JAMAICA

GLOBAL TRAVEL &TOURISM

PARTNERSHIP (GTTP)

RESEARCH&AWARDS COMPETITION

TOPIC: GREEN TOURISM

A true "Green" Grotto Cave;

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THESIS STATEMENT

A true "Green" Grotto Cave; a leading attraction that lives up to its name

The entrance sign at Green Grotto Caves. Photo taken by Jon-Ross De La Motta

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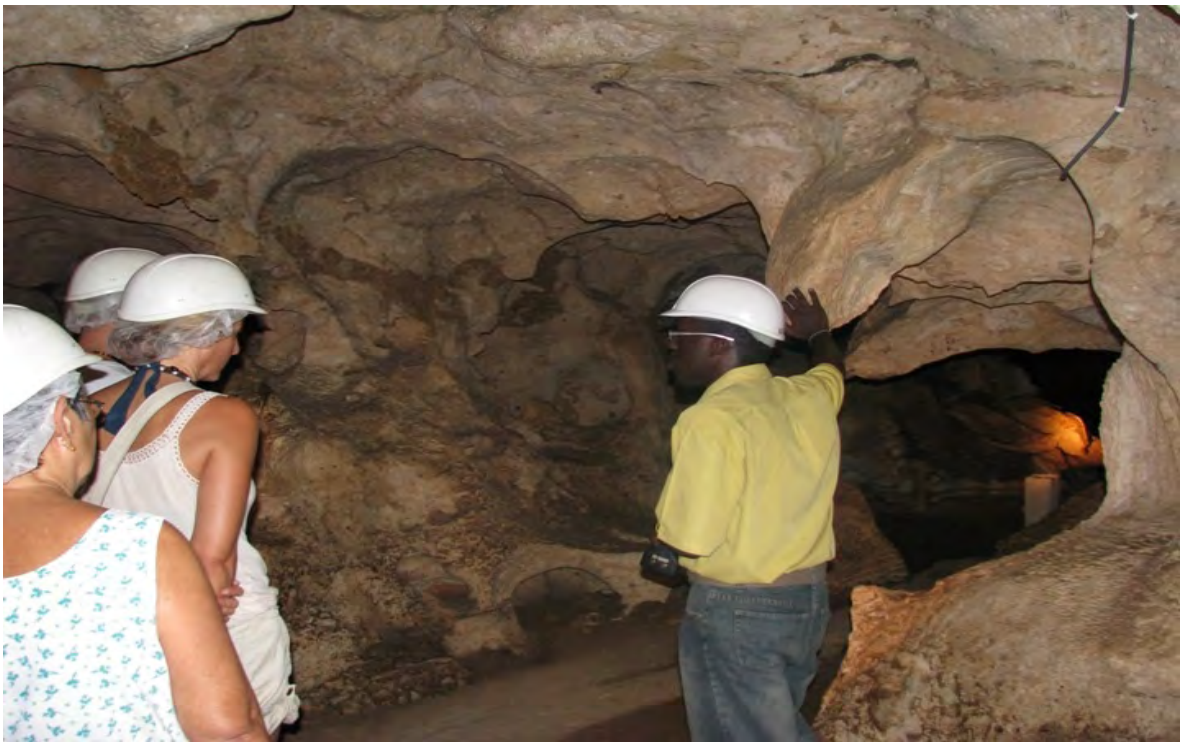
INTRODUCTION



Tourists guided in a tour at the Green Grotto Caves. Photo courtesy of www.thebluehousejmaica.com

Tourism has developed to be the beneficial industry in Jamaica. Tourism substantially contributes to Jamaica's foreign exchange income and significantly contributes to the national GDP.

Jamaica's unique and varying natural environment and rich culture allows for an ideal tourism destination. Jamaica's tropical climate and natural beauty attracts worldwide interest to its shores

because of its plentiful and varying attractions raging from its white sandy beaches, culture, historical elements to its newly established eco-tourism products. This has deservingly renowned Jamaica as a leading Caribbean destination.

Jamaica offers tourists the opportunity to explore and to seek adventure. Tourists now not only want rest and relaxation, but want to experience and learn new things about the destination's culture, history and the natural environment.

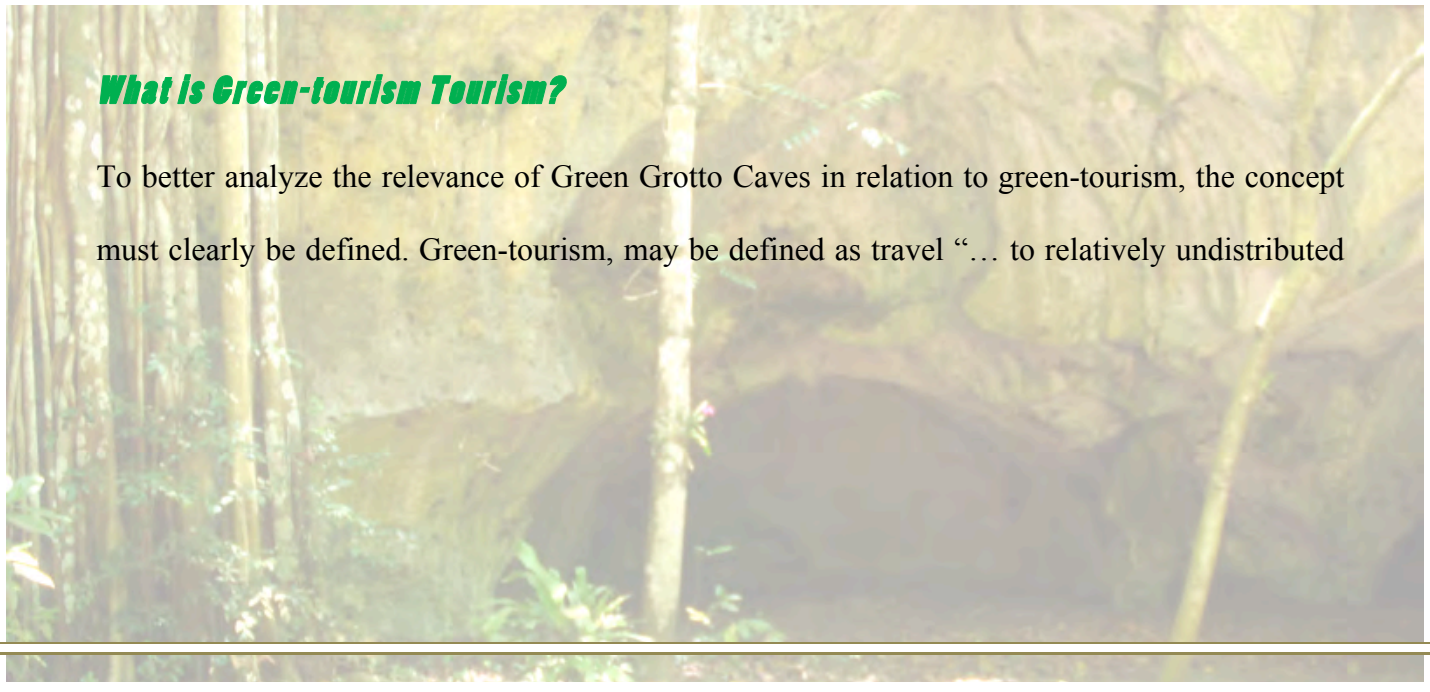
The modern tourist opts for green tourism (Green tourism, synonymous in meaning with eco-tourism is, "*Responsible travel to natural areas that conserves the environment and improves the well-being of local people.*" (TIES,1990)) as they seek to lower their carbon footprint and to help in their own way to sustain the natural environment. Jamaica is one such destination that offers Green Tourism, for example, our caves. Caving offers tourists an exciting and adventurous experience where they are allowed to view and experience the natural environment and ecology, leaving only their shoeprint and taking only good memories and pictures from their experience. Green tourism allows for sustainability as it has minimal or no impact on the natural environment. Green tourism unlike many other forms of tourism does not depreciate the island's sensitive natural resources.

Green tourism in itself does not consume natural resources. Development of an eco-tourism product positively affects the environment as it enables even further sustainability of the natural environment. Current development of an eco-tourism product aims for long term sustainability.

Although Jamaica is heavily dependent on income derived from tourism, it is important that the country's natural resources be maintained for future generations to experience.

