

EDITORIAL

The Only Magazine about Manuel **Antonio National** Park, current affairs and relevant information.



Ecosystems of the National Park, why they are important and what to do with them



Conservation Projects

in this edition

Origins of the National Park. First settlers: the Quepoas



Local Flora and Fauna: Turtles, Butterflies, Whales...

And much more...



Info: +506 2777 1355 | SINPE MOVIL +506 8696 8671 QUEPOS

EDITORIAL

In our latest edition of this magazine, La Lucha del Parque Manuel Antonio, published in 2020, a great diversity of themes were explored, with the history of the National Park being the focal point. The edition included general information on flora and fauna, a map of Quepos and Manuel Antonio, and what to do in each of these places. We also shared news about the current state of the Park and possible improvements.

This new updated edition will complement the previous articles, revealing different projects in the with focus region, а conservation. The fundamental objective of this new edition is to disseminate information within the framework of environmental education, so that it is more present in our daily lives and is accessible to everyone. We aim to educate people on how to contribute with small. but impactful gestures.

CREDITS:

Director, Richard Lemire.

Design and Edition, Ana Álvarez Trujillo.

Content, Ana Álvarez Trujillo and Collaborators.

Cover photo, Ana Álvarez Trujillo

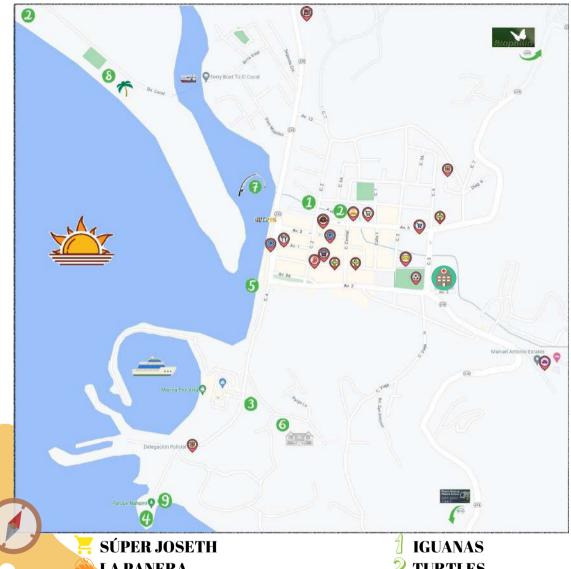
EDICIÓN ESPECIAL



SOMOS TU SUPERMERCADO Calidad, Servicio & Variedad







- LA PANERA
- **MINIPRICE**
- THE MEAT HOUSE
- PHARMACY LA ECONÓMICA
- RAINDROP SPA
- **MANUEL ANTONIO ESTATES**
- **QUEPOS URGENT CARE**
- (P) RESTAURANT TENTACIÓN

- **2** TURTLES
- 3 MACAWS
- 👍 PARQUE NAHOMI
- **5** MALECÓN
- **5** ZONA AMERICANA
- **7** ARTISANAL FISHING
- COCAL BEACH
- **PARROTS**

EDICIÓN ESPECIAL













© +506 2777 9484 | 9483 www.altavistarentalscr.com



Manuel Antonio National Park (MANP)

The Manuel Antonio National Park, as it is today, was established from community pressure that manifested itself against the prohibition by its former foreign owners for the use of the beaches by local residents. Foreigners had a strong interest in developing the area as a tourist center. Thus, thanks to community pressure, the "Manuel Antonio Beaches National Recreation Park" was inaugurated in 1972, by means of Law No. 5100.

In the previous issue, we highlighted and expanded on the history of the MANP and its possible improvements. During the past two years, the circumstances for improvement are practically the same and still remain to be acted upon.

They are as follows:

Enabling the 12 kilometers of "Playa El Rey" with entrance, security and park ranger booths, including access and the construction of sanitary services and quality showers for tourist visits.

·Build a bridge at the "old entrance" of MANP to eliminate crowding at the entrance and to include an exit to the beach area.

Improve and expand the sanitary services within the Park, due to the volume of people who use it daily, as well as poor waste management, and the impacts of this.

·Creation of a parking lot for vehicles at the entrance of the National Park.

·Condemnation and greater control over the scams that occur daily around the park.

WHAT CAN YOU EXPECT WHEN VISITING MANP?

Having the opportunity to tour the Manuel Antonio National Park is a gift for all the senses.

Its trails are safe spaces that lead you to discover different ecosystems within the park itself, such as jungle forests, the mangrove area or paradisiacal beaches.

All the trails of MANP are wheelchair accessible, allowing everyone to enjoy the true beauty of the park.



THE BENEFITS OF HIRING A GUIDF TO VISIT MANP

The certified guides gualified and passionate individuals who have scientific and biological knowledge. This knowledge and their desire to acquire more knowledge about the ecosystems of the park, results in a unique experience for any park visitor. When visiting the park with a guide, one cannot help but admire their ability to recognize the flora and fauna that would otherwise go completely unnoticed by the untrained eye.

Viewing the national park in detail via telescopes provided by the guides, makes the visit a enriching much more experience. Not only is there a guarantee of observing more animals and discovering the peculiarities of their behavior, hiring a guide also ensures that you become more integrated into the Costa Rican culture, since you will learn about the idiosyncrasies and history of the Park itself.

manuelantoniopark.com

If you are considering a guide, it is important to reserve the guide service in advance. Official guides offer hotel pickup with a private transport. This is also an effort to avoid confusion and risks of fraud. Unfortunately it is something to consider as it is prevalent here. For this reason, we insist on hiring guides that are certified or with recognized tourist agencies. This way, you will avoid an uncomfortable situation and will also contribute to the economy and local development. To hire the certified guides you can do it through Local Tour Operators such as







Quepoas, the first settlers

Did you know that there are 8 prehistoric fish and turtle traps on the beaches of Quepos and Manuel Antonio?

The Quepoa, an indigenous group that gave our region its name when they settled on the coast, constructed fish traps more than 600 years ago. Using rocks, they built semicircular formations. which are still in use today. Similar traps are described in Bahía Culebra, in the Northwestern part of the country, dating between 800 and 1350 AD. The function of these traps was to catch all kinds of fish, molluscks, crustaceans or even sea turtles, which were trapped by the change of tide and waves.



According to Donald Melton and Anita Myketuk, scientists based in the Quepos area, the species of turtle trapped was the species Chelonia mydas agassisi or Pacific green turtle. After the marine fauna was trapped at low tide, the Quepoa indigenous people caught them with nets, baskets, hooks or spears, to later consume them or exchange them with other indigenous groups. According to these authors, there are 8 fishing traps in Quepos-Manuel Antonio. Their location distributed as follows:

"FIVE OF THESE PONDS, OR TURTLE TRAPS, ARE FOUND IN THE INLET BELOW (SOUTH) OF THE MAIN TOWN OF QUEPOS, IN AND AROUND QUEPOS POINT. ANOTHER IS LOCATED SHORELINE NEAR THE PIER. AND ANOTHER IS LOCATED IN THE NECK OF THE TOMBOLO WHERE PUNTA CATEDRAL MEETS MANUEL ANTONIO BEACH. THE LATTER CAN BE SEEN FROM THE TOMBOLO TRAP LOOKING ACROSS THE COVE TOWARDS PUERTO ESCONDIDO AND MOGOTE ISLAND.

