

## ***Mulu and Niah as Ecotourism Sites***

by

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### **Introduction**

Scientists have shown particular interest in the potential and medicinal value of some of the plants found in Sarawak, with news that two species of trees in the rainforests of Sarawak produce active anti-HIV agents (Sassons, 1993).

Referred to in tourist brochures as “Land of the Hornbill”, Sarawak is the most ethnically diverse state in the country, if not in the region, with about forty different ethnic groups among its population of a little more than two million people (Department of Statistics, Sarawak, 2000).

A visit to the Mulu National park is one big adventure. While it was originally a scenic and geomorphological destination, today, the great potential of the caves and surrounding area for eco-tourism has been well developed. Visitors today not only get to see a great natural wonder but also have the opportunity to learn about the many fascinating faces of ecology in this unique location. Gunung Mulu National Park and Niah National Park as archaeological rain forest sites.

The Gunung Mulu National Park and the Niah National Park are of course not the only worthwhile eco-tourism destinations in Sarawak although they are the most unique and important.

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## Methodology

This study is both qualitative and quantitative. The qualitative method will include collecting photographs, interviewing people who know about Mulu Caves, museum search, documentary research, site visit to determine existing infrastructure, such as hotels, transportation and accommodation.

## Definition of Eco-tourism

Eco-tourism implies travelling to natural areas where the environment has been conserved in its original state and is a source of recreation and health for both visitors and the local population. (Ceballos-Lascurai 1991, p. 25) the first definition of eco-tourism includes travellers who travel to areas where they admire or enjoy the scenery and see or study." (Lindberg and Hawkins 1991), on the other hand eco-tourism refers to as "ecological tourism". "Tourists travel to visit virgin and non-populated nature". Their definition of eco-tourism is, "a responsible trip to natural areas" and such tourism can include visiting water and coastal areas, climbing mountains and peaks, exploring caves, deserts, wetlands and even for purposes of archaeology and anthropology. As an example, Ballantine and Eagles (1994) suggested that eco-tourism implied educating people about nature, and with intention to visit undisturbed areas. Eco-tourism believes that travel should be responsible so that it can be an economic force that results in the preservation of endangered flora and fauna as well as human communities that are all at risk of extinction due to modern physical development or over-tourism involving irresponsible tourists. In this respect, the Malaysian Tourist Corporation, in some of its promotional materials carry the reminder: "Take away only the memories; leave behind only your footprints." This is primarily because irresponsible tourists remove flora illegally and leave behind a trail of garbage and destruction.

Eco-tourism can bring significant economic and social benefits to many communities in many countries that have the appropriate natural attractions but the activities need to be carefully planned and monitored to ensure that the very attractions that brought the tourists there in the first place are preserved for others to follow and enjoy such as Mulu and Niah National Park of Sarawak. The range of eco-tourism is wide and covers community-based tourism with native societies to guided tours to pristine rain forests. The term eco-tourism is generally applied to many types of vacations that involve visiting natural areas and leaving as little trace of your presence as possible. When eco-tourism is conducted the way it should be done, funds generated by the activity help to fund environmental preservation projects in the area. Eco-tourism is defined as "Responsible travel to natural areas that conserves the environment and improves the well being of local people" according to The International Eco-tourism Society (TIES, 1990).



## Eco-tourism in Malaysia

For those interested in eco-tourism, both west and east Malaysia provide some of the oldest tropical rainforests in the world. There is the pristine Taman Negara or National Park in west Malaysia, magnificent limestone caves of Mulu and Niah in Sarawak, jungle trails, tropical islands off the coasts of west Malaysia and Sabah; the hornbills of Sarawak, and the orang-utan of both the east Malaysian states.

At a time when the Malaysian economy was badly affected by significantly reduced export earnings, the tourism sector was prioritized and subsequently registered the third highest number of tourist arrivals in the world, with Singaporeans from across the Causeway making up a sizeable percentage of the total. The Ministry of Culture, Arts and Tourism has been responsible for promotion of Malaysia from 1972 till 1992 (Malaysia Tourism Board).