Jamaica's tourism has shown that it is adaptable and continually responds to our rapidly changing world. Going green is a key component of the next phase of change in the industry. And as the industry evolves, Jamaica is poised to continue to lead the region in Tourism, having environmentally friendly visitors and providing environmentally friendly tourism products. For our study, we wish to examine the Green Grotto Caves - an example of one of Jamaica's leading attractions that has invested in being "Green".

Green Grotto Caves known at various times as the Runaway Bay Caves, Cave Hall Caves, Discovery Bay Caves, Dry Harbour Caves, Hopewell Caves, Rum Caves and Dairy Caves, are among Jamaica's most prominent natural attractions. They are of international repute and have been seeing visitors since the 18th century. The central feature of this natural attraction is the large labyrinthine limestone cave with its numerous rock formations, its stalactites, stalagmites and abundance of overhead ceiling pockets and unique speleothems (animals). **A true "Green" Grotto Cave; a leading attraction that lives up to its name.**



What is Green-tourism Tourism?

To better analyze the relevance of Green Grotto Caves in relation to green-tourism, the concept must clearly be defined. Green-tourism, may be defined as travel "… to relatively undistributed

or uncontaminated natural areas with the specific objectives of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas" (Ceballos-Lascurain, 1987). Based on this definition, it is evident that Green Grotto Caves, along with its visitors, provide and engage in all the aforementioned characteristics of green tourism respectively. Another important criterion of green-attractions is its contribution to education and awareness of both guests and locals.

Jamaica's attractions are widespread across the entire island with the majority on the north coastal areas ranging from a number of hotels, tours, caves and other attractions. In addition, most of these attractions have received international recognition and certification. One common certification shared among these attractions is the Green Globe Certification.

Researcher, Jon-Ross De La Motta at the entrance to one of the caves at Green Grotto. Picture captured by Jezeel Martin

Why choose Green Grotto Caves as our case?

The Green Grotto Caves are rich in history and are part of a property, which has been one of Jamaica's outstanding natural attractions on the North Coast. The caves are of international repute because of its eco-touristic activities

and services, from which they have garnered **gold** Green Globe Certification.

As a result of the global interest in green-tourism and the fact that there are many foreigners who are becoming interested in green-tourism in the island due to Jamaica's current certifications in the green-tourism world, we recognize that many green attractions do exist on the island. In addition, for green-tourist enthusiasts, Green Grotto Caves is as good as it gets. We will examine why this attraction became 'green' and its sustainability as a green-tourism attraction and provide recommendations where necessary.

DESTINATION JAMAICA

Brief overview of Jamaica

The country's name, Jamaica, is said to be the translation from the Arawak word Xaymaca, meaning "land of wood and water" or "land of springs".

Jamaica is the third largest of the Caribbean islands being the largest English speaking country. Located 90 miles south of Cuba, 600 miles south of Florida, USA, and 100 miles south-west of Haiti, you will find this magnificent island surrounded by the Caribbean Sea. Kingston; the capital also known as the "heartbeat of Jamaica" is the largest city and is located in the south-eastern part of the island.

Jamaica's culturally diverse population consists of approximately 3.1 million people with the predominant races consisting of Africans, Europeans, East Indians and Chinese, hence Jamaica's

motto - "Out of Many, One People". Jamaica's official language is English; however, one will find most Jamaicans speaking an English-based dialect which is known as patois.

On August 6, 1962 Jamaica became independent from the United Kingdom, thus becoming a member of the Commonwealth, with Queen Elizabeth II as Head of State at Independence.

Since 1962 Jamaica has been a member of the United Nations along with its Specialized and Related Agencies. Jamaica is also a member of the Organization of American States (OAS), Caribbean Community (CARICOM) and the Association of Caribbean States (ACS)

Jamaica has fourteen parishes, namely: Kingston and St. Andrew, St. Catherine, Westmoreland, Hanover, St. James, St. Thomas, Portland, St. Mary, Trelawny, Manchester, Clarendon, St. Elizabeth and St. Ann.

The resort areas of Jamaica

Jamaica's unique and varying natural environment and rich culture makes the island an ideal tourist attraction. The island's tropical climate draws thousands of tourists every year to the attractions because of what its natural beauty offers.

The majority of the island's tourist activity centres are on the coastal areas, by the wide stretches of white sand beaches and calm, clear blue seas. These qualities have allowed Jamaica to become renowned as a leading Caribbean destination. However, there are six resort areas island wide where one can truly experience the wonders of Jamaica's tourist products.

These parishes form Jamaica's six resort areas namely: Negril, Montego Bay, Ocho Rios, Port Antonio, Kingston and the South Coast.

Map of Jamaica showing the major destinations

The map of Jamaica highlights the resort areas in Jamaica. When visitors arrive in the country, these locations are predominantly the most common places tourists will visit. These resort areas are appealing to visitors because of the wide range of activities that can be done in these locations. These resort areas boast a range from luxurious large hotels to small and intimate guest houses to fit the needs of visitors.

GREEN TOURISM

Green tourism, synonymous in meaning with eco-tourism is, "*Responsible travel to natural areas that conserves the environment and improves the well-being of local people.*" (TIES,1990).

Green tourism principally aims to increase conservation and to reduce the negative effects of standard tourism on the environment and on people. The term green tourism is often used interchangeably with Sustainable tourism, Alternative tourism and Responsible tourism because they share common concepts with minute differences (TIES).

- **Sustainable tourism** is tourism that meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future. It has the same ideals as ecotourism but is not limited to natural areas.
- **Alternative tourism** is any type of travel that is not mass tourism. This includes backpacking, volunteer tourism, adventure tourism, historical tourism, tornado chasing, couch surfing or any other form of travel that is atypical.
- **Responsible tourism** is tourism that respects the local cultural forms and local people.

Characteristics of Green Tourism

Image by www.whl.travel.com

The International Ecotourism Society (TIES) is recognized as an international association that educates and promotes the development of green tourism. The seven characteristics of green tourism as per the TIES are:

- Involves travel to natural destinations.
- Minimizes impact and builds environmental awareness.
- Provides direct financial benefits for conservation.
- Provides financial benefits and empowerment for local people.
- Respects local culture.
- Supports human rights and democratic movements.

Criteria for green tourism

Given the aforementioned characteristics of green tourism, ideally, green tourism should satisfy several criteria according to United Nations Agenda 21 plan(1992), such as:

- conservation of biological diversity and cultural diversity through ecosystem protection
- promotion of sustainable use of biodiversity, by providing jobs to local populations

- sharing of socio-economic benefits with local communities and indigenous peoples by having their informed consent and participation in the management of ecotourism enterprises
- Tourism to unspoiled natural resources, with minimal impact on the environment being a primary concern.
- minimization of tourism's own environmental impact
- affordability and lack of waste in the form of luxury
- local culture, flora and fauna being the main attractions

Certifications within green tourism

For the purpose of this case study we will elaborate on the certification standards of the Green Globe Organization through the use of their Green Globe Certification Program or their Earth Check Certification Program.

Image by www.terracurve.com

Green Globe is based upon the Agenda 21 plan, which was originally endorsed by 182 heads of state of the United Nations (UN) at the Rio Earth Summit of 1992 and provided a set of principles for local, state, national and international action on sustainable development. The Green Globe program aims at providing guidance materials and support for industry members undertaking activities to achieve sustainability outcomes in the Agenda 21 target areas. The

overall plan aimed to convert the objectives into specific targets, and named ten areas in which travel and tourism operations could take action, including:

- Waste minimization, reuse, recycling;
- Energy efficiency, conservation, management;
- Management of freshwater resources;
- Waste water management;
- Hazardous substances;
- Transport;
- Land-use planning and management;
- Involvement of staff, customers, communities in environmental issues;
- Design for sustainability; and
- Partnerships for sustainable development
- Corporate Social Responsibility

Green Globe Certification

In 83 countries across the world, education, certification and training are provided by Green Globe. Green Globe is based in Los Angeles, California, having partners in Mexico, South America, South Africa, Middle East, the Caribbean and Europe (www.greenglobe.com).

Green Globe Certification provides certification for the sustainable operations and management of travel and tourism companies and their related supplier businesses and also maintains a global network of independent auditors providing third party inspection and validation.