Karolas Beach Traps (Photo taken by Araya, 2022).

If you visit the traps today at low tide, you will find a large number of fish trapped. Low tide is also the ideal time to look for all kinds of marine fauna, such as octopus, mollusks, fish of all colors, moray eels, clams., oysters, crabs and even lobsters. You will also be able to notice the coral that grows in these places like La Macha beach.

The fauna that lives in these traps is in danger due to erosion produced by waves, pollution and excessive extraction of shellfish and fish.

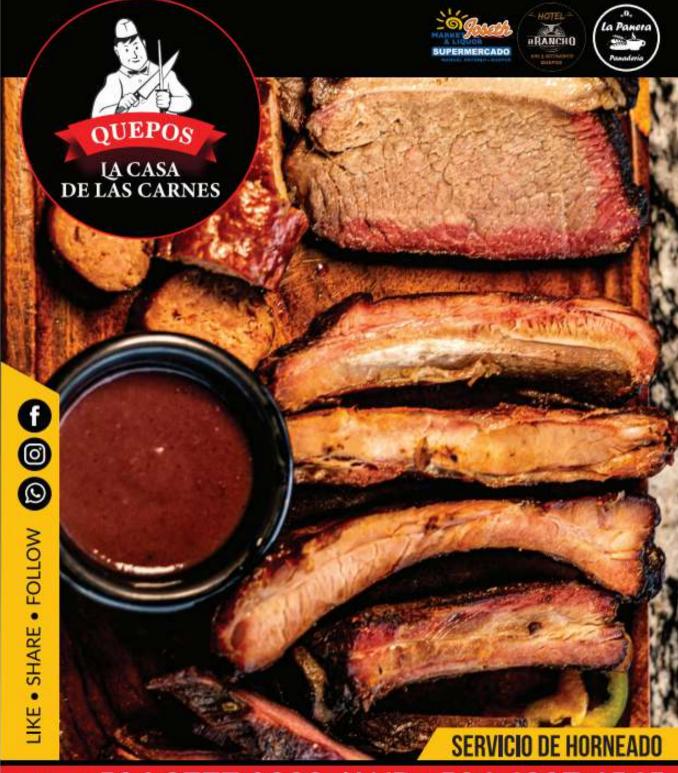
Due to the aforementioned, we recommend the following:

- 1. Do not use sunscreen when swimming near these sites unless it is of natural origin/reef-safe.
- 2. Do not extract any type of fauna from the site.
- 3. Do not remove rocks or extract corals or shells from the site. Each shell is important for the calcium cycle, necessary for all the species that inhabit the traps. Let us take care of this treasure that the Quepoa gave us so that we can still explore and enjoy.

Article: Fishing traps from Quepos
Milenlli Araya Masis
Natural Resources Manager

Trap Beach The Macha

(Photo by: Araya, 2022).



Info: +506 2777 0320 / WP +506 6307 4565

Manuel Antonio Beach Trap, in the Punta Catedral Tombolo (Photo taken by Cabalceta, 2022).



Gemelas Beach Trap inside the Manuel

Antonio National Park. (Photo taken by Cabalceta, 2022).





Bibliography

Milenlli Araya Masis. Naturalist Guide, Natural Resources Manager. milenlly@hotmail.com Tel: +506 88967699.

Manuel Cabalceta Mendez. Naturalist guide and photographer.

Vazquez, R.; Solis, F.; Herrera, A.; Hardy, E. (2016). Pre-Hispanic traps for coastal fishing in Bahía Culebra, Northwestern Costa Rica. Anthropology Magazine of the National Museum of Costa Rica.



Beaches in the region

Nahomi Park is located at the end of the Malecón de Quepos, past the marina, Marina Pez Vela. It is a space that encourages physical activity as it has fixed sports equipment and also offers visitors the possibility of renting kayaks or simply swimming on the beach. Park Nahomi also has tables and benches to enjoy a picnic with friends or family. The park is a community space and boasts stunning sunsets as well.

La Macha is another quiet beach, worth visiting, frequented by both locals and tourists. It can be accessed both by car and on foot. The second option always being the most recommended. On this beach, white sand is combined with the large rocks found on the shore, creating beautiful scenery. To get here, head towards the Bongo Hotel and go all the way down that street. La Macha is also a good place for snorkeling.



La Vaca is of the quietest beaches in the area. La Vaca is usually frequented by locals. It can be easily reached on foot. In fact, it is recommended. Take the street that goes to Ronny's Place then turn on the first street to the right. You will see a road blocked for vehicles From there you walk down the path that leads to the beach. On this beach, you can swim very close to the curious pelicans that are often in its waters.

(Photo on right)





Biesanz is the hardest beach to reach and is further than the others. Walking on the way out is pleasant because it is downhill, however, on the way back, you should keep in mind that it is all uphill. It is accessed by a beautiful and quiet path along side the road from Fmilio's Café. You will see the cars parked on the sides of the street. At Biesanz, you can rent kayaks or SUP's by the hour. The beach stands out for its calm and clear waters. It is ideal for snorkeling. with small waves and is Ideal for families.

(Left)

Playitas is the best beach for surfing or bodyboarding! Playitas is a small beach, however, the coconut palm trees and the large influx of surfers make it special. If you drive there, you must have a 4x4 due to its uneven terrain. To get there, you have to take the street by Emilio's Café and at the next crossroad, turn left. However, walking from Espadilla is simple. You just walk down to the end of the beach! This is a much easier option, plus you can see monkeys and even sloths along the walk if you look closely at the treetops!

Espadilla is perhaps the busiest and most known beach, due to its proximity to the National Park. Espadilla offers many restaurant services; transportation; etc. It stands out for its size and abundance of wild fauna since you will be able different monkeys, the to see occasional mimicked sloth and even curious toucans and McCaws! This beach has lifeguards, so it is a good option for families. At Espadilla, you can take surfing or bodyboarding lessons and try the food and drinks that many locals prepare and sell.









Damas Island Nursery Kemp's ridley turtle

There is a place very close to Quepos, specifically on the Isla Damas, where every night between the months of June and December something exciting happens! 7 years ago Millo and his partner observed a constant problem on the beaches of the island. An abundance of Kemp's ridley turtles, and some green turtles, came to lay their eggs and very few people protected their nests. Both the turtle eggs and the hatchlings themselves have many predators such as birds, dogs, cats and especially humans. The looting of turtle nests for the sale of eggs throughout the country is not an uncommon phenomenon. For this reason, Millo decided to take action. He and his partner created their own nursery, and learned about the turtles.

Financing the project with their own resources, they built a nursery with a capacity for more than 200 nests. What began as a hobby has become a passion and they have not ruled out the idea of expanding the nursery in the future. In fact, by his own initiative, Millo has built some beautiful cabins with a kitchen to both national accommodate international volunteers or even private individuals who want to come and support his project. In addition to being educational, this experience is a great support for the conservation protection of turtles.