The Malaysian tourism drive has been very successful due to an ecologically rich destination with protected areas for the conservation of a wide variety of flora and fauna in many national parks in both west and east Malaysia; wildlife, reserves, nature parks, bird's sanctuaries, and also marine parks since 1930. Malaysia earned close to RM 30 billion from the 16.7 million travellers visiting the country as tourists in 2004 alone (Mohamed et al., 2005).

One excellent example in Malaysia of such adverse consequence of popular tourism is that of Pulau Payar in 1990. The destination first had 4,000 visitors; however after some promotions the number of tourists jumped to 90,000 (Mohamed et al., 2005) with subsequent negative impact on the environment. To prevent this, the government of Malaysia prepares for the influx of tourists by building hotels and providing adequate rooms as well as facilities and amenities.

**Table 1. Tourist arrivals and receipts to Malaysia**

Year	Arrivals (Million)	Receipts (RM) Billion
2009	23.6	53.4
2008	22.0	49.6
2007	20.9	46.1
2006	17.45	36.3
2005	16.4	32.0
2004	15.7	29.7
2003	10.5	21.3
2002	13.2	25.8
2001	12.7	24.2
2000	10.2	17.3
1999	7.9	12.3
1998	5.5	8.6

(Tourism Malaysia 2005, UNESCO 2005, Dr. Badaruddin Mohamed)



## **Eco-Tourism in Sarawak**

Of all the states in Malaysia, Sarawak has the greatest potential for eco-tourism due to its ecological diversity and its socio-cultural environment. The many National Parks spread throughout the state are a major attraction but the biggest attraction for eco-tourists to Sarawak are the Mulu Caves in the north eastern part of the state. This cave complex is wonder of nature and amaze not only foreign visitors but also the locals.

Although this cave was originally difficult to access, much has been done to develop and put in place the various necessary infrastructure - transport, site facilities, package tours, tourist information - which has make it relatively easy and affordable for eco-tourists to visit them, especially from the jumping off point in the city of Miri.

## **Eco-Tourism in Mulu and Niah**

As has been extensively described in the earlier chapters, the locations and detailed features of the Mulu National Park and Niah Caves, these are the two most important eco-tourism destinations, not only in Sarawak but in Malaysia. The geological and anthropological complexities, besides the diversity of the flora and fauna, of these two destinations, are practically unmatched by any other similar type of destination in the world.

While specific tourist arrival figures for Mulu and Niah National parks are not available, there are official releases by the Forestry Corporation of Sarawak that indicate the growing number of visitors to the state's national parks as follows: "Total tourist arrivals in 2007 (328,764) showed an increase of 5% from 2006 (312,380) Foreign tourist arrivals from January to April in 2008 registered an increase of 9% from the corresponding period in 2007" (Forestry Corporation Sarawak, 2008).

## **Mulu Cave**

Spencer St. John, in 1862, was the first to document the existence of caves in Mulu in his well known book, "Life in the Forest of the Far East", but the local people have known the Mulu caves for generations. The name Deer Cave is derived from deer which visited the cave to lick the salty water leaking from the guano (dropping from bats). The local Berawan people hunted the deer in this cave long before the national park was gazetted (G. E. Wilford).

In the early 1960s the first to study the geology of the more accessible caves was undertaken. The first extensive exploration of the caves however was carried out during the Sarawak Government/Royal Geographic Society 1977/1978 Expedition (Braunton 1985, G.J. Bakus, 1990, pp. 159).

One new species was, discovered during the expedition and was described in



a new genus. They were collected in the Gunung Mulu National Park, mostly from caves, but no truly troglodytic or cave were collected (A.C. Walthman, et al., 1980 146, 2: 228-6G).

### **Origin of the Mulu Caves**

Mulu Cave has four caves: Clearwater Cave, Wind Cave, Deer Cave and Long's Cave. All caves in the limestone massifs of Gunung Benarat, Gunung Api and the southern hills were formed by running water. Rain water percolates through faults and joints and along bedding planes (surfaces of original deposition of the limestone). Rainwater is slightly acidic and as it trickles through these fractures and along bedding planes, it dissolves calcium carbonate (a process helped by the high tropical temperatures) and the water, streams and rivers find their way through channels thus formed, eroding these into larger underground passages.