Based on internationally accepted criteria developed during the 15 years of the Green Globe program, according to its website, it is stated that the Green Globe Certification is active in harmonizing with other established sustainability certification programs around the world. This harmonization process contributes to maintaining core criteria and at the same time address regional issues through the adoption of locally developed standards.

Green Globe is an Affiliate Member of the United Nations World Tourism Organization (UNWTO) and is part owned by the World Travel & Tourism Council (WTTC), one of our global Partners. Green Globe is also a member of the governing council for Caribbean Alliance for Sustainable Tourism (CAST).

This Certification operates under a ten year license from the owner of the Green Globe brand worldwide, Green Globe International, Inc. According to Green Globe, the licensing agreement will be perpetually renewed guaranteeing continuity of operation.

The World Travel Market – London, ITB – Berlin, IMEX- Frankfurt, Caribbean Marketplace among many others are a few of the many world's leading travel and tourism expos and conferences that the Green Globe participates in.

To the latest development in sustainability certification, providing training and education to auditors and to discuss local issues confronting businesses and the communities they work in, Green Globe Summits are held throughout the year in key destinations to provide insight.

Advantageous characteristics of Green Globe Certification

With Green Globe Certification, there are numerous advantages in which one gains. These advantages listed on the Green Globe's website include:

- ✓ -Credibility
- ✓ -Transparency
- ✓ -Lower Operational Costs
- ✓ -Better Business
- ✓ -Corporate Social Responsibility
- ✓ -Better Environmental Performance
- ✓ -Paperless Certification Process
- ✓ -Marketing Advantage
- ✓ - Higher Visibility in the Market

Green Globe Standards

A total of 248 standards can be applied to reach complete sustainability. Green Globe Certification Standards are available in English, Spanish, French, German and Portuguese.

Green Globe Certification is based on the following documents:

- Global Partnership for Sustainable Tourism Criteria (STC Partnership)
- Baseline Criteria of the Sustainable Tourism Certification Network of the Americas
- Agenda 21 and principles for Sustainable Development endorsed by 182 Governments at the United Nations Rio de Janeiro Earth Summit in 1992
- The Mohonk Agreement
- ISO 9001 / 14001 (International Standard Organization)
- Green Globe Standards

Green Globe Certification Standard Categories include:

Air Quality, Cleaning, Communication, Community, Corporate Social Responsibility, Conservation, Cultural, Education, Emissions, Energy, Facility, Hazard, Policy, Purchasing, Recycle, Reduce, Reuse, Waste, Water.

A selection of 248 standards are applied to the individual certifications. Standards vary by type of certification, geographical area as well as local factors. Green Globe standards are reviewed twice per calendar year and are always updated to the highest international standard. Sophisticated web-based tools are available for Green Globe clientele assuring a smooth and paperless certification process.

The Green Globe Index provides an immediate measuring tool and is part of the certification process. Green Globe Certification is in complete compliance with ISO 17021 meaning that each certification is audited by an accredited independent third-party auditor.

Green Globe Certification Standards

Benchmark bronze	Certified silver	Certified gold
3rd defacto standard	2nd highest	1st highest

The benefits of being environmentally viable

Tourism is an integral source of income and foreign exchange in Jamaica. Tourism in Jamaica depends on the natural resources that the island has to offer. Jamaica's many natural attractions have come to symbolize what the tourism product in Jamaica has to offer. Operators in the industry have come to realize how much they depend on the environment, and so as to guarantee continued prosperity, it is made priority that the natural resources of Jamaica are protected and preserved at all times. In retrospect, without Jamaica's natural environment, there would nothing that our tourism product can offer. If we do not properly care our natural environment, it will be lost, and future generations will be denied it benefits.

It is with this in mind that certain programs have been implemented amongst operators in the tourism industry as a means of environmental preservation, this is critical, as Jamaica seeks to develop a sustainable eco-tourism product. One option being implemented among operators in the island is the Environmental Management Systems or EMS.

An EMS is a set of management processes and procedures that allows an organization to integrate environmental concerns and issues into recurring operational decisions and practices, thus improving both environmental and economic performance.

The popularity of EMS has increased in Jamaica with the demand for an eco-friendly environment by residents and tourists. Thus, various systems of preservation and conservation have been increasingly accepted, adopted and implemented by various industries; especially those who are tourism based, services, utilities, government and commercial enterprises concerned with the achievement and demonstration of sound environmental performance by controlling, reducing and preventing the impact of their operations on the environment. The EMS approach is also being increasingly adapted as a means of achieving continual improvements in internal efficiencies within operations, thus helping to reduce costs and achieve a competitive advantage.

EMS options include the ISO Model and the Green Globe Model. It is important to note that many tourism products in Jamaica are seeking, adapting or have already adapted to Green Globe Certifications. The benefits of being environmentally conscious include:

1. **Cost Savings;** Successful environmental management will, through its course, lead to cost savings. The most common benefits derive from a review of resource and energy utilization and its efficiency, forcing full consideration of alternative energy resources and their cost effectiveness. The other element will be minimization of waste and cost of disposal.
2. **Customer Requirements;** The range and diversity of customer needs and expectations are constantly evolving, with many customers increasing preference of goods and services that demonstrate that they are environmentally viable. Consumers tend preference to such goods, services and operators that practice eco-friendly practices and will thus encourage others. These, suppliers or operators who adopt eco-friendly practices will see more customers.
3. **Corporate Image;** The ability to demonstrate a responsible environmental attitude can dramatically improve the image of the corporation. Even more importantly positive publicity about the corporation's environmental performance is always advantageous, but negative publicity about the organizations environmental performance is always highly damaging.
4. **Legislation;** The scope and severity of environmental legislation is ever increasing. A management system that ensures the recognition of the requirements and compliance with them will ensure that firms avoid penalties in addition of the publicity that ensues and environmental prosecution.

5. **Investment;** Investors are increasingly moving to 'green' portfolios, and it is interesting that the financial performance of these 'green' portfolios are more profitable in comparison to traditional operations. In seeking additional investment for the organization it is sensible to ensure the widest scope and this is only aided by a demonstrably sound environmental performance.
6. **Insurance;** Insurance agencies are fully aware of the risk to their policies from poor environmental performance of the insured. Companies with a sound and effective environmental management system are able to demonstrate that they pose less risk to the insurance agency and create a negotiating tool for lower premiums. Some insurance agencies now require an environmental audit of the company prior to agreeing insurance.
7. **Marketing Opportunities;** All companies seeking growth would want their product and services to be attractive to the widest possible market. Good environmental performance will ensure continuation within a larger market.

An EMS is the most practical and beneficial way to promote and adapt to environmental policies for organizations which depend so much on the natural environment.

CAVES

http://media-cdn.tripadvisor.com/media/photo-s/01/1a/cf/45/belize-cave-tubing-with.jpg

A cave is a natural opening in the ground which light cannot pass through and large enough to accommodate a person. Caves occur in a wide variety of rock types and are caused by many different geological processes. Caves range in size from single small rooms to interconnecting passages many miles long. **The scientific study of caves is called speleology, and a person who studies caves is referred to as an speleologist.** Caves have been natural attractions since prehistoric times. Scientific evidence of early man's interest has been discovered in caves scattered throughout the world. Fragments of skeletons of some of the earliest manlike creatures have been discovered in cave deposits in South Africa, and the first evidence of primitive Neanderthal Man was found in a cave in the Neander Valley of

Germany. Caves hold a lot of information, and it helps scientists to discover mysteries of the past and gives also a glimpse of what the future may be like.

Types and formation

The formation and development of caves is known as speleogenesis. Caves are formed by various geologic processes. These may involve a combination of chemical processes, erosion from water, tectonic forces, microorganisms, pressure, atmospheric influences, and even digging.

