

# The Mango Creek Lodge Flora and Fauna Guide



Welcome to the Mango Creek Lodge Flora and Fauna Guide. This guide provides an overview of the variety of ecosystems you will encounter in and around our grounds. It is not meant as a complete guide, but it does describe some of the interesting and beautiful things you may see here on Roatan.

## Roatan's Natural History

Lying 30 miles off the north coast of Honduras, the Bay Islands are the peaks of the Bonacca Mountain range, which extends underwater from mainland Honduras in San Pedro Sula. In all, there are eight islands and 65 small cays, for a total of 58 square miles. Most of this is contained within the three principal islands of Roatan, Guanaja, and Utila.

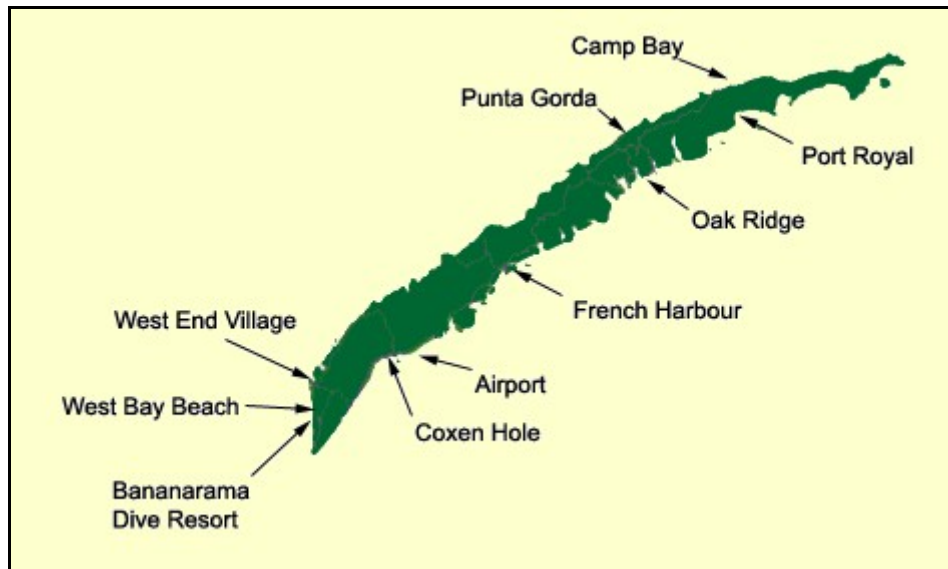


**A map of Honduras, including the Bay Islands**

The Bay Islands are a platform from which you can explore and enjoy the area's extensive coral reef system. This reef is an extension of the Great Maya Reef system, which runs down the Yucatan through Belize and Honduras and is the second-largest reef system in the world.

Aside from the obvious beauty and diversity of the marine life, the Bay Islands have much to offer by land—from beaches and mangroves to freshwater streams, savannahs, and jungle. Throughout the year, temperatures on the islands are relatively stable—between 77° and 84° Fahrenheit. Trade winds usually keep things cool even when it's hot. Rainfall exceeds 6 feet per year, with 50% of this falling during the rainy season months of October and November. The lightest rain months are March, April, and May. The Bay Islands are in the hurricane belt and are statistically struck every 10 years. The season officially runs July through November, with the riskiest months being October and November. January through September is considered a good time to visit the Bay Islands.

Roatan, originally named Rattan Island, is the largest and most developed of the Bay Islands—and the only one with a real road. This Cuba-shaped island is 32 miles long and only 1.8 miles wide. A mountainous ridge forms its central spine 770 feet above sea level. Roatan's hills are covered with pine, cedar, and oak trees and thick tropical undergrowth. Despite the recent population increase, Roatan's north and east ends maintain their wilderness state because, historically, people have lived off the sea and not by agriculture. Roatan has numerous well-defined runoff routes, known as gullies, but most contain water only for a short time after rainfalls. These slopes are so steep that water runs off quickly, except for areas near the sea where the land flattens. Roatan lies close to the three smaller islands of Helene, Morat, and Barbareta as well as 52 tiny cays.



**A map of the island of Roatan**

## **The Sea**

Coral reefs are the marine equivalent of tropical rain forests. Composed of millions of tiny animals called polyps, coral contains algae cells that provide nutrients to animal hosts by photosynthesis. This explains why coral is found only in clear, shallow water. The coral polyps also feed on plankton by using tentacles to capture the tiny drifting animals.