Partly eroded gravel beds inside the caves are relics of periods of high rainfall when a large alluvial fan was built up. Grooves high up the walls of some caves, e.g. in Clearwater Cave, were etched by the underground river when it flowed at a much higher level long ago. Where the cave bends sharply the grooves appear as deep notches on the cave walls; these marks of high river level correspond to phases of build up of the alluvial fan.

### **The Clearwater Cave**

Down is the underground passage of the Clearwater Cave, which has an extremely extensive system of passages believed to be the largest known in Southeast Asia. It took many expeditions (from 1977) to survey about 107 km of the Clearwater system, but much is still left to be explored (Rowthorn, Cohen et al., 2008).

Clearwater Cave and Wind Cave can be reached from the Park Headquarters by a 3.8 km nature trail, which consists partly of cement paths, and partly of wooden walkways. These walkways allow visitors to experience the rainforest at first hand. After rain, the cement and wooden surfaces may be slippery due to algae and moss growth. For the first 45 minutes, starting from the Park Headquarters, the ground is flat and the trail winds through beautiful tall riverine forest with occasional experiences of *banjir* (Malay for floods) submerging this area and depositing a fresh layer of clay and silt. At the highest point of the trail is Gua Bulan Susu (Milk Moon Cave). It takes only five minutes to pass through this cave, but it has some worthwhile features. Fig roots, some thick while others form thin branching networks are seen at various points inside the cave. Dripstone formations hang beneath low ceilings and form narrow passages. Holes in the ceiling allow sparse daylight to illuminate some passages. After emerging from the cave the trail descends via wooden stairs to the riverbank amidst rich forest. The trail then follows a narrow flat area between the river and the limestone hill and twice the trail climbs up



where the river follows directly beneath the limestone rocks, allowing attractive views of the river. The Wind Cave is reached soon after (Frankham and Alexander, 2008).

### **The Wind Cave**

From the jetty near the entrance of Clearwater Cave to the entrance of the Wind Cave, a wooden walkway leads along the steep limestone cliff above the Melinau River. The easy stroll provides good views overlooking the river and also provides close encounters with metre long stalactites, dripstone formations hanging from the cliff face. Thereafter, the walkway turns away from the river and up a gentle slope to the cave entrance. On the slope is a limestone tree forest.

When entering the cave, visitors feel a cool draft, hence the name of the cave. Floodlights brighten up curved passages that are narrow in places. The partly wooden walkway passes under the bottom of a vertical shaft into which daylight falls and eventually leads to the King's Room. This is one of the most beautiful caves in Mulu and is a true wonder of nature. Stalactites hang from the ceiling and stalagmites stand on the floor in all imaginable shapes and sizes. Many are delicate and none should be touched. This underground landscape conveys the feeling of being in an entirely different world. One of the entrances of the Wind Cave was used as a burial site between 3,000 and 1,500 years ago (Frankham and Alexander, 2008; Rowthorn, Cohen et al., 2008).

### **The Deer Cave**

From the Park Headquarters, a walkway leads to the entrance of the Deer Cave. The three-kilometre walk takes about an hour, allowing some time to enjoy the forest and its sounds along the way. The plank walk passes through various types of rainforest: initially through lowland riverine forest, which in places is often flooded, then through tall forest growing partly on limestone and partly on river sediments. Many trees have been labeled with both their common and scientific names. At about three quarters of the way to the Deer Cave the walkway passes underneath the spectacular root system of a large fig tree. The ironwood or *belian* tree can also be seen in this area, where the trail follows a riverbank.

The huge cave entrance allows enough daylight to enter so that these vast inside dimensions can be seen. The walkway passes initially along some rather odorous guano deposits. A tributary of the Melinau Paku River enters the cave from the north and disappears from view after about 300 m into a hidden passage. It emerges into daylight outside the southern entrance. Adventurous visitors may continue with a guide along the river to the northern entrance. Here, a huge number (estimates reach up to five million) of wrinkle lipped bats (*Tadarida Plicata*) roost during the day. The cave also houses many Mossy nest swiftlets (Frankham and Alexander, 2008; Rowthorn, Cohen et al., 2008).