Solutional Cave

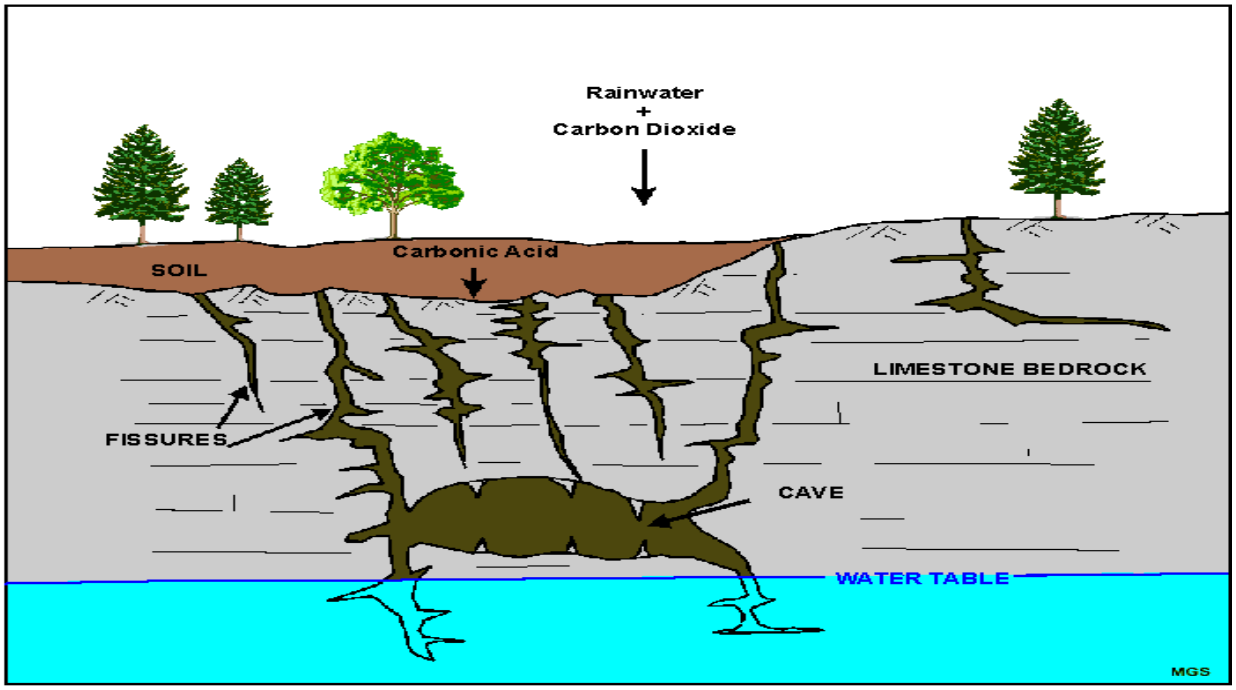


Diagram illustrating the formation of a solution cave
https://maine.gov/doc/nrimc/mgs/explore/bedrock/sites/feb07-3.gif

http://www.scienceviews.com/photo/browse/SIA2658.jpg

Solutional caves are the most frequently occurring types of caves, and such caves form in rock that is soluble, such as limestone, but can also form in other rocks, including chalk, dolomite, marble, salt, and gypsum. An example of such a cave is the Green Grotto Caves. Rock is dissolved by natural acid in groundwater that seeps through bedding-planes, faults, joints and other forms of earth. Over time these depressions expand to become caves or cave systems.

Thurston Lava Tube

http://www.britannica.com/EBchecked/topic-art/317653/116903/Thurston-Lava-Tube-Hawaii-Volcanoes-National-Park-Hawaii

Lava Caves

Lava caves are tunnels or tubes in lava formed when the outer surface of a lava flow cools and hardens while the molten lava within continues to flow and

eventually drains out through the newly formed tube.

Sea Caves

http://www.horizoncon.com/More_Maui99/Looking_through_the_sea_cave_entrance.jpg

Sea caves are formed by the constant action of waves which attacks the weaker portions of rocks lining the shores of oceans and large lakes. Such caves testify to the enormous pressures exerted by waves and to the corrosive power of wave-carried sand and gravel.

Glacier Caves

Ice cave in Glacier Gray, Torres del Paine National Park, Chilean Patagonia

http://www.flickr.com/photos/tholub/365640515/

Glacier caves are formed by melt water which excavates drainage tunnels through the ice. Of entirely different origin and not to be included in the category of glacier caves are so-called "ice caves," which usually are either solution

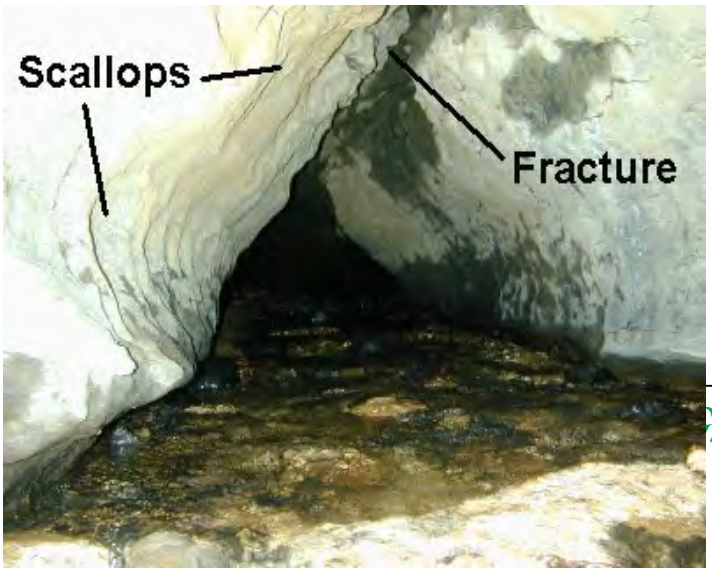
caves or lava caves within which ice forms and persists through all or most of the year.

Corrasional Cave /Erosional Cave

Image courtesy of www.goodearthgraphics.com

Corrasional or erosional caves are those that form entirely by erosion by flowing streams carrying rocks and other sediments and wind. These can form in any type of rock. Generally there must be some zone of weakness to guide he water, such as a fault or joint.

Fracture Cave



Fracture caves are formed when layers of more soluble minerals, such as gypsum, dissolve out from between

layers of less soluble rock. These rocks fracture and collapse in blocks of stone.

Talus Cave

Talus caves are the openings between rocks that have fallen down into a pile, often at the bases of cliffs.

Anchialine Cave

Anchihaline caves are caves, usually coastal, containing a mixture of freshwater and sea water. They occur in many parts of

the world, and often contain highly specialized and endemic species.

op sals/Pet
F rida.jpg

Features of a Cave

The general name for cave features is speleothems. Cave features are usually formed by slow-moving water that has high calcium carbonate content.

-Chemical changes inside the cave make the minerals harden and form deposits, such as icicle-like stalactites (which hang from the ceiling) and

-Stalagmites (which rise up from the ground).

-Columns are created when a stalactite and stalagmite join together.

Stalagmites and stalactites found in the Green Grotto Caves. Picture captured by Jezeel Martin

-Cave pearls are smooth, rounded speleothems that form in shallow hollows where water drips. –

-Curtains are folded sheets of hardened mineral from the ceiling or wall of a cave, often so thin that they are translucent. Some of them look like large stone strips of bacon, while others look like sheets of long icicles.

-Dripstone is the term for calcium carbonate deposits such as stalagmites, which were formed when water dripped through a point of aeration.

- Flowstone is the term for mineral deposits that were formed by water flowing along the floor and sides of caves.

- Other minerals, such as gypsum, also form deposits. When calcium carbonate crystallizes, it forms the minerals calcite and aragonite .