There are two types of coral. The reef-building hard corals extract limestone from seawater to secrete protective exoskeletons. The soft corals excrete a soft exoskeleton and include sea fans and sea whips. The reef itself consists of a living layer growing atop the skeleton of its ancestors. Within a tiny area, you can find several species of coral, dozens of species of fish, and thousands of other forms of tiny and microscopic life. Also found in an amazing variety are sponges, filter feeders that range in size from tiny to huge barrel sponges.

Coral reef systems have fed and sustained aquatic life and humans for centuries. They are key spawning grounds for fish and habitat for lobster and crabs. Most recently, they have provided much-needed income in the form of tourism for the Bay Islands. However, the reef ecosystems are as beautiful as they are impossibly fragile, and in many cases, they have been mismanaged by both native islanders and tour operators. Simply touching the reef or bumping into it can remove the protective slime layer or break off pieces and render the entire colony susceptible to disease or predation. Dropping anchor over a pretty spot can create incredible damage.



When you are diving or snorkeling the reefs, remember that you are a guest in a very fragile environment. Never touch coral with any part of your body or equipment unless a responsible guide shows you how and which types of coral, shells, or other organisms can be handled. If you're tired, float. Don't stand up on coral. Try to move slowly and carefully so fish are not frightened away and you can drift and enjoy them in their natural state. Enjoy the reef. Don't become part of the problem.

On Roatan's reef, you can expect to spot:

- **Coral**

Almost all of the coral types specific to the Caribbean can be found off Roatan. You may see pillar, elkhorn, star, lettuce, and brain corals. In addition, you may spot rope, vase, finger, and barrel sponges as well as sea fans.

- **Creatures**

While snorkeling or diving, you may also see tiny shrimp, crabs, and lobsters; anemones; coral crabs; spiny lobsters; echinoderms such as starfish; and sea urchins grazing on marine plants. Other creatures include sea cucumbers, which live in sandy areas and extract small amounts of food hidden in the sand grains. There are also snails such as the flamingo tongue, which preys on sea fan polyps, scallops, conch, and shellfish. You might even be lucky enough to spot the tiny sea horse or the elusive and mainly nocturnal

octopus. Feather duster and Christmas tree worms are also present and live in tubes drilled into the coral.

- **Fish**

Among others, you will likely spot moray eels, barracuda, trumpet fish, grouper, snapper, butterfly fish, angelfish, damselfish, parrotfish, surgeonfish, chub, wrasse, triggerfish, needlefish, blue tang, indigo hamlets, rock hinds, chromis, nurse sharks, and eagle rays.

## The Mangroves

Being neither a land ecosystem nor a marine ecosystem but a unique blend of both, mangroves deserve a section of their own. The complex system of mangrove roots, mud, salt, and freshwater forms a perfect nursery for a variety of sea creatures such as lobster, conch, shrimp, bonefish, and snappers. Mangroves provide vital protection from erosion during hurricanes and storms, and their roots stabilize shorelines and prevent silt from washing down and covering reefs. As such, mangroves interact with and depend on the entire coastal ecosystem of reefs, open channels and lagoons, and mud flats and white sand beaches. If any of these habitats is disturbed, another suffers. The coral reef breaks the force of waves, so mangroves can develop in quiet water behind the surf. Sea grass slows the currents and calms the sea even further. In return, the mangrove leaves, nectar, and fruit provide nourishment for a variety of animals. Their cast-off leaves decompose in the water and support a marine nursery and ecosystem. Baby shrimp, conchs, crabs, worms, and clams all thrive under the tangle of muddy mangrove roots. Birds also fly in to roost and nest in the mangroves. You can find belted kingfishers, egrets, herons, and pelicans settling here after a busy day of fishing. The mangrove leaves ultimately decompose into soil and merge with sand provided by the reef to form new land where there previously was only water.

Mangrove swamps used to be viewed as “wasted” land, and many were “reclaimed” by cutting, filling, and developing real estate. Mangroves typically do not belong to the fishery, forest, or agriculture departments of governments, so they are often difficult to administer and protect. Thankfully, more and more countries are protecting mangrove areas and preventing the loss of this vital habitat.



Mangroves are the only plant that can survive in saltwater, but they depend on fresh water to live. Mangroves have the ability to concentrate salt in their sap or store salt in old leaves that are ready to drop. Other types secrete salt through their leaves or roots.

While exploring Roatan's mangrove environments, you may see:

- **Red Mangroves**

Red mangroves line many of the bays and bights, especially in the East End. These mangroves sit atop aerial roots and divide into a complex network that can extend up to 35 feet into the mud to provide support. Their thick leaves are adapted to prevent water loss and turn yellow and drop off. They are then washed into the surrounding roots to form new soil. Red mangrove roots are adapted to limit the amount of salt that enters the plant.