(506) 8777 8880 f tortugas de Isla damas

In a natural state, out of 1,000 turtles, 2 or 3 survive. In a state of conservation, the probabilities greatly are increased. Every year, around 10,000 turtles are released in this hatchery and over the past years, thanks to the Isla Damas Hatchery, more turtles will arrive to nest in this region. It is very likely that these turtles were born in the first years of the Nursery, since for the turtles to nest have thev to spend approximately 8 to 12 years at sea, before they are able to lay eggs. Ridley turtles nest up to twice a year and in each nest they lay an estimated 110 eggs. The eggs take about 50 days to hatch.

Millo does not hesitate to share the knowledge he has acquired over the years and also what is happening currently at the Isla Damas Nursery.

The nursery is a seemingly simple structure, however, it requires a lot of dedication. When the turtle hatching season ends around the months of December to March, Millo must empty the entire hatchery and clean the sand. The nursery has a minimum depth of one meter... can you imagine the work for one or two people? Certainly an example that individual actions have great impact!



Photos by Ana Alvarez Trujillo (2022)



The Mangrove, a unique ecosystem

1% of the country's territory is made up of mangroves.

Mangroves are ecosystems that are found between the land and the sea. Mangroves are transitional habitats found in tropical and subtropical zones where there is abundant precipitation and high temperatures. The greatest diversity of mangroves in Costa Rica is found in the Pacific zone. The largest in the country is that of Térraba-Sierpe. They are very important from a biological point of view for carbon fixation greater than terrestrial forests. There is great biodiversity, with a high presence of birds, mammals, mollusks, fish...; They act as a natural treatment plant since they desalinate the water and purify it from the contamination that flows down the rivers, such as agrochemicals from plantations and monocultures.



From the middle and upper basin of the rivers and everything that happens to it, deforestation, farming, and urbanized areas without good wastewater management, the mangroves have been seriously affected. The aforementioned all end in the mangrove swamp. If the mangroves disappeared, many fish would disappear. Many fish spawn and live the first phase of life and the juvenile stage in the mangroves. Likewise, they are essential due to the fact that they support the sediments, thus expanding the coastal profile, and preventing natural disasters related to the growth of riverbeds or the rise in sea level.

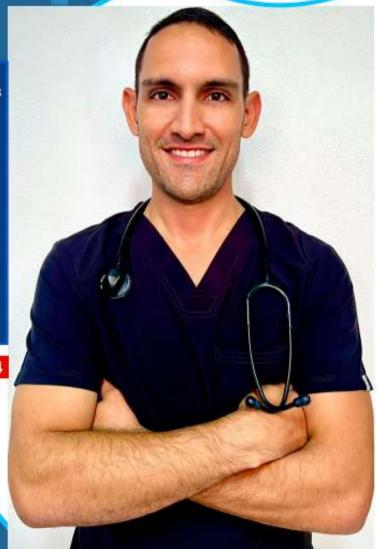


HEALTH CARE

MEDICAL SERVICES

- General medicine for children & adults
- Emergencies 24/7
- Minor surgery
- · Air & ground ambulance
- Home & hotel visits
- · We accept international insurance
- Medical Certificate
- License Driver Certificate
- Medical Certificate for Diving and more.



















The main plant species is the mangrove itself. Its roots intertwine forming a peculiar structure that houses great biodiversity. Its extensive rhizomes form a complex water filtration system that lowers salinity, making the surrounding land fertile.

Margroves can measure between 10 and 15 meters.

In the mangroves of Isla Damas, we find five species of mangrove: the white mangrove (Laguncularia recemosa), nicknamed "palos de sal" due to the whitish color of its trunk. The red mangrove (Rhizophora mangle) has multiple uses from timber, medicinal, tanning, for construction and honey. The black mangroves(Conocarpus erectus) are very dense and tight. The button mangrove (Conocarpus erectus), has a dense shape of a multi-trunked shrub between 1 and 4 m high and has flowers without petals. The piñuela mangrove (pelliciera rhizophoraceae) has an apparent "skirt or pyramid" as a root, which provides it with great support and stability.





In this vegetal density, some canals have carved their way by themselves and others by the hand of man. Today, they are covered in boats or kayaks, in the company of naturalist guides who explain the natural characteristics of the mangrove swamp. Artisanal fishing is also a hobby that can be carried out in the mangroves.

It is true that excessive tourism in the mangrove swamp, given its small size, would end up being harmful in the long run. But if it is done in a sustainable and intelligent way, it can also act as a support by making people aware of the ecological value of the mangroves.

20

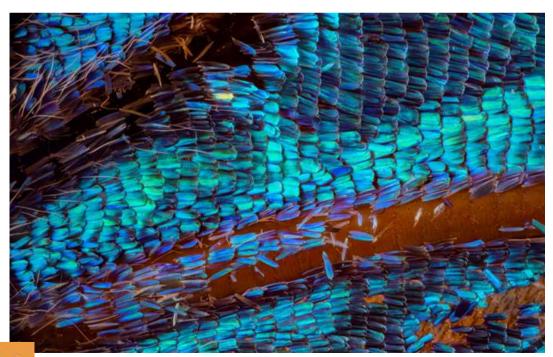
Butterflies of Costa Rica

Butterflies are insects of the order Lepidoptera. Costa Rica has about 1,600 species, which represents 8% of all day butterflies in the total world population. Surprising figures.

It is essential to continue researching in this regard. We need to learn more about butterfly behavior and even its economic and development contribution to the country.

Most butterflies have camouflage patterns on the underside of their wings to defend themselves. They may have false antennaeor certain drawings that simulate two heads or even pretend to be another animal to direct possible attacks by predators to non-vital areas of the body.

The wings are covered with tiny scales, some of which have certain pigments and others that refract light into certain colors, an effect called iridescence.











In kayak or boat tour the mangrove and learn about its ecosystem!

Each species of butterfly deposits its eggs on certain species of host plants. Due to this, butterflies are limited by the distribution of their host plants. This is where we can individually help their proliferation by planting these plant species.



The differences between moths and butterflies.

For a long time we have used the bad term of classifying moths as "moths". If we investigate this issue, we find that moths are a specific family within the moths. They are the ones that we usually find in the closets since they feed on dead skin and hair.

Another myth is related to coloration. Normally we define moths as less colorful than diurnal ones, a fact that has been scientifically investigated and is not true either. We can also find moths during the day... So what is the determining difference? You would have to look at their wings and veins to know. From all this, we can draw the conclusion of how important it is to be specific and not

EDICIÓN ESPECIAL

generalize or continue spreading myths.

The most recognizable butterflies in Manuel Antonio are:

MORPHO BUTTERFLY (MORPHO HELENOR MARINITA)



The larvae feed on the leaves of Ojo de buey, Sangrillo, Arenillo or Almendro de montaña, Chaperno, among many others.

Adults feed on decaying fruits on the forest floor. And they inhabit secondary forests, forest edges and river and stream margins.

OWL BUTTERFLY (CALIGO BRASILIENSIS SULANUS)





The larvae feed on the leaves of the Platanillas, known as Heliconias, Bijagüas, Platano, Banana... Adults feed on decaying fruits on the forest floor. They inhabit secondary forests, forest edges, secondary growth areas, river banks and streams, and forest-lined paths.

EDICIÓN ESPECIAL

MONARCH BUTTERFLY (DANAUS PLEXIPPUS)

Larvae are observed feeding on milkweed leaves (Asclepias curassavica). While the adults can be found flying and feeding on the flowers of the Lemon, Milkweed, Asteraceae, Cinco Negritos, Damos....