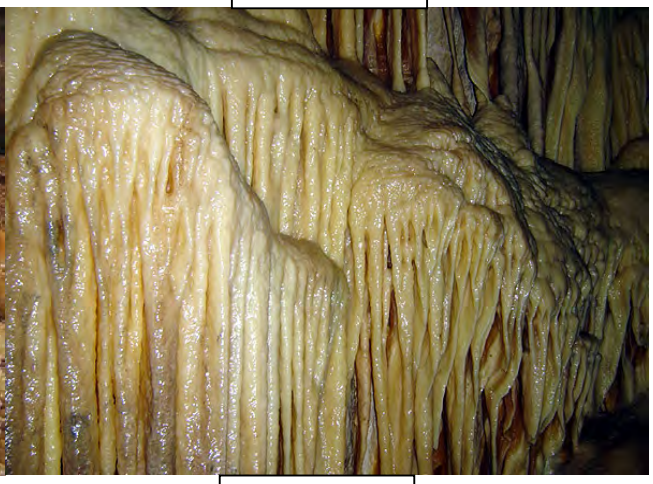
stalactites

stalagmites

columns

curtains

Cave pearls



Flow stones

CAVING

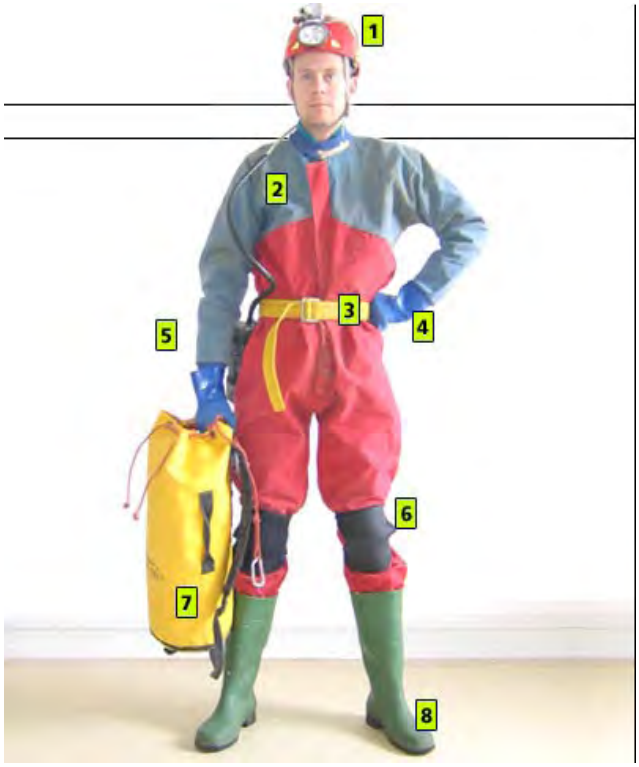
Caving also known as spelunking and occasionally potholing is the recreational activity of exploring wild caves. It may contrast with speleology which is the scientific study of caves and the cave environment. The challenges of caving depends on the cave being explored or studied, but often include passing through pitches, squeezes, and water . Climbing or crawling is often necessary, and ropes are used extensively for safe passage of particularly steep or slippery passages. Caving is often undertaken for enjoyment, for physical exercise, as well as original exploration. Physical or biological science is also an important goal for some cavers. Undiscovered cave systems comprise some of the last unexplored regions on earth and much effort is put into trying to locate and enter them. In well-explored regions the most accessible caves have already been explored, and gaining access to new caves often requires digging or diving. Caves have been explored out of necessity (for shelter from the elements or from enemies), out of curiosity or for mystical reasons for thousands of years. However, only in the last century or two has the activity developed into a sophisticated, athletic pastime. In recent

decades caving has changed considerably due to the availability of modern protective wear and equipment.

Caving Equipment

1.PetzlExplorerHelmet

Excellent system. Helmet mounted battery, waterproof and almost failure proof torch. Integrated optional carbide system.



2. Warmbag Oversuit

Extremely durable and a reasonable loose fit. Zipper and Velcro closure in top and bottom. Neoprene Cuffs at wrists and neck.

3. Loadbearing Belt

Essential for belaying and attachement of life lines. Also practical for attachment of dragbag and other loose items

4. Rubber Gloves

Heavy duty rubber gloves for keeping water out, avoiding sharp rock cuts and keeping hands clean.

5.Ariane Carbide System (behind)

Although a bit maintainance heavy when working smoothly the carbide light gives and excellent ambient all round light enabeling you to cave faster (in big passages) and see more. Downsides are the added item on the belt, possible polution. With the new LED systems out there, carbide is used less and less these days.

6. Knee protectors

Comes in various variations, essential for long distance crawling.

7. Rope (drag) bag

Depending on use comes with a variaty of handles, attachment loops and straps. Fairly standard size.

8. Wellingtons

Keeps water out. A pair with a nice profiled sole is for better foot comfort and friction on those many mud climbs that one will be attempting in the cave.

CAVES IN JAMAICA

Geographical history

Jamaica's geographical history began long ago, when a giant plume of magma, of molten rock, rose from beneath the earth and formed the Caribbean Plate upon which Jamaica resides. The Caribbean plate slowly began to drift. Over millions of years, Jamaica followed this plate eastward through what were then open seas between North and South America. For a great length of time the island rested above sea level.

Approximately 40 million years ago, Jamaica submerged beneath sea level. As eons passed, the island lay submerged. Hidden in the depths under a mile of water, clay and mud settled layer by layer onto the sunken land mass. For 15 million years Jamaica lay in the abyss and then slowly rose again. First to appear were the Blue Mountains in the east, and then Dolphin Head and neighboring highlands in the west. The reappearance of the land would take millennia before it

was done, but by 10 million years ago Jamaica had re-emerged above the sea.

The clay and mud that had settled on the island during the millions of years spent underwater had by now been turned into limestone, a soft rock easily dissolved by rain. A flat, cracked, plateau of limestone began to be carved and eroded, both above and below the ground. At times, large chambers that had grown in the depths collapsed to leave great pits in the earth. In places, the rivers disappeared into the rock below, finding an easier, lower course to travel. The formation of the caves and sinkholes of the island had begun. As the years passed, and the rain fell, and the caves grew, living creatures found their way to this new land. A long succession of fresh arrivals, birds, plants, insects and reptiles, came and stayed to call it home. Amongst the last to arrive were creatures that were clever: the humans called the Taino.

History

The Taino, in their myths, believed themselves to have originated in a great cave in Hispaniola called Cacibajagua, and from there to have spread to the other islands of the Antilles. Caves continued to play an important part in their beliefs and ceremonies. Numerous sites are known where art, in the form of pictures and geometric designs, is found on cave walls. One famous underground gallery is only reached by descending over 60 feet down a vertical shaft. The effort involved in this kind of endeavor suggests a deep spiritual significance to these drawings. We can't know what drove those artists to make their journeys through the dark to such places, but

we do know that those voyagers were the first explorers of the caves of Jamaica. It is speculated that the Maroons, in their efforts to fend off the English used caves to aid in their guerilla warfare. They used linked cave for ambushes and large caves for hiding place. It is documented that pirates used coastal caves for hiding places. Their use of caves aided them to dodge the law and safely hide their possessions.

This proved beneficial for the maroons as the English were unfamiliar with the caves. We know of one definite attack from a cave by the Maroons: Peace Cave. This is a shelter cave that gives way to a short passage ending in a small chamber. The shelter part of the cave was used to hide, in rebellion, a very effective group of Maroon warriors who inflicted such damage on the British soldiers that England immediately gave up. It is said that the Peace Treaty was signed in this cave soon after and thus began the years of peace that existed between the first and second Maroon Wars. In 1834, saw the abolishment of slavery in Jamaica and caves were no longer used for shelter and as hiding places.

The discovery and uses of guano would change the history of caves in Jamaica. Guano is the excrement of seabirds, bats and seals. Guano manure is an effective fertilizer and [gun powder ingredient] due to its high levels of phosphorus and nitrogen and also its lack of odor. The stimulus for a more exhaustive investigation of the island's caves came about through the need for a local supply of guano during World War 2, when the Jamaican government embarked on an island wide survey of caves for bat guano as a possible solution to the fertilizer shortage. Because of this several guano mining operations took place island wide. Not only the

government but many independent farmers and various other personnel took guano from caves. Guano mining severely damaged cave ecology, ecosystem and is extremely destructive to caves.

Current Status

Jamaica is 60% limestone, scientists estimates that there are over 3,000 caves in Jamaica. It is probable that most of the major river-cave systems of the island have now been identified and at least partially explored. The recording of caves is a continuing activity; the existing database includes over 1,200 sites. Guano mining is almost non-existent.