The propagation of red mangroves is a fantastic adaptation: The seeds sprout directly on the parent tree. Once the seeds fall, they will send down roots if they land in mud. Otherwise, they float away on the tide and can survive many months on the open ocean. Red mangroves can grow as much as 3 feet in the first year. However, aerial roots do not form until the third year.

Much more of Roatan was once lined with red mangroves, but many were cut down for the red dye from the bark, which was used for tanning leather and preserving canvas for sails. The mangrove swamps on the East End of Roatan are now protected by law.

- **Black Mangroves**

Black mangroves grow farther back from the sea, in the oxygen-poor muddy zone. Their roots have vertical, pencil-like extensions called pneumatophores that and pop out at the surface to collect oxygen. These mangroves get rid of excess salt by secreting it through shallow pits on the upper surfaces of their leaves or through their roots. Because of their battle against salt, they are under constant metabolic stress. Therefore, black mangroves are very sensitive to pollution, particularly pesticides.



- **White Mangroves**

White mangroves grow on more solid ground and are less tolerant to salt. Their leaves excrete excess salt, and they produce seeds that sometimes sprout on the tree but most often fall to the ground. These seeds can float for up to 4 weeks. Thereafter, they sink and, if they are lucky, begin growing. These mangroves have scaly, reddish-brown bark and greenish-white flowers.



- **Buttonwoods**

The Buttonwood, or “walking tree” will, over a long time, extend its roots and actually move position. The lumber of this tree was used in the past to build stilt houses because the wood is so solid that it sinks in the water and does not rot. Buttonwoods are similar to mangroves in that they have a tolerance for salt water, but Buttonwoods grow well away from areas that experience frequent saltwater flooding. These trees look much like other mangroves, but they have alternate leaves instead of opposing leaves.



- **Giant Mangrove Ferns**

The giant mangrove fern is quite un-fern-like. Its dark green leaves are thick, not lacy, to limit water loss. They do, however, have typical brown spores along the underside of their leaves. Giant mangrove ferns have along their stems a pneumatophore to send oxygen to the plant. They are unable to excrete salt and are heavily laden with this mineral—so much so that they are quite fire-resistant. Indians figured this out and used them to thatch the fire-prone areas of their homes such as the cooking hearth.

- **Mangrove Fauna**

In and around the mangroves, you will see numerous crabs of two varieties. The mangrove crab is small (less than an inch across) and usually lives up in the mangrove trees, returning to water only to mate and shed eggs. The land crab (which grows up to 4” inches across) lives in long, curved burrows that go down to the water table. These crabs, despite of their name, require an almost-constant presence of water. Land crabs come out at night and when it is raining. Primarily, they are herbivores, although they will eat pretty much anything they can scavenge. Land crabs mate during the rainy season 1 or 2 days before a full moon. About a month later, there is a mass migration to the sea, where the eggs hatch and are released into the sea.

Also living among the roots of the mangroves are the long purple-shelled mangrove oyster and the grey-shelled flat tree oyster. Both are small, full of mud, and food to starfish, some birds, and—when cleaned and prepared—people.

Finally, upside-down jellyfish are often spotted as whitish blobs in the mangrove waters. They live upside down, with their tentacles facing up so that the sunlight can get to the yellow-brown algae that live among them and supply them with food. This is an example of symbiosis.

- **Grass Flats**

Near to the mangrove swamps grow extensive turtle grass flats. They are a true grass, evolved from land grasses, and they reproduce with tiny flowers. Pollen and seeds flow in the currents like terrestrial grasses’ do in the wind. They are the only flowering plant that spends its entire life underwater. The grass flats are home to the spiny black sea urchin, which feeds by night on the algae covering the grass; the queen conch; and white mullet.

Parrotfish and surgeonfish feed directly on the grass. In addition to providing food and shelter, the grass flats perform a valuable service in baffling the currents and allowing sedimentation of organic and inorganic matter.

## The Land's Flora

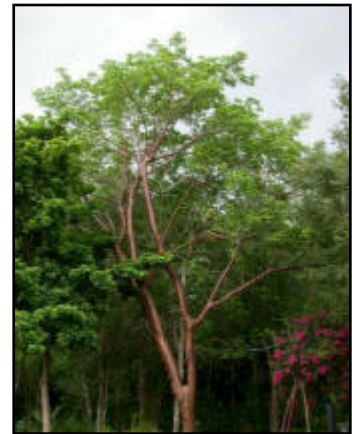
Roatan's warm temperatures and abundant rainfall once supported a rich forest. It was first exploited by the Paya Indians, who cleared trees for the cultivation of crops and probably introduced fruit trees.