### **The Lang's Cave**

A few minutes' walk from the southern entrance of the Deer Cave is Lang's Cave. This is a beautiful cave contains a wonderful array of stalactites, stalagmites and helictites (slender formation of mostly calcium carbonate which twists and branches in every direction on the floor, wall, or ceiling). As the cave is fairly small, these features, can be seen at close range (Frankham and Alexander, 2008; Rowthorn, Cohen et al., 2008).

Since then, the route discovered in 1920s has been used as the trail to the summit. The trek is usually done in a four day hike, but experienced trekkers can do it in less. It involves overnight stops at jungle camps. A number of wooden huts are positioned along the trails, which provide shelter for overnight stops. Trekkers should be well prepared with good trekking shoes, sleeping bags, food supplies, cooking utensils and sufficient water before the trek. Along the trail, trekkers can experience the rainforest and perhaps see some rare animals and birds, including various species of hornbill.

### **Forest Types**

Richly coloured butterflies glide among the trees and the wild orchids. The ground is of leaves and fresh new seedlings struggling to find their own space.

On the limestone there is lowland limestone forest, lower and upper mountain limestone forest. Other plant communities dominate the alluvial plains, including keranges (tropical heath forest) and peat swamp forest. Limestone forest occurs on the Melinau Limestone Formation, which includes limestone forest, limestone cliff vegetation, lowland limestone mountain forest, upper mountain limestone forest, and limestone cave vegetation. The limestone flora is one of the most diverse and best preserved in Southeast Asia. About 1,700 species of liverworts and mosses have been recorded. The very rare bog moss can also be found in rain gullies in the high forest. There is an enormous diversity of plants and animals within the Mulu park, an astonishing 20,000 animal species, approximately 60 kinds of mammals, 262 birds, 23 lizards and 75 frogs have been recovered; also fourteen frog species were newly recorded for Borneo and among insects, at least 5,000 beetles occur in the park, 360 spiders, 276 butterflies, 2,400 moths (out of an estimated total of 3,000 to 4,000 for the whole of Borneo) and 72 types of termites as well as the Malay weasel (*Mustela nudipes*) which is seen to be active during the day. A staggering 2,000 species of flowering plants, which include various new species, had been identified in Mulu by 1982.

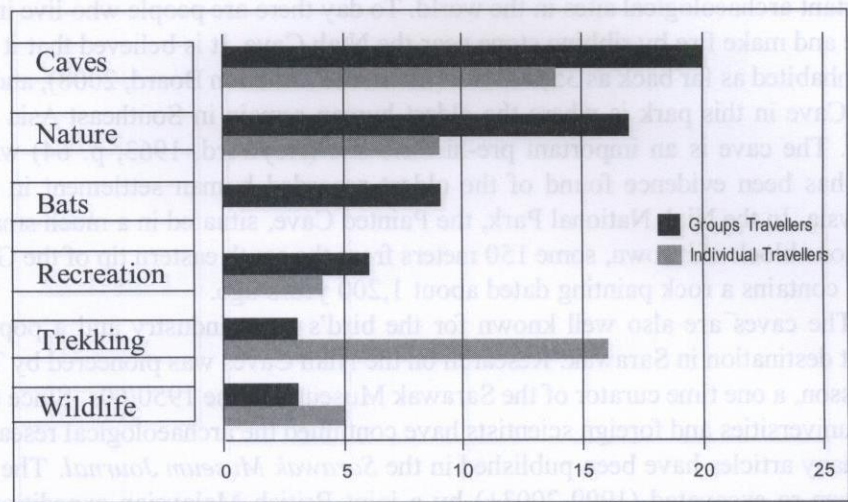
### **Tourists in Gunung Mulu National Park**

Figure 1.2 below shows the main reasons for a visitor to Mulu. Flora and fauna do not rank very high, unless they all encompassing category "nature" is seen as mainly consisting of fauna and flora. The bats were probably told by their



guides and it is a fixed item on the schedule of almost all groups that go to Mulu. Seeing the bats emerge from the cave mouth is one of the best experiences for a visitor to Mulu (Backhaus, 2005).