GREEN GROTTO CAVES

Green Grotto's Background

The entrance sign at Green Grotto Caves. Photo captured by

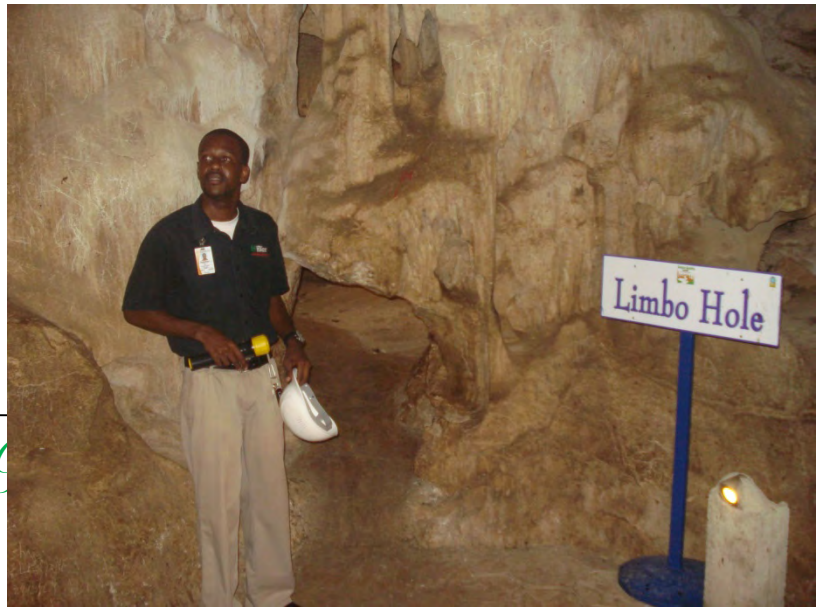
Situated on 25.9 hectares of the island's beautiful north coast between two towns with the romantic names of Runaway Bay and Discovery Bay, Green Grotto Caves is located. The cave is rich in history and is

" Grotto Cave

named for the green algae that cover its walls. The cave is said to be connected to the island's first inhabitants, the Taino people who found shelter in the caves initially. Proof of this is evident in the many artifacts found at the site and the multiple fragments of pottery and adzes that are unearthed from time to time. It is also believed that the Spanish sought protection in the caves having battled the British for control of the island in the year 1655 and also provided a perfect hideaway for runaway slaves and smugglers running arms to Cuba according to Historians. During the Second World War, the Jamaican Government used the entrance of the cave as a storeroom for rum in barrels. The Cave was also used as a back drop for the submarine scene in the James Bond thriller, *Live and Let Die.* Green Grotto Cave was known at various times as the Runaway Bay Caves, Cave Hall Caves, Discovery Bay Caves, Dry Harbour Caves, Hopewell Caves, Rum Caves and Dairy Caves. By the 1960's the Kirkner family gained possession of the cave. Presently the cave is owned by the Urban Development Corporation (UDC) and operated by the St Ann Development Company. Since the 18th century Green Grotto Caves have been seeing visitors and is now regarded as one of the most prominent natural attractions in Jamaica

Activities Offered

- Eco/nature/wildlife
- Educational, research, volunteering
- Tours
- Walking/hiking



A true "

The cave offers a guided tour featuring the services of an experienced staff member, who can discuss their history, geology, and plant and animal life. Jamaica

is home to 21 species of bats, nine of whic

The tour guide leading the researchers in the cave. Photo captured by Jon-Ross

caves are the Big-Eared Bat, the Mustache Bat, and the Jamaican Fruit-Eating Bat. These harmless denizens of the caves can be seen performing their daily activities without regard for the passing tourists. The highlight of the tour of the Green Grotto Caves is the descent down 60 steps, some 37 meters, into the innermost cavern, where visitors will see a crystal-clear underground lake.

The tour guide and researcher Jon Ross climbing the 'down 60 steps'. Photo captured by Jezeel Martin

Uniqueness of Green Grotto Cave

The cave is able to accommodate:

- ✓ Families
- ✓ Physically disabled
- ✓ Adults
- ✓ Seniors
- ✓ Children
- ✓ Large groups

How to get there

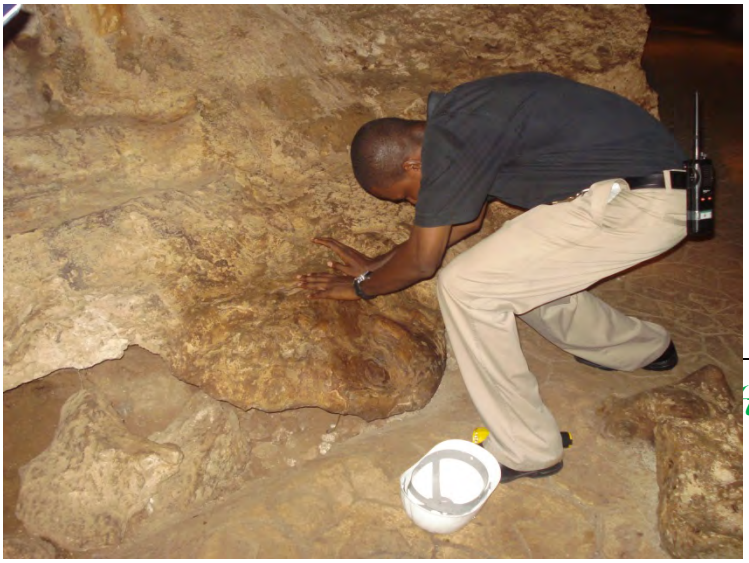
The nearest international airport is Sangster International Airport, Montego Bay, Jamaica and the distance, by land, to or from this airport is 1 ½ hours.

The operations at the Green Grotto Caves follow an Environmental Management System, which ensures that their guests or clients will enjoy the natural environment of its facilities. This is the most easily accessible stalactite cave in Jamaica. Various stalagmites and stalactites look like figures, animals or even Madonna; there are no limits to imagination. The Green Grotto Cave is 120 feet beneath the earth's surface. At the bottom lies a little lake in absolute darkness with blind fish.

Captions of the little lake at the bottom of the Caves. Photo captured by Jon-Ross De La Motta

Uses of the Cave

Green Grotto Caves is currently one of Jamaica's most prominent natural and eco-tourism attractions. The central use of the cave is a tour destination. The tour guides at the cave walk with you giving you a detailed history and description of the cave. The tour gives visitors the chance to experience the cave along with its various rock formation, stalactites, stalagmites and ecology.



The cave is a good destination for visitors who seek a good walking and/or hiking experience. The caves acts a good educational hub as local schools constantly visit the cave in order to educate students about ecology and the benefits of being ecologically sustainable. Green grotto caves acts as a research spot for scientists because of its varying and unique animal inhabitants.

Cave Ecology

. Photo

One such animal which surprised us was this friendly snake. Photo captured by Jon-Ross De La Motta

Green Grotto Caves is rich in speleothems. Like with most caves it has within its environs a sustainable and thriving eco-system. There are many plants and animals within cave. At the entrance you will see many artibeous bats and seabirds residing in the ceiling pockets. The wide array and vast majority of bats is very special. There are also lizards and rats of course.

Artibeous bats residing in the ceiling pockets. Photo captured by Jezeel Martin

The tour guide warned us not to look up with our mouths opens or we might be in for an unfortunate surprise by the bats or birds. Within the cave is the Grotto Lake within which several fish thrive. A common folklore is that the fish in the Grotto Lake

An interesting rock formation was the Map of Jamaica!. Photo captured by Jezeel Martin

might be blind because of the darkness, but scientist estimate that the Grotto Lake is connected to an external water system, so the fish might not be blind.

During our tour we witnessed two differing species of snakes within the cave system. Undoubtedly there are thousands of microbial plants and animals within the cave. Several coral reefs can be found in the cave, these though are above land as it is believed that Jamaica was at one point submerged underwater. Among the plants in the cave system is the ficus tree, the abundant fern plant and a lot of algae (seaweed) on the rocks. Another astonishment is the fig roots which can be seen hanging from the ceiling.

Algae on the ceiling rocks of the cave. Photo captured by Jon-Ross De La Motta

Governing body

The governing body of the Green Grotto Caves is the Urban Development Corporation (UDC). The UDC currently works with other agencies to ensure proper management and sustenance of the Green Grotto Caves.

- **Urban Development Corporation (UDC)**

The UDC is a government agency that directly manages all natural sites owned by the government. The UDC aims:

- To fulfill the role of Government's urban developer in accordance with the provisions of the Urban Development Corporation Act
- To be sensitive to the needs of their clients
- To encourage an environment where new ideas are fostered, trust and mutual respect are developed so that the corporation can benefit from the vast wealth of its most important asset - its people
- To effectively manage mass resources and ensure preservation, sustainability and optimization of returns
- To maintain high professional standards and provide optimal service to their internal and external customers
- To deliver quality and cost-effective products in a timely manner
- To remain a relevant, viable and self-sustaining entity

The UDC works along with other organizations such as the Jamaica National Heritage Trust (JNHT) and the Jamaica Caves Organization (JCO) to ensure the promotion, preservation and the development of the Green Grotto Caves.