Caribbean pine and oaks are still found in the 2,000-acre Port Royal Park and Wildlife Reserve, which is adjacent to Mango Creek Lodge. This area was decreed protected in 1978 by the municipality of Santos Guardiola. It protects the watershed of Port Royal and provides the last breeding area for white tail deer, parrots, agoutis, and other wildlife on the island.

On hikes through our grounds and the park, you may see:

- **Gumbo Limbo Trees**

Identified by its red peeling bark, the gumbo limbo is also known as the “gringo tree” or “tourist tree.” It is most common on dry, rocky ground but can grow just about anywhere. These trees have many adaptations to drought. For example, they lose their leaves in the dry season and photosynthesize using the green bark layer underneath their red bark. Their trunks can store large amounts of water. Islanders find them useful for lumber and fuel, mainly because of their abundance rather than their quality. The leaves can be fed to cows and goats, and the sap can be used for glue, varnish, and coating boats.



- **Gilircidia or Cow Trees**

This tree is native to South America and has been planted all over for “living fences” because a branch simply stuck into the ground takes root. It thrives on depleted soil, produces beautiful pink flowers in the dry season, and grows leaves that are used to feed cattle and goats. The seeds, bark, leaves, and roots are poisonous to mice and rats. The wood is good-looking and can be used for furniture. It resists termites and is hard, so it is also used for house supports. Its leaves can be made into a tea with sugar to cure a cough or put into a bath to treat skin infections.



- **Yellow-Stemmed Bamboo**

This bamboo grows in clumps up to 40 feet high. Their hollow, light stems are commonly used in construction, and they have been widely propagated.

- **Honduran Pines**

Honduran pine, or *Pinus Caribaea* var *Hondurensis*, is found in the Port Royal Park and Wildlife Reserve, adjacent to the grounds of Mango Creek Loge. It is the largest contiguous section of this pine forest in Honduras.

- **Traveller's Trees**

A relative of the banana, the traveller's palm is as tall as a tree, and its leaves form a giant flat fan, flaring from the top of a palm-like trunk. It is native to Madagascar and gets its name because there is a reservoir of water at the base of each leaf that contains up to a quart of water.



Fruit trees serve a valuable purpose in the tropics. They feed a variety of species. One of the best ways to see both birds and mammals is to locate a tree laden with fruit and see what comes by to feed.

While at Mango Creek Lodge, you may see these varieties of fruit trees:

- **Cashew**

The cashew tree is native to the Caribbean and is very hardy and able to survive drought and sea spray. The cashew nut grows on the underside of an edible apple, which is very rich in Vitamin C. The nut, however, must be carefully stripped of its shell, which can cause severe burns. The oil from this shell contains cardol, which is used to treat eczema, ulcers, and psoriasis.



- **Mango**

Originally from Borneo, mangoes have been grown in Asia for 4,000 years. They were brought to Jamaica to feed slaves and thence on to Honduras. The many tiny flowers produce numerous fruits of varying quality. Some are stringy, watery, and taste awful; others are juicy and wonderful. Their deep tap roots of up to 25 feet get them through dry spells, while their abundant foliage provides cooling shade. In fact, a 2–3 month dry season is essential to trigger dormancy, which in turn triggers flowering. The ripe fruit is eaten raw or made into juices or jams. Unripe fruits are made into pickles and chutneys. If you crush the dark green, wavy leaves, they smell of turpentine. The trees also produce a good quality timber that has been used in boatbuilding.

- **Papaya**

The papaya is a small tree with soft wood and a short life cycle. It is thought to originate from southern Mexico or Costa Rica. It is fast-growing and can have fruit within a year of planting. After 2 or 3 years, the tree becomes so tall that it is hard to harvest the fruit. The trunk is soft and hollow, with the leaves all at the top, like an umbrella.



The fruits turn from green to yellow to orange when ripe.

Unripe fruit is used to make jam or eaten as a vegetable. The young leaves can be eaten like spinach. The leaves, fruit, and milky latex sap all contain the enzyme papain, which is used as a meat tenderizer. Meat can be wrapped in papaya leaves to tenderize it. Papain is obtained by making vertical cuts in the unripe fruits and collecting the milky latex. It is also used in chewing gum, cosmetics, tanning, washing detergent, and dry cleaning. Tea brewed from the boiled root is used to treat gonorrhea, the seeds rid the body of worms, and tea made from cubes of green papaya is said to be good for high blood pressure.

- **Hog Plum**

This tree is native to Central America. Its plentiful fruit is eaten raw and has a sharp but pleasant taste. It can also be made into jelly and jam, and the juice can be fermented and distilled to make moonshine. Resin from the tree is used as glue, its bark is used for tanning and dyeing (because of its tannin content), and young leaves are cooked as greens.