**Figure 1: The main reasons for visitors to come to Mulu (Backhaus, 2005)**



Again the group travellers liked watching the bats more than the individual travellers, some of whom also dislike watching the bats. The reason for this could be that the bats do not always come out. If it is raining they tend to stay in the cave, unless they have not been out for two or three days. Waiting for them to come out and to having to go back to the accommodation in the rain and darkness is not fun, especially when people have not much time at their disposal, not seeing the bats or other animals for that matter can become a critical situation, which dampens the whole experience. A study conducted by Chrismond Sem Pasan (2001) counted 205 Asians and 95 Europeans that visited the observation platform during six consecutive days in June 2001. It was found that most visitors (91%) who went to see the bats were either happy or very happy with the experience (Backhaus, 2005).

### Niah National Park

Besides the Gunung Mulu National Park, the Niah National Park is another excellent eco-tourism destination within the district of Miri to the northwest of Sarawak. Within the Niah National Park is the Great Cave located in Gunung Subis, which has a collection of very large caves of maritime origin.

Niah National Park is made of some interesting, beautiful and impressive sceneries. This area was a primary human habitat as early as 40,000 years ago and



also one of the largest burial sites which are for Paleolithic (the earliest Stone Age) and Neolithic period and the painting cave is for Iron Age. The area is covered by primary rain forest, it is the home of plants and wildlife. Now the cave stays important for local birds nest and guano collection providing valuable employment and income. Also, Niah is famous because of *Homo sapien sapien* oldest in South East Asia was found in Niah Cave and making the Niah Park one of the most important archaeological sites in the world. To day there are people who live in the jangle and make fire by ribbing stone near the Niah Cave. It is believed that it was first inhabited as far back as 35,000 BC (Tourism Promotion Board, 2008), and the Niah Cave in this park is where the oldest human remain in Southeast Asia was found. The cave is an important pre-historic site (Heyward, 1963, p. 64) where there has been evidence found of the oldest recorded human settlement in east Malaysia. In the Niah National Park, the Painted Cave, situated in a much smaller limestone block of its own, some 150 meters from the south eastern tip of the Great Cave, contains a rock painting dated about 1,200 years ago.

The caves are also well known for the bird's nests industry and a popular tourist destination in Sarawak. Research on the Niah Caves was pioneered by Tom Harrisson, a one time curator of the Sarawak Museum, in the 1950/60s. Since then local universities and foreign scientists have continued the archaeological research, and many articles have been published in the *Sarawak Museum Journal*. The site has been re excavated (1999-2003+) by a joint British Malaysian expedition to determine the accuracy of Harrisson's findings.

Items found at Niah Cave include Pleistocene chopping, tools and flakes, Neolithic adzes, pottery, shell jewellery, boats, mats, even iron tools and ceramics and glass beads dating to the Iron Age. The most famous find is the human skull dated at around 38,000 years BC. In the Painted Cave there are paintings and wooden coffin 'death ships'. Here, in the Painted Cave, little human like figures drawn in red haematite watch over a grave site where the bodies of the dead are laid in its own boat shaped coffin.

Today, the Cave is home only to bats, swiftlets and other specially adapted forms of life. However, a few locals still venture into the dark interior to collect guano (bird and bat droppings used as fertilizer) and bird's nest, made by swiftlets, and which is a highly prized delicacy and much sought after.