- **Jamaica National Heritage Trust (JNHT)**

The JNHT is a cultural organization which aims to inspire a sense of national pride through the promotion, preservation, and development of their material cultural heritage, utilizing a highly

motivated and qualified team in conjunction with all their partners. Today, the JNHT aims to be the primary organization that actively promotes and sustains Jamaica's rich heritage.

JNHT's Objectives

- To foster a sense of national pride and identity through heritage education.
- To identify, research, record, interpret, regulate, protect and preserve the material cultural heritage resources of the Jamaican people.
- To promote the sustainable utilization and management of their material cultural heritage resources.

The primary functions of the Jamaica National Heritage Trust are:

- To promote the preservation of national monuments and anything designated as protected national heritage for the benefit of the Island;
- To conduct such research as it thinks necessary or desirable for the purposes of the performance of its functions under the Jamaica National Heritage Act;
- To carry out such development as it considers necessary for the preservation of any national monuments or anything designated as protected national heritage;
- To record any precious objects or works of art to be preserved and to identify and record any species of botanical or animal life to be protected.

- **Jamaica Caves Organization (JCO)**

The Jamaican Caves Organization, the JCO, was founded in 2002 by a group of cavers who had been actively exploring the Jamaican underground since 1987, but who until then had no formal structure that would assist in the coordination of expedition planning, and no publication in which to report their discoveries. It was this second factor, the lack of a venue in which to report discoveries, which was the main impetus for the creation of the JCO. The only other caving group in Jamaica, the Jamaican Caving Club, JCC, had faded away several years prior to 2002 and there was nowhere to publish reports and maps. The increasing popularity and use of the internet by the general public suggested that it was time to give Jamaican caving an online presence, and concurrent with the formation of the JCO, a website, www.jamaicancaves.org, was launched.

The JCO is a non-profit organization that aims to educate, preserve for speleosites in Jamaica. The JCO works with the government and advise the UDC about cave management. The JCO is involved with the assessment of caves and cave ecology, cave mapping, cave measurement and assessment of cave biota.

The JCO team is made up of both Jamaican nationals and foreign cavers. The group can be broken down into two categories: Cavers and Collaborators. Some of the scientists that we consult with, and assist, do not actively cave as part of our group but are very important, nonetheless.

Currently the JCO are formulating a set of Caving codes for the UDC, these codes will enable optimum sustainability of caves in Jamaica.

Contribution to Ecotourism Development

Management of the Green Grotto Caves take a comprehensive approach to the running of the caves, guided by established principles of sustainability and ecotourism, incorporating them into every facet of the cave's operation. The caves provide complete calm and tranquility in an environmentally friendly manner. From Green Grotto's opening, the caves have endeavored to prove that being 'green' could profitably operate in a sustainable manner, without increasing environmental strain. Besides these stated points, the Green Grotto Caves continues to make significant contributions to the development of ecotourism in the following ways as:

v It provides a framework and benchmark for other eco-developers to copy.

v It provides a realistic example of ecotourism practices and policies.

v It increases awareness about ecotourism…green attractions" and the lifelong benefits to be gained from ecotourism.

v It supports the local economy through job creation and education.

v It has the potential of being self-sufficient. Even if all modern conveniences are removed, the property would still be able to function.

v It voluntarily goes through the process of certification by Green Globe.

AWARDS AND CERTIFICATIONS OF THE GREEN GROTTO CAVES

Below are a few of the awards and certifications that the Green Grotto Caves have received.

Ms. Lamb, Manager of Green Grotto Caves, showing Jon-Ross De La Motta the attraction's Green Globe certifications. Photo captured by Jezeel Martin


PROUD MEMBER OF THE CARIBBEAN HOTEL & TOURISM ASSOCIATION
ST. ANN DEVELOPMENT
COMPANY-GREEN GROTTO CAVES


COMMEMORATING THE INAUGURAL CALL
OF THE
Jewel of the Seas
RoyalCaribbean
INTERNATIONAL


AJAL
2008
MEMBER CERTIFICATE


Jamaica Fire Brigade
FIRE SAFETY CERTIFICATE
(Certificate No. 868/09)
NAME OF PREMISES: GREEN GROTTO CAVES & ATTRACTIONS
NAME OF OWNER / MANAGER: St. Ann Development Company Limited
TYPE OF PREMISES: Place of Attraction
ADDRESS: Discovery Bay, St. Ann
This is to certify that the above-mentioned premises was inspected for the year 2009/2010 and found in compliance with the Fire Safety Provisions of Jamaica.
Special Conditions:
ISSUE DATE: July 23, 2009
EXPIRY DATE: July 22, 2010
Chief Fire Prevention Officer
FIRE PREVENTION DIVISION


Discovery Bay Police Youth Club
Unity Strengthens a Nation
CERTIFICATE OF APPRECIATION
presented to
Green Grotto Cave
In recognition of unselfish service to the Club and Community
L. Walters
D. Morris
December 18, 2005


CERTIFICATE OF MEMBERSHIP
GREEN GROTTO CAVES & ATTRACTIONS
Jamaica Hotel & Tourist Association

All images of the above awards and certifications were captured in the Management office of the Green Grotto Caves by Jon-Ross De La Motta and Jezeel Martin

S.W.O.T ANALYSIS OF THE GREEN GROTTO CAVES

STRENGTHS

- ✓ Good management
- ✓ Committed employees
- ✓ Strong brand image
- ✓ Very unique, offering various activities
- ✓ Continuous staff training and awareness tours for guests
- ✓ Excellent employee relations
- ✓ Excellent customer service
- ✓ Environmental policy implementation
- ✓ Internationally reputable
- ✓ One of the few navigable caves in Jamaica

- ✓ Green Globe Certified

WEEKNESSES

- ✓ Not enough funding
- ✓ Risk of over exposure

OPPORTUNITIES

- ✓ Increased global awareness of ecotourism benefits
- ✓ Increased visitor arrivals to Jamaica due to interest in the caves
- ✓ Has another side of the cave to be tapped into
- ✓ Support the government drive for tourism product diversification and sustainability
- ✓ The development of caving as a prime attraction to the island

THREATS

v Economic instability

v Political instability

v The perception of crime in the island

v Travel restrictions

Research Methods

In order for one to do proper and thorough research, we had to visit the relevant authorities and individuals who could provide us with information, opinions, and advice relating to the Green Grotto Caves. They are a key part in the development of our case. Therefore, we decided on the use of questionnaires to get the relevant information to ascertain whether the Green Grotto Caves being 'green' is a fact or fad.

Objectives

Our questions are geared to track the Green Grotto Caves' performance in key areas of environmental and social performance impact according to the checklists developed for Green Globe. This is to evaluate whether the operation has reached the standards necessary to pass the benchmarking requirements, as stated in the Green Globe Benchmarking Policy. If the results are then positive then it will prove that the Green Grotto Caves is in fact 'green' and sustainable. In order to prove this, we will provide a summary of the 2009 Benchmarking Data Collection survey of the Green Grotto Caves.

Methodology

Face to face interviews, meetings and library visits were done with relevant people, in Kingston at the Jamaica Tourist Board and also at the Green Grotto Caves in Runaway Bay. The interviewers were successful in conducting several interviews which included the Jamaica Cave Organization, the Green Grotto Caves, the Urban Development Corporation and the Jamaica Information Service.

Timing

Interviews were conducted between June 13 – July 9, 2010.

Indicator Measure (Benchmark)

With the Green Grotto Caves being Green Globe certified, every year there is an assessment done so as to evaluate the attraction making sure that the attraction is still on point in keeping with the Green Globe certification standards. Below is a detailed table of the Indicator Measure, otherwise called the Benchmark, which is used to test the Green Grotto Caves.

Indicator Measure (Benchmark)

1 Sustainability Policy	Policy is produced and in place Energy used (MJ / Customer)
2 Energy Consumption	Renewable energy used (%) Potable water consumed (L / Customer) / % of water consumed that is recycled from captured sources (%)
3 Potable Water Consumption	Water saving (Checklist rating) Waste sent to landfill (L / Customer) % of total waste produced that is recycled/reused/
4 Waste Sent to Landfill	composted (%) Waste recycling (Checklist rating) Local employment
5 Community Commitment	(Employees living within 20 km of operation / Total employees) Community contributions (Checklist Rating)
6 Vehicle Management	Vehicle services completed / vehicle

	services recommended
7 Paper Products	Paper product types used (Checklist Rating)
8 Cleaning Products	Cleaning product types used (Checklist rating)
9 Pesticide Products	Pesticide product types used (Checklist Rating)

Results of the Benchmark Findings

1 Sustainability Policy Green Grotto Caves consumed 4.7 MJ per Customer for the year 2008-2009 (01/04/08 – 31/03/09), which was 7.7% better than the Best Practice level.