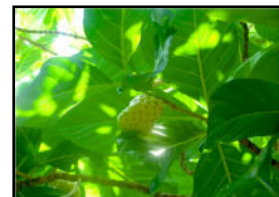


- **Mamee Apple**

The mamee apple is native to Cuba, Santo Domingo, and Jamaica. It can grow to a height of 75 feet and produces large fruit with a tough rind. This fruit tastes like an apricot and is most commonly used to make marmalade or jam. It can also be stewed or eaten raw. Its leaves are also used to make an aromatic, refreshing digestive drink.

- **Nonee Apple**

A warty fruit grows on this tree that is reported to cure a wide variety of ailments such as diabetes and cancer. The fruit is steeped in water for several days, and the liquid is drunk. It tastes awful but is good for you!



- **Banana**

Plantain, banana, and “apple” bananas are important food sources. “Eating” bananas grow with their fingers pointing up; plantain or “cooking” bananas grow with their fingers facing down. Bananas originated from the hybridization of two wild species in Burma, India, and the Philippines and were first introduced in the New World at Hispanola in 1516 by a Spanish priest.

Because they are hybrids, they must be propagated and are not capable of pollinating themselves. The mother plant produces suckers that spring up from the base, and these take about 9 months to grow fruit. A single stemmed flower shoot sprouts out of the center of the leaves and soon bends down toward the ground under its own weight. It produces abundant nectar and sticky pollen, and the flowers open at night to produce a fetid odor that appeals to bats. The flowers are big and strong enough to hold the weight of the bat. Once the bananas are ripe, the plant dies. The old plant is cut down, leaving one sucker at the base to produce the next crop.



- **Pineapple**

The pineapple is a member of the bromeliad family and, as such, is related to the “air plants” that grow on tree limbs. Pineapples have been cultivated since pre-Columbian times. Pineapples also must be artificially propagated by rooting the cuttings from the fruit tops. They are usually planted close together because their shallow roots allow them to topple over. If they are crowded together, they can prop one another up. Each of the “eyes” of the pineapple fruit corresponds to a separate flower. Pineapples are rich in bromelin, which aids digestion.



- **Passion Fruit**

Passion fruit grows on a woody vine that is up to 150 feet long. They live 3–10 years and produce round, yellow fruits. Passion fruit are delicious but full of seeds, so they are used for juices and pies.

- **Lime**

Lime trees were brought to the Caribbean by Columbus on his second voyage. Lime trees survive poor soil and drought better than other citrus trees. The leaves, when crushed, smell like the fruit.

- **Sea Almond**

The sea almond tree was introduced from India and has been widely planted for the dense shade it provides and its tolerance of salt spray and sandy conditions. The branches of this tree grow horizontally in layers, and the leaves turn bright red before they are shed. Tiny, white flowers are produced in clusters, resulting in many, many fruits about the size of a small apricot. The green flesh is edible, and under this is a thick, corky shell that contains a brown-skinned sweet kernel that tastes like a hazelnut. These nuts can float for a long time, and this is why they are so widespread. The tree produces a beautiful red, strong wood, and the bark is used to make a diuretic.



In addition to trees, you will see numerous decorative plants at Mango Creek Lodge. While strolling our grounds, you may encounter:

- **Bromeliads**

Bromeliads are a common plant that make their home in trees. Some produce beautiful flowers. With no roots in the soil, they have to find all their own nutrients. Bromeliad leaves are shaped to collect and hold rain water, and when insects fall in and drown, they provide the plant with nutrition.



- **Tree Ferns**

The tree fern is the most impressive of the native ferns. Growing up to 20 feet high, it has a straight, single stem that is topped by the large, airy fern fronds. It actually prefers temperatures below the low 80s, well drained soil, and light shade. A true fern, it propagates by spores.

- **Staghorn Fern**

We have but a single specimen of this beautiful fern at Mango Creek. These ferns grow on tree trunks and branches and reproduce by spores that form on the leaves. They attach to tree bark and grow fronds around the roots to trap moisture and other nutrients.



- **Lemon Grass**

Lemon grass originated in India, and it makes a tasty tea. It is also known as “fever grass.” This tropical grass grows in dense clumps that can grow to 6 feet in height and 4 feet in width. The bright bluish-green, straplike leaves are one-half inch wide, about 3 feet long, and release a citrus aroma when crushed. It is the leaves that are used as flavoring and in medicine. They are steam-distilled to extract lemongrass oil, an old standby in the perfumer’s palette of scents.

- **Elephant Ears**

Elephant ears like cool, damp areas. They are recognized by their distinctive, huge leaves on thick stalks.

- **Cat's Tails**

Cat's tails have plain leaves, but they compensate by producing long masses of bright-red, fuzzy tails. This shrub grows to 6 feet.