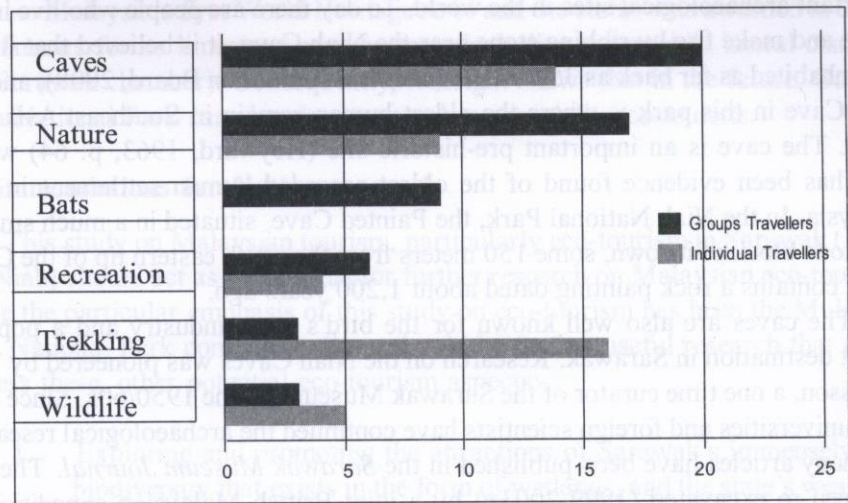
## Conclusion

Eco-tourism is, "a responsible trip to natural areas" and such tourism can include visiting nature, water and coastal areas, climbing mountains and peaks, exploring caves, deserts, wetlands and even for purposes of archaeology and anthropology. So Mulu cave has ability to absorb more eco-tourism also the table 2 can show this because most of the travellers in group and individual traveller want to visit caves and its unique nature. And also Mulu has its own flora and fauna which are very interesting for tourists who come from another country or also city



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in Malaysia because it is unique for Malaysian people.

Additionally Mulu cave is one of the largest caves in the world and has the largest underground chamber, which can incorporate forty Boeing 747 airplanes. Mulu cave, has four caves, their names are: Deer Cave, Lang Cave, Wind Cave and Clearwater Cave. It is in the state Sarawak on the Island of Brunei and it is the largest park, 544 sq km according to Miri & Northern Sarawak guide 2009/2010 and also Malaysia's first World Heritage Area and the status was awarded in 2000. It is famous for its limestone cave systems including the world's lateral chamber (the Sarawak chamber). Consequently, foresight shows that in the future, Gunung Mulu National Park can absorb more tourists especially eco-tourists.

### **Recommendations for further research**

This study on Malaysian tourism, particularly eco-tourism in Sarawak (Mulu and Niah) should act as an impetus for further research on Malaysian eco-tourism. While the particular emphasis of this study on eco-tourism has been the Mulu and Niah National Park complexes, there should be further useful research that could address these, other potential eco-tourism aspects:

1. Exploring and promoting the attractions of Sarawak's immensely rich biodiversity that exists in the form of wetlands, and the state's wealth of flora and fauna.
2. There could be specific study of all the many national Parks that dot the state from north to south to identify the full potential of these natural treasures that are already popular among the locals for they offer much to the visitor.
3. Other than being known as the "Land of the Hornbill", Sarawak is also a "Land of Rivers". The state is dissected by many rivers that have their source in the mountains of the east that form the common border between Sarawak and Sabah and Indonesian Kalimantan to the east. The mighty Rajang River, for example, is Malaysia's largest. From time immemorial and even today, the river has been the major highway of the people living in the various remote enclaves in the interior. Though the "Politics of Development" has brought roads and bridges and linked many remote areas to civilization, the river remains today, a transportation lifeline to many who are more familiar with the traditional longboat and express launches than cars and buses. There could be worthy research on Sarawak rivers and riverine life as an interesting and even intriguing aspect of eco-tourism. In fact, the waterways of the state of Sarawak offer many potential specialised tour packages that could be promoted as "Riverine Adventures".



There are many other possibilities of course for even though we are in the 21s' century, there are still many ecological mysteries in Sarawak waiting to be discovered. Hopefully, some enterprising researchers will uncover at least some of these mysteries

In summary, the "Land of the Hombills" could in fact be transformed into an adventure in "The Lost World of the 21s' Century".

The most important recommendation for Mulu and Niah is there should have been more light, safeguard and route board. This part use someone experience about Mulu: When someone is in Mulu the tour guide said everyone if one wants can go by himself/herself, but the tour guide will stay here. The person decided to go before gets it dark.

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There are many other possibilities of course for even though we are in the 21s' century, there are still many ecological mysteries in Sarawak waiting to be discovered. Hopefully, some enterprising researchers will uncover at least some of these mysteries

In summary, the "Land of the Hombills" could in fact be transformed into an adventure in "The Lost World of the 21s' Century".

The most important recommendation for Mulu and Niah is there should have been more light, safeguard and route board. This part use someone experience about Mulu: When someone is in Mulu the tour guide said everyone if one wants can go by himself/herself, but the tour guide will stay here. The person decided to go before gets it dark.

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