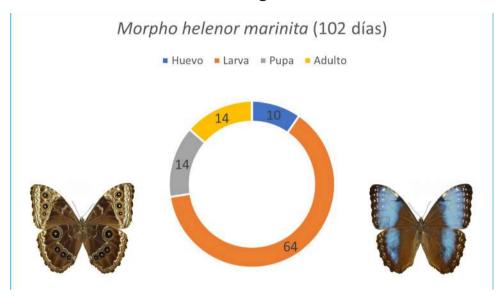
LONG-WINGED BUTTERFLY OR LITTLE POSTMAN (HELICONIUS ERATO PETIVERANA)

The larvae feed on the leaves of different passion fruit or passion fruit (Passifloraceae). Adult Butterflies feed on the flowers of Cinco Negritos, Rabo de Zorro, Pentas, Asteraceae, Hamelia...



A Butterfly Farm is a butterfly production hatchery where live adults are obtained from early stages, or vice versa, with the capacity to continue reproducing in perfect condition in a controlled environment.

Next to Quepos, we find the Biophilia Butterfly Farm and Research Center, which shares some interesting information with us such as:





EDICIÓN ESPECIAL

The above information helps us verify that the life cycle of a butterfly is longer in the larval state than as an adult butterfly itself.

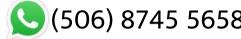
This would be an example of the number of aspects that can be investigated about butterflies, such as their behavior; function in the middle; economic importance to humans, etc.

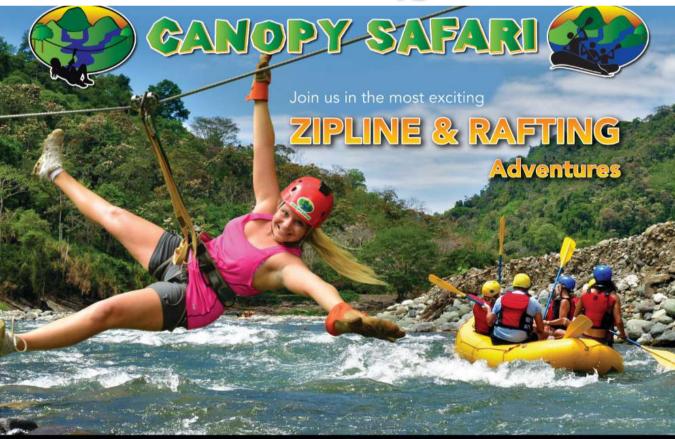
This Butterfly Garden has around 25 species from the area. Butterflies from other areas of the country are not bred to avoid introductions (parasitoids, parasites, viruses, bacteria...) that could alter the ecosystem.

Biophilia aims to empower and educate visitors about the importance of research, education, sustainability and biodiversity conservation, to achieve the Human Development Goals, through Educational Tourism in the Central Pacific of Costa Rica.

If you want to be part of it or learn about the project, go to:

www.manuelantoniopark.com (S) (506) 8745 5658





Medicinal plants from Costa Rica

Costa Rica represents 0.4% of the world's territory and contains 5% of the world's biodiversity between flora and fauna. There are between 10,000 and 12,000 species of plants of which about 300 species are used for medicinal purposes. Due to the fact that plants are a part of our daily lives, we often underestimate them. Sometimes, even, those that grow in our garden or plants we have inside our house as decoration, are the medicinal plants that have the most use. These are the plants where the greatest economic benefit can be produced, since its are abundant: uses ecological pesticides, natural medicine, cosmetics, food supplements...

For example, the aloe vera, Aloe Barbandensis, which has more than 150 uses. One of the uses that stands out is its use in cosmetics as an anti-inflammatory and analgesic. It has a healing and regenerative component. It must be taken into account that in certain doses aloe vera can be harmful. It is essential to know and study it before consuming it. Aloe vera has more alkaline than any other plant. Taking into account that diseases are produced through the acidity of the body, it is an ideal preventative of many diseases.



Neem, (Azadirachta indica), a plant native to India and introduced to Costa Rica is known to cure malaria and cancer. It is also used in the likes of toothpaste, timber, natural pesticides and natural cosmetics such as soap or shampoo.

It is essential that this knowledge does not fall into disuse or disappear. For this reason, it is important that it continues to expand and that we re-establish this exchange of cultivating plants for our benefit and for the good of the ecosystems, since gardens are home to many butterflies, bees and birds such as hummingbirds.





One way to learn more about medicinal plants and their uses is to visit the Garden of Medicinal Plants at Biophilia. It has more than 90 species and the tour is offerd with specialized guides on the subject.

Other common plants are: the Achiote (Bixa orellana) which is used for headaches, neuralgia, asthma...: Chamomile (Chamaemelum nobile) as digestive, sedative...: Arnica (Arnica chamissonis) for sprains, bruises...: Ginger (lingiber officinale) as an anti-inflammatory and cholesterol reducer... or Comfrey (Symphytum officinale), as an emollient and healing agent.



Bamboo Guadua

Guadua is the most important bamboo genus in Central and South America, endemic to this continent and made up of about 30 species. The Guadua angustifolia, native to Colombia, is the most important of these species, thanks to its properties such as resistance and flexibility. It's nickname is "vegetation metal" due to its strength.

These groups of Bamboo form the Guaduales that create spectacular forests where they contribute to very dynamic ecosystems. A large amount of life is recorded inside these ecosystems, including a multitude of plants, mammals, birds and reptiles.

These bamboo formations are very important, even in remote areas, since among their main functions, they are regulators of water flow, absorbing water when there is excess and releasing it little by little, limiting possible floods. They also prevent soil erosion and deforestation to their underground root thanks systems. The bamboo contributes to a large amount of biomass to the land and are one of the largest environmental CO2 fixers on the planet with records of between 100 and 150 tons per hectare in each life cycle, in a duration of 4 to 5 years.



EDICIÓN ESPECIAL

During it's first 6 months bamboo grows at a very high rate and can grow 19 cm per day, until it reaches it's final height of 20 to 30 m. Each section of bamboo is called a culm. After about 4 years, the culm already has an opaque light green color, with an evident presence of lichens on its outer bark. The stem of bamboo has the ideal maturity for its use as structural material when it has the aforementioned characteristics. If cut and harvested correctly (on the first knot and without breaking it) a new culm begins to generate, so a new production is guaranteed.

The use of guadua is not a modern invention. Since ancient times, our ancestors knew of its use. If we add modern technology to this equation, we are able to build wonderful structures with this material.

An example of this, is the Biophilia. Here you can see the impact that bamboo had on the project after the developer learned about it on many trips to Asia.

The result of this can be seen in the main building of Biophilia Park.

A structure that combines all the tradition of bamboo and the innovation of clean energy such as solar panels.



Photo by Ana Álvarez Trujillo (2022) @nomad_arteyorigen

When deciding to start the project in Costa Rica, 30 years ago, one of the first things Biophilia did was to plant Guadua, since all the benefits of the material were very apparent.

After 25 years of ensuring a good crop, the develoers of the biophilla built their own workshop and currently use it to create a new projects together with the advice of the world renowned figure in the field of bamboo, Jorg Stamm and local workers who are learning about this technique.