- **Heliconia**



Heliconia are identified by their conspicuous, long, paddle-shaped leaves and red, orange, or yellow bracts shaped like lobster claws. These bracts contain 20 or so yellow-green flowers. Heliconia grow in open areas, forest edges, and stream banks. They are pollinated by hermit hummingbirds, which have sickle-shaped beaks that are adapted to dipping down into the flowers. Heliconia produce green fruits that ripen to blue-black and are eaten by birds and dispersed. The seeds have a 6–7 month dormancy period, which assures that they will not germinate

until the rainy season.

- **Bougainvillea**

Bougainvillea, a native of Brazil, is probably the first flower you will notice at Mango Creek Lodge. It grows vast quantities of beautiful flowers and comes in many colors—some almost glowing! These plants flower almost continuously, but the flowers are most abundant during the dry season. These colorful parts are actually not flowers at all, but colored leaves. The actual flowers are small, petal-less bracts inside the colored leaves. It is a plant that tolerates drought, pruning, and poor soil, so it is a popular garden plant.



- **Hibiscus**

Hibiscus produces a large, flashy flower that ranges from white to lemon yellow to pink to scarlet. The flower has five petals and a protruding column that contains the pistil and stamen. Its leaves, when ground up with water, make a passable shampoo. The flowers last only 1 day, but most varieties bloom so profusely that there are nearly always several open at any time. Leaves and flowers are both edible and are sometimes used in traditional medicine.



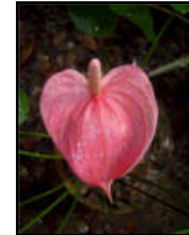
- **Red Ginger**

Red ginger is a native of the Pacific Islands. It is known for its red flower, which is not a flower at all. Its petals are really modified leaves. This is closely related to the true ginger, and its roots look and smell like ginger. The leaves have a distinctive, long, oval shape with almost no leaf stalk.



- **Anthurium**

Anthurium produces an eye-catching bract from which protrudes a tail-like appendage called a spadix. The spadix contains the tiny flowers, which produce sweet nectar to attract bees and hummingbirds.



- **Bride of Barbados**



Bride of Barbados is a bushy shrub that thrives in the wild or in the garden. It has bright orange flowers that are often edged in yellow. Its origins are uncertain. It may be a native of the Caribbean, Mexico, or Central America.

- **Golden Shrimp**

The golden shrimp plant is a decorative shrub from the American tropics that grows as a medium-size bush. It has narrow, shiny leaves and prominent erect floral spikes that are actually closely arranged bright-yellow bracts between which white flowers appear.



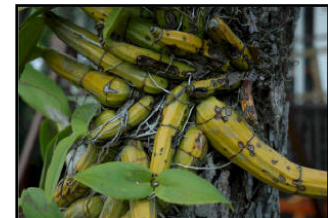
- **Turks Cap**



Attractive to butterflies and hummingbirds, this relative of the hibiscus is often attacked by leaf cutter ants. The flower is bright red and is rolled, so it always looks like it is about to open.

- **Orchids**

Growing on tree trunks, orchids' fattened leaves serve as water storage to prevent the plants from drying out. Mango Creek has a number of orchid varieties throughout its grounds.



Finally, Mango Creek Lodge's grounds contain a number of plant species that grow only on the shoreline. Beach environments are difficult for plant survival. Constantly shifting sand, which is poor in nutrients, means there are only a few plants that can live successfully here. At Mango Creek, you will see:

- **Corozo Palm:**

The beautiful, tall coconut palm of postcard fame is actually native to the Western Pacific and eastern Indian Ocean. It was brought to the Atlantic by way of the Cape of Good Hope in Africa by Portuguese explorers, so it is a relatively recent import. In the 1980s, a disease called Lethal Yellowing struck coconut palms. This devastating disease is caused by microbes that are carried from tree to tree by insects called plant hoppers (*M. crudus*). It is believed to have arrived in Cancun, Mexico, in the late 1970s on insect-infested grass imported from Florida for a hotel development. How it migrated to the Bay Islands is a mystery, but it probably



happened by the uncontrolled importation of non-native species for plantings around new resorts. It has now affected coconut palms from Florida, Mexico, Central America, Jamaica, and other Caribbean islands. Hotel and home owners have planted disease-resistant species of coconut palms, but this is a demonstration of the unintended side effects that often go with the introduction of new species. It is unknown whether there are any birds, insects, or animals that lived in and among the previous species that will not be able to adapt to the new species.