2 **Energy Consumption** Reported Energy Consumption for the year 2008-2009 (01/04/8 – 31/03/08) produced an estimated 1.0 kg of CO2 per Customer.

3 **Water Consumption** Green Grotto Caves consumed 70.3 L per Customer for the year 2008-2009 01/04/09 – 31/03/09), which was 75.6% below the Baseline level. The Water Saving checklist rating for the year 007-

2009 (01/04/08 – 31/03/09), was 17.8 points better than the Best Practice level.

4 **Waste Sent to Landfill** Green Grotto Caves produced 1.5 L per Customer for the year 2008-2009 01/04/08 – 31/03/09), which was 27.8% better than the Best Practice level.

The Waste Recycling checklist rating for the year 2008-2009 (01/04/07 – 1/03/09) was 17.2 points better than the Best Practice level.

5 **Community Commitment -** Community Commitment for the year 2008-2009 (01/04/08–31/03/09) was 8.0% better than the Baseline level. Contributions checklist rating for the year 2008-009 (01/04/08 – 31/03/09) was 17.2 points better than the Best Practice level.

6 **Vehicle Management** Vehicle Management for the year 2008-2009 (01/04/8–31/03/09) was at the best Practice level.

7 **Paper Products** The Paper Products checklist rating for the year 2008-2009 01/04/08 – 31/03/09) was 20.0 points better than the Best Practice level.

8 **Chemical Products** The Cleaning Products checklist rating for the year 2008-2009(01/04/08 – 1/03/09) was 12.6 points better than the Best Practice level.

9 **Pesticide Products** The Pesticide Products checklist rating for the year 2008-2009 (01/04/08 – 1/03/09) was 11.7 points better than the Best Practice level.

Summary of Findings

Proudly we are to reveal that according to the Benchmark Assessment Report on the Green Grotto Caves, 2009, and the Benchmark data provided in our case, ten of the eleven assessed Earth check indicators are above the Baseline level set by the Green Globe. Also nine of the indicators, *Energy Consumption, Water Saving, Waste Sent to Landfill, Waste Recycling, Community Contributions, Vehicle Management, Paper Products, Cleaning Products,* and

Pesticide Products, are above the Best Practice level. The one indicator that fell below the Baseline level was *Water Consumption,* which was 75.6% below the Baseline level.

We believe that this is an excellent achievement to be very highly commended.

RECOMMENDATIONS

It is very evident that the Green Grotto Cave, takes pride in their sustainable efforts, however, based on the SWOT analysis, the following is suggested:

- Ensure that invasive plant and animal species are immediately removed, so as not to endanger indigenous habitats.

- Embark on a national educational awareness program. That would sensitize students and the general public about the importance of environmentally friendly livelihood activities and the global benefits of green tourism. The program would also seek to educate persons on the value of caves and the steps we can take to preserve them. (May be done during low season (May to December).

- Develop a Green Management Manual for local organizations. Illustrating various techniques of energy conservation and methods to decrease negative environmental impacts. This can be used as a reference guide for upcoming 'green' attractions and environmentally cognizant people alike.

- Establish a national Green-project competition among the schools, where students can write an essay, draw a poster or compose a song that highlights the benefits of preserving the environment.

  Based on the above mentioned suggestions, with proper implementation and monitoring, the Green Grotto Caves will definitely increase its level of contribution to green tourism.

CONCLUSION

"Green tourism, fact or fad?" we heard echoing in our ears and so we pondered its profundity. Alas after many thoughts were garnered, we embarked on a journey to find out if in fact, the

Green Grotto Caves was truly 'green'. "Were the caves really green or just one that flaunts the name 'green' in vain?" was the question we kept in our minds throughout the journey.

Proudly we are to report that according to the Benchmark Assessment Report on the Green Grotto Caves, 2009, and the Benchmark data provided in our case, ten of the eleven assessed Earth check indicators are above the Baseline level set by the Green Globe. Also nine of the indicators, *Energy Consumption, Water Saving, Waste Sent to Landfill, Waste Recycling, Community Contributions, Vehicle Management, Paper Products, Cleaning Products,* and *Pesticide Products,* are above the Best Practice level. The one indicator that fell below the Baseline level was *Water Consumption,* which was 75.6% below the Baseline level.

Therefore we are resolute in saying that 'green tourism' is indeed a fact and not a fad as it is well represented by the Green Grotto Caves of Runaway Bay, Jamaica. The cave is rich in history and is named for the green algae that cover its walls. However, even though that was the reason for its name 'green', we believe that the 'green' in the name Green Grotto Caves symbolizes the uniqueness and diversity of the attraction as a 'green' destination. 'Green' Grotto Caves; a leading attraction that lives up to its name!

The Green Grotto Caves has currently shown that being 'green' is being great and has numerous potentials of being diverse, amusing and even amazing but also completely authentic. From

Green Grotto Caves' opening it has been green and has held on to its green identity, contributing to biodiversity, its community, education and furthermore the nation.

When it comes on to sustainability, there is no doubt as presently if all modern facilities were removed from the caves, they would still be sustainable, if all organizations were to withdraw their support, the caves would still be sustainable. This is so because the Green Grotto is simply authentically green that its entire area alone is captivating, it needs no additional support for marketed beauty. The caves are powered by the environment capturing every sound, aroma and atmospheric cooling of nature. The Green Grotto Cave is amazingly green, practices being green and educates to be green. Therefore we definitely say, the Green Grotto Caves is FACTUALLY GREEN and not a fad.

St. GEORGE'S COLLEGE

DATE: September 30, 2010

SUBJECT: Social Studies

Suggested grade level: 9-11

Duration of lesson: 1hr

OPIC: A true "Green" Grotto Cave; a leading attraction that lives up to its name.

Overview:

In this lesson students will learn about

Green Grotto cave as a leading attraction and to make judgement as to whether it is a true "green" attraction.

Objectives: At the end of the lesson students should be able to do the following:

1. Know what is meant by green tourism.
2. Explain green tourism/ true "green" as it relates to green grotto caves.
3. Understand the characteristics features of green grotto caves that make it a leading attraction.
4. Identify green grotto on a map
5. Make judgement about green grotto as a true "green" attraction.

Materials

1. Film on Green Grotto Caves
2. Lap top computer
3. Projector
4. Screen
5. Handouts with puzzle
6. Markers
7. White board
8. Writing paper for group activity

INTRODUCTION

Students file into class and sit and watch a film strip of the advertisement on green grotto caves.

A mini discussion followed on the film.

Students will provide answers to the following questions:

Have you ever been to a cave?

Would you visit this cave? Why?

What would they expect to find in a cave?

Development of lesson

Step1 **Students** brain storm the term Green tourism with the aid of pictures and the film

as they try to find an ideal definition for green tourism or what it means to be true "green".

Step2 Students write down ideal definition for the terms used.

Step3 Students given a puzzle to solve which list the characteristic features of green Grotto caves.

Step 4 Discussion followed on the answers to the puzzle as students make necessary corrections.

Step 5 Students identify green grotto caves on a map of Jamaica.

Culminating Activity

Based on their knowledge and understanding of green tourism, in groups students will assess and make judgment as to whether or not green grotto caves is a true "green" attraction.

Home Work

Students will create a story, poem, song, drawing or an advertisement highlighting green grotto as a green tourism attraction in Jamaica.

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  ATTRACTION BENCHMARKING

  Green Grotto Caves

  Discovery Bay, Jamaica

  Report Date: 19 August 2008

  Benchmarking Data Collection Period: 01 April 2008 – 31 March 2009

- Fabia Lamb

  Manager of Green Grotto Caves

Met on July 8, 2010

- Jan Pauel: Members of Jamaica Caves Organization

  Met on July 16, 2010

- Andreas Hiddunk: Member of Jamaica Caves Organization

  Met on July 16, 2010

APPENDIX