The 99% of bamboo is usable, since even the sawdust that is generated when cutting it is used as fertilizer for the medicinal garden or for the dry toilet that is located in the same building.

This serves as another example of a means in which to live more harmoniously with nature, and build sustainably.

If you want to learn more about this project, visit biophiliapark.com



CAÑO ISLAND BIOLOGICAL RESERVE



82km south of the Manuel Antonio National Park, is the Isla del Caño Biological Reserve (CIBR). Caño Island was included as an extension of the Corcovado National Park. In 1976 it was legally established as a Biological Reserve on March 9, 1978. The CIBR is located on the Pacific continental region of Costa Rica, 16 km northwest of the Osa Peninsula in the province of Puntarenas. Caño Island consists of 320 terrestrial hectares and 5,800 marine hectares. Its waters have one of the most extensive coral reef formations and are some of the best and healthiest reefs of the Pacific coast of Costa Rica. There are five coral platforms (or low reefs) with extensions ranging from 0.8 to 4.2 hectares. It is an important breeding area for individual humpback whales, both from the northern and southern hemispheres, as well as resident species of dolphins. In the terrestrial area, there are remains of the stone spheres created by pre-Columbian civilizations. Caño Island was occupied by several groups of people. It is believed that between 700 and 1500 B.C. It was used as a cemetery by Chiriquis societies or as a permanent residence by the Quepoas or Bruncas.

On Caño Island, more than 500 mysterious spheres were found. These spheres are made of stone, have an almost perfect shape and their diameter reaches 2.5 meters. To this day, we do not have confirmed answers as to how they were made and for what purpose. Of course, there are many hypotheses, but the lack of concrete answers adds a certain mystery. These stone spheres were brought from the mainland. Even today, transporting multi-ton stone spheres would be quite a challenge. So how did our ancestors get it done with only primitive tools and wooden boats?



It is also worth mentioning that the island also served as a trading post for ships. During the excavations, remains of pottery and carved stone artifacts were discovered. These finds have led archaeologists to speculate that indigenous cultures used the island as a key trading post. The beaches are sand and stone and lack mangroves. The upper zone contains an undisturbed tropical humid forest and there are also secondary forests of different ages. In the forest, 158 species of plants have been identified. (SINAC, 2022). You can see ferns, heliconias, vines, herbaceous plants and some introduced species such as cashew, guava, bananas, mango and oranges.

EDICIÓN ESPECIAL

34

The fauna of the island is not very numerous, but there are species such as boa snakes, foxes, gannets, bats, frogs and eagles. Mahi-mahi fish, also known as dorados, are found in the coastal waters. Another popular species in the waters around the island is the angelfish. On any given day you see sea turtles, rays, dolphins, moray eels, barracudas, sharks, humpback whales or tuna, among other species.

Another important point to consider, is that, being a biological reserve, the number of divers is regulated, and tourists are not allowed to take any marine life, whether alive or dead. You can also snorkel or visit on foot, all with certified guides.

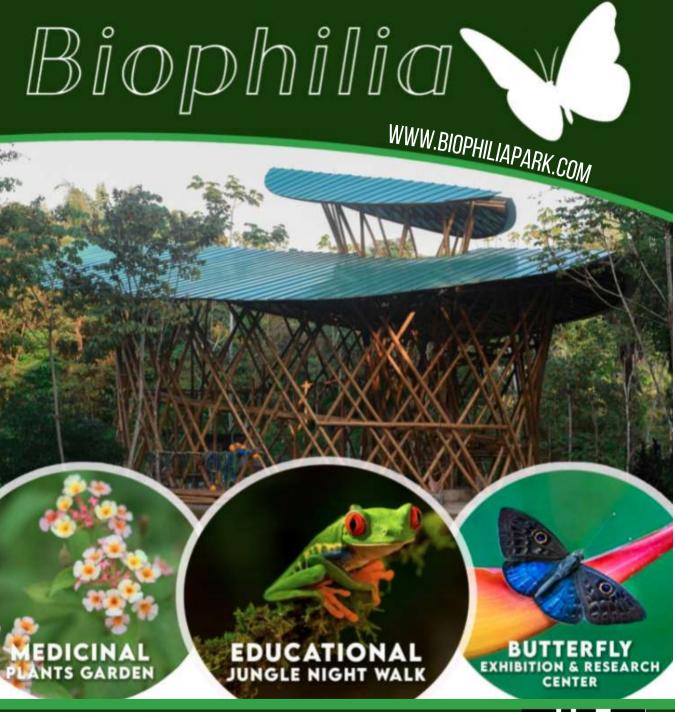
Caño island, is without a doubt an essential place to visit at some point. It serves as another example of the rich biodiversity of Costa Rica and of the fundamentals of conserving these natural environments.

If you want to visit the Isla del Caño Biological Reserve, you can make a reservation through this link with the best official tour operators in the area.





Caño Island Snorkeling





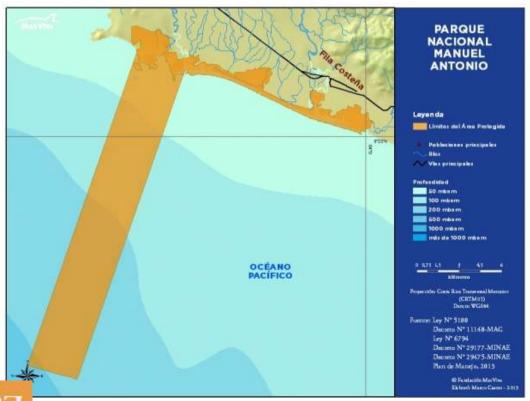




(506) 8745 5658 / (506) 2777 2100

The Maritime Area of the Manuel Antonio National Park and Humpback Whales

The MANP has a protected maritime section, with an extension of 55,000 hectors. This area also includes 12 islands, located a short distance from the coast, most of which do not have abundant vegetation, but are excellent refuges for seabirds. As for the exuberant marine fauna, you can observe: moray eel (Muraea helena); angelfish (Pterophyllum scalare); sea urchins (Echinoidea); manta rays (Manta birostris) and starfish (Asteroidea). The turquoise waters of this park are also an area of passage for dolphins (Delphinidae) and humpback whales (Megaptera novaeangliae).





CONNECTING PEOPLE WITH NATURE







WWW.VORTEXOUTDOORCENTER.COM



+506 83024168



@VORTEXCOSTARICA



VORTEX COSTA RICA



INFO@VORTEXOUTDOORCENTER.COM

Between the months of June and October, humpback whales arrive in the Central and South Pacific, migrating from the southern hemisphere (Patagonia), traveling an average of 8,400 km one way and an equal distance back.

The whales that migrate from the northern hemisphere arrive from December until April, covering an average of 5,200 km one way and the same return.

They navigate around 9 km per hour.

The humpback whale travels great distances from feeding grounds in the cold or even polar seas to the warm water breeding grounds in Costa Rica.

These giants stay in Costa Rica for 10 months in total, the longest humpback whale watching season in the world. Bahía Ballena, the Isla del Caño BR and Bahía Drake are among the best sighting places for this species of whale. The PNM Ballena is, according to National Geographic, one of the 10 best places to see humpback whales.