Coconut palms are an important source of food and materials. The nut provides refreshing milk that ages to a tasty white meat. In the past, coconuts were exported for their palm oil; today, most are eaten locally. The leaves are used as thatch for roofs or woven into mats and baskets. The trunk is used for lumber. Palm trees have no branches, the trunk has no bark, and there are no growth rings. As the tree grows higher, the bottom leaves die and drop off, leaving characteristic rings around the trunk. The leaves are divided into long, narrow sections that are not blown apart by strong winds like solid leaves would be. Even though they live near salt water, they require fresh water to survive. Their extensive roots sometimes extend 30 feet from the trunk and are shallow to tap into the layer of fresh water that floats on top of saltwater that seeps into the sand from the sea. Its natural habitat is a narrow band at the top of beaches. Although it can grow in good soil as well as sand, in good soil, many other plant and tree species compete for space and crowd it out.

- **Sea Grape**

Seagrapes are in the same family as buckwheat. Recognized by their thick, round leaves and red-veined leaves and reddish stems, the plants produce male and female flowers on separate plants. The female plant produces edible, grape-like fruits that are purple when ripe. Using a sharp stick, the early colonists were able to use the leaves to write messages on. The sea grape berry can be used to make a full-bodied wine, or you can drink the juice to bring down fevers. It is also used to make jams and jellies.



- **Sea Lettuce**

A native to the Pacific and Indian oceans, this large shrub tolerates very dry conditions and salty winds. The small, white flowers repel sand flies and mosquitoes and produce oval berries that float for a long time, allowing its widespread distribution.



- **Madagascar Periwinkle**

This sand-tolerant ground cover has been widely planted for its bright pink or white flowers. This plant has been found to contain two alkaloids that kill actively dividing cells and has been used in chemotherapy for human leukemias.



## The Land's Fauna

### ***Mammals***

There are only about a dozen mammal species in the Bay Islands. Almost one-third of them are bats. Some of these are insect-eaters, and some are fruit-eaters. Both types serve an important niche in the ecosystem by controlling insects and pollinating flowers and dispersing seeds.

Of the several mammal species that have been introduced to the area, few remain. Wild pigs and white-tailed deer have been released in the past as a source for food. However, they have been so over-hunted that they are seldom seen.

The two mammals you may see at Mango Creek Lodge are:

- **Agouti**

Locally known as rabbit, the agouti is a brown rodent that looks like a large guinea pig. It is nocturnal and shy and feeds on grasses, shrubs, fruits, roots, and seeds in the forest. The female gives birth to one or two well-developed babies, who within an hour of birth can eat grasses. Their natural enemies are birds of prey, boa constrictors, and man, who hunt them for food.



- **Opossum**

Although rare, opossum can sometimes also be seen in forested areas.

### ***Birds***

About 40 species of birds live and nest in the Bay Islands. Emerald hummingbirds, parrots (red-lored and yellow-naped), brown pelicans, frigate birds, roseate terns, ospreys, turkey vultures, little blue and great blue herons, belted kingfishers, snowy egrets, doves, and golden-fronted woodpeckers are common. The great-tailed grackle can be commonly seen and heard singing and flapping through the trees. The Bay Islands are in the flyway of migrating birds from North America, and seasonally, birds such as warblers, vireos, indigo buntings, tanagers, and ducks can also be seen.



### ***Reptiles and Amphibians***

There are several endangered reptiles in Roatan, including the crocodile and several species of sea turtles. About 12% of the species of reptiles and amphibians found on mainland Honduras have become established on Roatan. They may have been transported on ships or by birds or even floated over on pieces of wood or vegetation.

At Mango Creek Lodge, you can see:

- **Lizards**

Commonly seen by day are bright green anoles, which can change color quickly to brown. They forage for small insects and their larvae as well as worms and land snails. They will also eat bread, spaghetti, ripe bananas, mangos, and sugar. The males are territorial, and you can often see them make threatening displays by extending their throat pouch and doing “pushups.”



By night, geckos stalk insects and perform a useful service in our kitchens and homes. Their feet are adapted to climbing on vertical or upside-down surfaces and have flat scales that are edged with tiny hooks, like Velcro, to allow them to grasp the smallest irregularities in surfaces. You can sometimes hear them making clicking noises.

On beaches, you can find the shake-a-paw lizard, named for its leg-shaking habit, which is thought to warn away other lizards.



The blackish wishiwilly, which looks similar to the iguana, is braver than most lizards and has been known to attack if provoked. They prefer drier open areas and are both good climbers and burrowers. Like iguanas, they eat mostly vegetation, although they will eat bats, baby birds, and each other's eggs. Like the iguana, they have been hunted for food.



