourism it is becoming a vital ingredient in the long term sustainability of individual operators and regions. Rainforest visitors, especially those we characterise as ecotourists, come to the rainforests to *enhance* and *increase* their existing knowledge. To satisfy such tourists, tourism managers need to be aware of this and prepared to meet these needs.

ELEVATED VIEWING STRUCTURES

Rainforest tourists can choose from a wide range of modes of experiencing and understanding the rainforests. Some of these, though used in other biomes, work very well in rainforests, these include small guided walks, trails with signage and night - time spotlight walks. However, there is one particular mode which has become almost exclusively associated with rainforests, this is the *elevated viewing structure*.

The stated logic behind elevated structures is that as the canopy is that the most interesting feature of a rainforest is its canopy that is where tourists wish to go. As well as being the distinguishing characteristic, this is where tourists can see epiphytes, fruit, flowers and wildlife close up. Such experiences cannot be had at ground level. A second attraction of the elevated structure (though rarely openly stated) is that they give the tourist a thrill. For that reason many of them are suspension structures which move, swing and shake. They are essentially soft adventure tourism.

Elevated viewing structures are a recent phenomena (though at least one dates to the 1930s). Their numbers and range have rapidly expanded in the last ten years in response to the increase in tourist interest in rainforests. A number of types can be distinguished. The first are publicly built structures, usually located in national parks. Typically these are designed to cater for large numbers of mass tourists (for only high attendance can justify their cost). They are easily accessed by good roads and may have visitor centres and catering attached. They provide a short concentrated experience, generally no more than one hour (Frost 1999).

A second type are privately constructed. They are nearly always associated with accommodation. These structures provide an *exclusive* experience for the paying guests.

A third category consists of (usually privately owned and operated) mass viewing structures. Their cost is met by admission fees. The best examples of these are the recently built cable cars running through rainforests in Costa Rica and Queensland (Chapman 1996, Honey 1999).

Elevated viewing structures may be seen as examples of *hardening* (the use of tough materials to protect the environment from tourist traffic), *sacrificial sites* (overdevelopment of one site in order to protect other sites) and *concentration* (providing a focal point for tourists to visit, either for the purposes of collecting revenue, managing visitors or providing services). Such structures have also been criticised as possibly being a poor substitute for good quality interpretation. It may be that having invested in the capital works, that tourism managers are either unwilling or feel it unnecessary to spend further on tour guides or signage (Frost 1999).

THE ARTIFICIAL RAINFOREST

Another recent tourist development is the artificial rainforest. As rainforests are highly attractive, but expensive to visit, some developers have taken the approach of bringing the rainforest to the city rather than vice versa. It is interesting to note that one key tourism textbook only refers to rainforest attractions in this sense, citing the case of the indoor Lied Jungle in Nebraska USA, which attracts 1.3 million visitors annually (Goeldner *et al* 2000). Other examples include the massive tropical rainforest glasshouse opened in 1988 in the Botanic Gardens in Adelaide, Australia and the indoor forest (including living trees 200 feet high) opened in 2000 at the Museum of Victoria, Melbourne, Australia.

Such developments are highly dependent on technology, either to create realistic artificial copies or to keep alive real specimens. Their massive cost requires very large numbers of visitors paying small entry fees. Generally they provide an hour or two of interest and are directly competing with a wide range of similarly priced accessible attractions (including cinemas and other museums). Whether or not they are financially viable in the long term (especially after the novelty has worn off and costly revamping is required) remains to be seen. What is also uncertain is whether or not these urban alternatives affect demand for real rainforest tourism.

ENVIRONMENTAL IMPACT

The great increase in rainforest tourism has tended to affect the environment in two ways. The first is degradation through increased traffic. The world's surviving rainforests are typically in remote, sparsely populated areas. What remain today are rainforests which either lacked accessibility or fertility and so were not utilised for farming or logging. Increased tourism requires the building of roads and other services in relatively unspoilt areas. Unless carefully managed tourism may lead to increased erosion, soil compaction, weeds, diseases and pollution. Conversely taking positive steps to minimise negative impacts may become an attractive selling point for the environmentally-conscious tourist. For example much is made of how the pylons of rainforest cable cars in Queensland and Costa Rica were brought in by helicopters, so negating the need for clearing for permanent access roads (Chapman 1996, Honey 1999).

The second negative effect arises from the strong preconceptions of how rainforests should look which tourists bring with them. It may be highly tempting to reshape rainforests in a standardised format in order to satisfy those expectations. As such at a resort on Lindeman Island off the Queensland coast, exotic rainforest species were introduced, 'to assist in reinforcing the tropical island image desired for the resort' (Harris and Walshaw 1995). At Cable Beach Resort in Broome, Western Australia, the buildings and landscaping were done in a Balinese style and the developers were initially quite ignorant that indigenous dry rainforest existed on their property.

A PLACE FOR TOURISM?

In the last decade there has been a great deal of discussion about the accelerated destruction of rainforest and measures for preserving and protecting what remains. Unfortunately a great deal of this literature ignores tourism, either as an influence or as a force for preservation (for examples see Whitmore 1990, Collins 1990 and most significantly Salim and Ullsten 1999). Such an omission is indeed worrying. Tourism already exists as an activity in rainforests and is growing. If efforts to preserve rainforests are to be successful, planners, managers and governments need to take account of tourism and its potential, both as a force which could damage rainforests and as a force for promoting interest in and understanding of rainforests. In turn tourism operators and managers need to be actively involved in preservation and education.

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