Humpback whales can
be identified by the
white spots and ends
unique serrations that
appear on their tails,
since they don't change
from birth. These
function as
fingerprints and help
to classify them into
a catalog.

HOW ARE WALES BORN?

Contractions begin and and the the calf is born from the tail, not upside down.

The umbilical cord breaks when the calf is born.

To breathe for the first time, the mother helps the calf swim to the surface.

The whales have eleven-month pregnancies and, once the calf is born, it drinks up to 100 liters of milk daily. 100 liters! A calf will let its mother know that it is hungry by poking her in the belly. This action stimulates the mother's nipple to come out. Because whales do not have lips, the baby is not able to suckle and depends on the nipple to shoot milk into its mouth.

Whale milk has an oily consistency due to its high percentage of fat. This fat also helps keep the milk from dissolving in the water.

Whales often nurse their babies for two years, and after weaning they begin to eat solid food. However, studies are still being done on this matter, since some parts are still not very defined.

To mate, taking advantage of their singing skills, the males emit mysterious songs to court the female. There are studies in which it has been verified that the same song has traveled from one hemisphere to the other through different herds, for this reason it is said that they have a cultural transmission.



Another example of this is when different herds meet in the polar waters of Antarctica. They instinctively organize themselves to use the same hunting techniques. The whales could do it individually, but they know that together they are stronger. Specifically, they use a very peculiar technique that consists of releasing air underwater in a spiral, creating curtains of bubbles that bring fish and krill to the center of the spiral. Via this method, the amount of prey they capture is greater.



Much of the communication is non-verbal, using hops to communicate with each other. The noise of the splashes is heard under the sea many kilometers from where it occurs. This is a way of communicating where they are.

The life expectancy of these whales is between 40 and 50 years. Currently, the only animal considered to be a predator of the humpback whale are the orcas, however, if we refer to another type of predator, it would undoubtedly be humans, due to pollution and indiscriminate and uncontrolled fishing that occurs in some areas of the world.

One way to hold yourself accountable for this is to check the origin of the products you use such as: oils for industrial uses; cosmetics; lipsticks; oil pencils; perfume fixatives; pharmaceutical products; hormones or vitamin A.

If you want to take a specialized tour of the Humpback Whale and see it in its natural habitat, you can make a reservation through this link with the best official tour operators in the area.



www.manuelantoniopark.com



AREA CONSERVATION PROJECTS

KIDS SAVING THE RAINFOREST (KSTR)

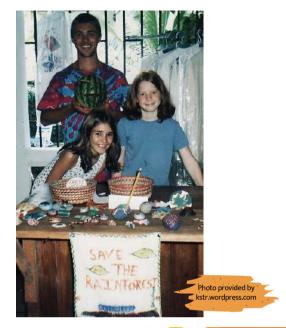
Kids Saving the Rainforest is a non-profit, non-governmental organization based in Quepos, Costa Rica, founded in 1999. The objective of the project is to plant trees in depleted areas of the country, to rescue, rehabilitate and, where possible, release the animals that live in these forests. It is also called a Wildlife Sanctuary. Kids Saving the Rainforest's mission is to protect and rehabilitate wildlife, conduct scientific research, and educate the public and tourists about conservation. They rescue more than 100 animals each year. Currently, almost 50 animals reside here permanently as they cannot be returned to the wild. This can be due to serious injury or taming.





ry rx

KSTR was established thanks to two nineyear-old girls, in 1999, Janine Licare and Aislin Livingstone, who lived in the jungle of Manuel Antonio. Originally, the two girls decorated bottles with paper-maché and painted rocks and sold them on the side of a street, raising money to buy saplings to be planted in a nearby forest. Since then, KSTR has grown into a fully functional environmental organization with a board of directors. KSTR is located just outside of Manuel Antonio, Costa Rica, but has projects in 18 countries.





What is a wildlife sanctuary?

Animal sanctuaries offer a new home to animals left behind and to animals rescued in otherwise life-threatening conditions. They help protect animals from illegal trade and serve as a place where endangered animals can breed while protected. Unfortunately, animals residing in sanctuaries cannot always be returned to the wild. Since its inception, Kids Saving the Rainforest has rescued and rehabilitated 3,000 wild animals, two-thirds of which have been returned to the wild. Another aspect that KSTRF highlights is the protection, conservation and reforestation of the ecosystem where these animals live, the jungle.

Why should we save the rainforest?

The rain forest helps to absorb the rain and release it slowly. Without it, there would be floods and droughts, which causes greater global warming and therefore accelerates climate change. Many species of birds,

animals and plants that live in the rainforest would not be able find the right conditions they need to live and would become extinct. Nearly 50% of the prescription drugs used in the US come from rainforest plants. Leukemia, malaria, and heart disease are treated with medicines from rainforest plants. Indigenous peoples have thrived in tropical rainforests since the beginning of time. Their lives and spirituality are inextricably linked to the plants, animals, and flow of life in this rich environment. Many of them face extinction as rainforests dwindle.

The ANIMAL

Currently, KSTR carries out different programs:

• Wildlife Sanctuary: it is a space that can be visited where you can hire a guided tour to see the facilities and the different animals that live in the sanctuary. You will learn about their life stories and many curiosities that are otherwise not known about these interesting animals beforehand. Volunteers can also help with this proeject.



• Wildlife bridges: this task consists of placing thick ropes, usually blue, in Manuel Antonio and its surroundings, which are used by animals to cross from one habitat to another, safely, avoiding electrocution of the animals.



The Fundamental Program: Wildlife Rescue Center.

This is a refuge for animals found in poor or life-threatening condition. Common accidents include being run over, electrocution, injury due to the attack of a dog or cat and even orphaned babies who have lost their mother.

Injured wild animals are brought in by the community or by MINAET, the government entity in charge of supervising the National Park system. In other cases, it is KSTR who help directly with their ambulance after receiving a call.

Once the animals are in the clinic, the veterinary staff assesses their condition and determines what they need. That is when the recovery process begins. Gradually, as the animals begin to gain strength, the staff takes them to the rehabilitation area, called the Boot Camp Enclosure. This jungle gym is of great importance because it is where the animals will spend most of their time and where they will learn the skills necessary to thrive in the rainforest after their release.

The work of Kids Saving the Rainforest has been recognized by international entities such as Guide Star, Global Giving and Charity Navigator and has been featured in media such as BBC, Huffpost and National Geographic.



EDICIÓN ESPECIAL

KSTR is fully funded by donations, volunteers, and revenue from tours. Manuel Antonio stands out for its great diversity of flora and fauna, from sloths and monkeys to many different species of birds. This is what makes Kids Saving The Rainforest an invaluable resource for preserving and protecting your wildlife.

(in the standard of the standa

www.kidssavingtherainforest.org









MARINE CONSERVATION COSTA RICA (MCCR)

reefs worldwide Coral exposed to multiple threats, mainly caused by human impacts, leading to their degradation. In the tropical Pacific of Costa Rica, reefs have been affected by unsustainable fishing practices, invasive species, river sedimentation and runoff from agriculture and human activity. All of these factors require action after studying the current health of the reefs and the potential for restoration.

Marine Conservation Costa Rica was founded in 2019 by Georgia King and Katharine Evans. Geo and Kat met in 2005 in Costa Rica. "Over the years, we worked together dive as instructors and on various smaller conservation projects. Establishing the non-profit organization meant we could focus on what we protecting our local marine environment, engaging our community and teaching about marine conservation!"



CORAL: ANIMAL OR PLANT?

several centuries, the For of this strange nature organism, which resembles small flowering trees attached to the rocks at the bottom of the sea, was the subject of much debate by naturalists. Corals are, in fact, small animals, called polyps, shaped like mini-flowers that can form colonies. These polyps form a common skeleton that for some species becomes the basis of a coral reef.

Coral reefs are made up of a multitude of coral species that together form an ecosystem, i.e. a very specific natural environment composed of different plants and animals.

Coral reefs are among the largest and most complex ecosystems on the planet. They are home to thousands of species of fish, but also to other animal species, such as crabs, starfish, shellfish, etc.

Coral reefs serve as shelter, food reserve and nursery for their numerous inhabitants: from the smallest algae to numerous fish and invertebrates, but also sea turtles and sharks.

The goal is to have enough

The goal is to have enough

healthy and fertile corals on

the reef so that they can

the reef so that they selfthe reef so that they
once again become a selfonce again become without
sustaining environment
sustaining en

EDICIÓN ESPECIAL

50

Marine Conservation works with 3 species of endemic hard corals:

Pavona gigantea:

This coral comes in various formations. Here it tends to grow in lobed or plate-like colonies. When the tentacles are visible, the colony has a hairy appearance. Pavona has an orange, brown or pink color in our region.

Porites lobata:

Colonies can reach several meters in diameter. The polyps are very small and look like small pores.

They often show scars caused by fish bites. They are beige or greenish in color.

Pocillopora sp:

A genus of branching corals with fairly short branches. It is usually brown to greenish in color. They grow well in stronger currents or swells and grow reasonably fast for a stony coral.







In the last 30 years, Costa Rica has lost 70% of its coral reefs.



WHAT DOES CORAL RESTORATION CONSIST OF?

As a coral biologist and practitioner, Kat understands and explains the science of growing corals underwater. The trick to success is to have diverse and healthy specimens with genetically variant genotypes. Kat and her team practice a three-step process: recovery, growth and transplantation. To avoid disturbing the delicate reef ecosystem, Kat prefers to find corals of opportunity. These are corals that have naturally detached from the reef and would not survive on their own. Once the healthy pieces are collected, phase two begins. Here, the corals are fragmented into small pieces with precision and care using a diamond-bladed band saw and grown into individual plugs. Fragmentation is an important part of the process as it stimulates faster growth, using the corals' own biology that small, young corals grow faster than older, larger colonies. In addition, fragmenting the coral creates a healing response. Kat explains that it is similar to when we cut our finger and our body makes an extra effort and energy to regenerate our skin, corals have a similar process.

Once the fragments are prepared, they are transported to one of the nurseries. The nurseries and fresh coral plugs naturally attract damselfish, which clean the corals by chewing the overgrown algae. Additional cleaning and maintenance is carried out by MCCR staff and volunteers. When the plugs reach optimal size in the nursery, they are ready for the last and most satisfying part of the process: planting. The plugs were designed to attach easily to the reef with a little marine epoxy, resisting Pacific currents. The less human interference with the natural reef,



the better.

In just three years of operation, the coral restoration project has built 35 nurseries with over 700 coral fragments and transplanted 1,000 new coral colonies to the reefs.

Over the years, MCCR has hosted more than 150 volunteers and internships and has a scholarship program for Costa Rican marine biology students. MCCR emphasizes the interconnectedness of our species with our natural environment by encouraging everyone to make lifestyle changes that support a sustainable future. Even if we live in landlocked countries, we can still affect aquatic ecosystems. Through MCCR's adopt-a-coral program, people around the world can virtually foster a piece of coral and, at the same time, support the work of the nonprofit organization.













10 things you can do in your daily life to preserve coral reefs

- 1. Do not deposit garbage or plastics in nature. Generally all waste ends up in the sea or on the beaches. This is one of the great enemies of coral.
- 2. Do not release balloons into the air, they will usually end up in the sea as well and turtles are prone to eat the plastics they find.
- 3. Separating waste, recycling, is one way that materials can be recycled.
- 4. Reduce Co2 emissions by using public transportation, turning off unnecessary lights, turning off the car when parked.
- 5. Be informed about how to conserve biodiversity; climate change; and your own responsibility.
- 6. If you go on vacation, ask the accommodation if it has wastewater management.
- 7. If you travel by boat or ship, make sure they do not drop anchor on the corals.
- 8. If you snorkel or scuba dive, respect the viewing distance of the corals and the life that surrounds them.
- 9. Do not collect corals as souvenirs or buy them as souvenirs.
- 10. Get informed and participate in coral protection and conservation actions.



SLOTH INTITUTE

In Manuel Antonio, inside the Tulemar Hotel, there is a center known as The Sloth Institute. This center has been operating since 2014 and they have already rescued and studied 187 two-toed sloths and 159 three-toed sloths in Costa Rica. This institution is very clear about its mission: "to improve the welfare conservation of sloths through the rescue, rehabilitation and release of hand-reared and injured sloths. At the same time carrying out vital research. conservation and education their programs to ensure survival".

The Institute is 100% funded by raised donations through creative initiatives such as Slothoberfest; the wish list (direct link to purchase equipment), necessary volunteering, sponsorship or the adoption program.

Sloth Institute acts both in its own center, closed to the public to preserve the closest possible resemblance to the natural state, and outside of it, installing, for example, rope bridges, or, "Sloth Speedways", to reconnect habitats that have been disconnected by roads, thus avoiding the electrocution of these animals when crossing the wires.



"OUR MISSION IS TO IMPROVE AND EXPAND THE WELFARE AND CONSERVATION OF SLOTHS".



One aspect that this organization enphasizes, which is very important to be aware of in modern day affairs is:



Never pay to touch, feed, or take a photo with a sloth (or any wild animal). Sloths are wild animals and can bite or scratch you and carry diseases. Also, it is very stressful for them to be touched by strange humans. They just want to live their lives in peace. (The Sloth Institute, 2022).

This problem is very common and can be observed on the beaches of Manuel Antonio, on private tours and even in the National Park. For this reason, it is essential that it recieves more focus and condemnation and that we report it by informing the people who do it, because, sometimes, it happens due to ignorance.

If you visit the Sloth Institutes website, you can read about the different projects they carry out, as well as learn facts about sloths, such as:

Why are sloths so slow?

Sloths have the least muscle mass among mammals. They are also herbivores (two-toed sloths are omnivores), which is a low-calorie diet. Therefore, they do not have many calories to burn or many places to store energy. By being slow, they can save precious energy while looking for their next meal so they don't get sick or starve.





Likewise, "sloths are excellent climbers, but they can also be a bit clumsy. They are not known for their vision (although three-toed sloths have much better vision than two-toed sloths) or for their balance. However, they are extremely flexible and have a strong grip. By moving slowly through the trees, they can plan their travel route more carefully and reduce the chance of falling somewhere dangerous. Sloths are good at falling, however if they fall on something hard or pointy (or man-made structures), they are more likely to injure themselves."





1200

400

8500

METERS OF SLOTH
SPEEDWAYS
INSTALLED

SLOTHS RESCUED & STUDIED TOURISTS EDUCATED

There aren't many things more important to sloths than not being eaten by a predator. Being slow, sloths can remain silent. We have observed sloths for thousands of hours in the forest and can attest to their ability to stay hidden. Not only through incredible camouflage abilities, but also through their ability to move silently through the forest canopy. If a predator can't hear them, it's more likely not to find them.



BIOPHILIA PARK

A pioneering project that goes beyond Environmental Awareness and Research and Ecology. Biophilia represents an emotional bond that binds humanity to the earth; an bond of those who persevere to conserve what remains of Wild Nature and Living Beings. How do they do this and achieve this bond? From the 100% practical experience so that knowledge is integrated in a more dynamic and lasting manner, democratizing biological and scientific knowledge and, therefore, modifying the vision with which we observe nature and its members. In this case, the wild flora and fauna of the Neotropics.

"OUR GOAL IS TO EMPOWER AND EDUCATE VISITORS FROM AROUND THE WORLD ON THE IMPORTANCE OF CONSERVATION AND SUSTAINABILITY."



Another key aspect for Biophilia is Ecological Coherence in its center and in the tours it offers.

- Biophilia uses 85% Renewable Energy produced by its own solar installation installed in the most representative center of Biophilia, built with bamboo and other green materials with little environmental impact;
- they have dry toilets that generate compost for the Butterfly Garden
- they do not use agrochemicals in its gardens
- they use rechargeable batteries, in the flashlights of the night tours
- they own 40% conservation forest within their property
- It is a recovered space, where more than 400 endemic trees that are part of the primary forest that were planted
- and many other examples...

because of this and much more, Biophilia is an example at a national and international level.



Biophilia has four main tours:

- Tour of the Botanical Garden of Medicinal Plants.
- Butterfly Garden and Research Center Tour.
- Flora and Fauna Observation Walking Tour through the Jungle (daily or night).
- Tour in Manuel Antonio NP.

Conducting these tours generates low a very environmental impact and footprint. Their ecological policies are based on not altering the environment for mere human entertainment. Apart from promoting a green economy and a sustainable and profitable development, they seek economic, social and environmental benefitsBiophilia is also committed to hiring local people as well as providing free training that is open to all, thus promoting their commitment to the improvement of the region. They do this by aiding the professionalization of the local agents within tourism to offer information and quality services.

they also participate with schools in the region of Quepos and its surroundings, such as Parrita, to promote the STEAM methodology.



Each workshop is attended by more than 40 children who receive information and questions that probably had not been raised before due to the fast pace in which we live, which does not allow us to stop and observe the simplest things that surround us.





Some of the questions that are raised are as follows:

What is the clothing made of?
What shoes do we wear?
Where and how are they produced?
Is it ecologically sustainable?
What are cell phones made of?
What do we have in hand every day?
How are these components extracted?
What are the consequences for the planet?
and Human Life?
And the very land that we step on every day,
how was it created?



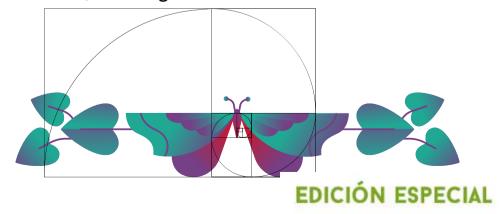


When these questions are raised, there are often long silences, intuitive approaches, and some ignorance. And at the time. same these guestions raise curiosity and reflection within the children. This colloquium was brought losé Montero, forth by biologist in charge of the Biophilia research center and laboratory, and has great scientific relevance in research at a national and international level in relation to butterflies.

The workshop is of excellent quality and coherence, and it is also in line with the values and objectives of Biophilia. It has as its objective to educate children about the care of ecosystems and bring scientific knowledge and research closer so that they can see it as an option for the future by observing it first-hand.



Biophilia is ideal for all ages, for families, people who travel or who visit individually, since Environmental Education is a learning process and capable of promoting values and changes in the behavior of humans at large. This includes conservation and sustainable use of biodiversity and natural resources, according to SINAC 2020.



The night tour also takes place at Biophilia. It is a unique experience, where you will explore your most adventurous side in a safe way.

A great diversity of fauna can be observed such as: different species of frogs, snakes, basilisks, spiders, birds, and even mammals such as bats, the kinkallu, or raccoons. You will also be able to recognize a great variety of flora, especially the remarkable huge ceiba trees.

In this
experience you
are accompanied
by the best
certified guides,
people
qualified
with a criterion



established scientific and biological knowledge

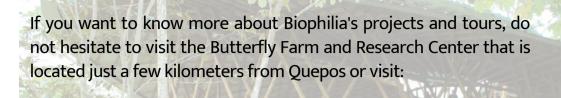


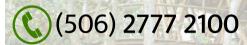
Educational Jungle / Night Walk

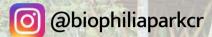


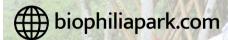


With the guide's criteria and equipment, you will be able to get even closer to nature to have a better view, description and analysis of each living being. At the same time, the guides will share top-quality photos taken through the telescopes for free.











Information on Manuel Antonio National Park

The park is open every day except TUESDAY, all year round, including holidays, from 7:00 a.m. to 4:00 p.m.

Entrance tickets can only be purchased online, and your passport or cedula number is required to register. When booking a guided tour, the visit includes the entrance fee and the guide will have your tickets. You can read more about the National Park, the guided tour and make your reservation here: www.manuelantoniopark.com Or you can buy your tickets online for self-guided tours here: serviciosenlinea.sinac.go.cr

It is not permitted to bring any type of food. Drinks are allowed. There is a small kiosk in the park where you can buy snacks.

Pets are not allowed and the use of drones is not allowed in the park.

There is no official parking area for the National Park, but private parking areas are available around the Park entrance for \$\psi\4000-\$\psi\5000\$ per day. Beware of scammers trying to sell you overpriced parking and tours as you approach the Park entrance. Finally, please request a claim form if you see any possible improvement in the Manuel Antonio National Park.

EDICIÓN ESPECIAL

This magazine has been prepared with great care, dedicating time and attention to to the matters we deem most valuable for our region. We have taken many details into account so that the information we provide is valuable and current. Our aim is to live in harmony with the environment, knowing how to act with nature in balance.

We hope by sharing our knowlege, that we have enabled this content to be shared and distributed. And we hope to encourage people to investigate more about the topics presented.

We also want to thank the sponsors and the people who have made the art for our ads, for making this project possible. We appreciate your contribution and teamwork.

"When spiders weave together they can bind a lion"

Thank you very much: Ana Álvarez Trujillo; Richard Lemire; Jose Montero; Dorit Wendrock; Luciana Varrone; Heiner Montiel; Michael Ramirez; Santiago Solis; Milenlli Araya; Yehudi Mora; Andres Bolanos...





Luxury Vacation Rentals & Property Management



alex@villascr.com +506 88760136

mau@villascr.com +506 88289166





paul@latitude9.com www.latitude9.com +506 8843-3636

Scan to chat with an agent