Green iguanas, once very numerous here, have been over-hunted for food. But they can still be seen hanging out in the trees and feeding on leaves and fruit. They are quite greenish when small but turn browner as they age. A large iguana can exceed 6 feet in length—most of this is tail. They do not often hurry and spend days sprawled along a tree branch along a stream or river. They are excellent swimmers and can stay underwater for a long time. They are not usually aggressive and can take a lot of provocation before they react.



The monkeylala, or basilisk, resembles a miniature dinosaur with its long fin on back and tail. When frightened, it runs on its hind legs into the forest or even across pools of water, earning its nickname of the Jesus lizard. You will see several hanging out near the passion fruit vine near the boardwalk of the freshwater Mango Creek.

- **Snakes**

The coral snake is the only species of poisonous snake to have been found in the Bay Islands, but they are rarely seen and are considered harmless by Islanders.

The largest snake here is the boa constrictor, which grows up to 9 feet. These snakes are valuable because of their habit of hunting down and controlling the rat population.

Brown water snakes are found in freshwater streams and feed on small fish.

Vine snakes are long and thin, colored yellow or green, and feed on small lizards.

The night walker, or rat snake, is nocturnal, a beautiful reddish-orange, and grows more than 5 feet long.



- **Frogs**

Six species of frogs are found in the Bay Islands. All are dependant on fresh water. These include the leopard and rana frogs, which spend their time near the water. Tree frogs such as the ologyon, small-headed, and rana hunt for insects in the trees, climbing using their enlarged toe discs. The most common one you may see is the gaudy leaf frog. It has bulging red eyes, is bright green, and has a white belly.

- **Turtles**

Hawksbill and green sea turtles are occasionally seen in the waters surrounding Roatan. They are endangered here, as they are in most places of the world.

- **Crocodiles**

Crocodiles are very rare and shy. They inhabit the eastern mangrove areas in small numbers. Now protected in Roatan by law, the largest population of these elusive reptiles is believed to inhabit Morat. Crocodiles eat fish and other water-dwelling animals. The females build nests and lay up to 60 eggs, which they protect. They then assist the babies into the water, where they protect them for some weeks. The babies are vulnerable to predators such as osprey, egrets and snakes.



## ***Invertebrates***

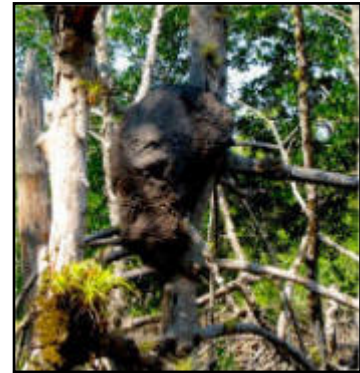
This is by far the most abundant and varied form of life on Roatan. All have their place in the ecology of the island. You will find butterflies that feed on nectar and help pollinate flowers, spiders (including the fearsome tarantula) that hunt insects, beetles (including the huge and rare rhinoceros beetle, a slow-moving giant some 4 inches long) that feed on rotting fruit, termites that recycle rotting (and sometimes not-so-rotten) wood, and ants, flies, and mosquitoes that are dinner to birds, bats, and lizards.



Most fascinating are the **leafcutter**, or “wee-wee,” **ants**. These ants cut leaves to grow a fungus garden, which they eat. They can sometimes be seen in long lines carrying a piece of leaf and can defoliate a bush quickly. Living in colonies of up to 5 million individuals, the ants are constantly bringing pieces of leaf to their underground fungus gardens. They chew up the leaf into pulp, hold the pulp to their abdomen, and defecate a fecal droplet of liquid on it. Then it is added to the fungus growing bed, and a small fungal tuft is placed atop it. This fungus is their only food, and it does not exist outside the ant colony. The fungus is totally dependant on the ant, and the ant is totally dependant on the fungus.

One of the first insects you will undoubtedly notice is the notorious **sand fly**. Called “flying teeth,” these tiny, mosquito-like insects live and breed on sandy beaches. There are actually three species of sand fly: one feeds only at night, one feeds from dusk to dawn, and one feeds only during the day. So the unlucky tourist provides food for these ferocious nuisances 24 hours a day! Only the female sand fly drinks blood; the male feeds on plant juices. The female needs the protein in blood to lay her eggs and must have a blood meal before each clutch is laid. Although they are a nuisance, there are simple, environmentally friendly ways to combat sand flies. Because sand flies hate wind, a ceiling fan or breeze drives them away. Raking the beach nearby the accommodations upsets the breeding cycle, and planting natural insect repellants such as sea lettuce keeps them at bay.

**Termites**, like ants and bees, are social insects that live either in a termitarium (a large, misshapen brown lump in a tree) or in burrows excavated in wood. The workers, unlike ants and bees, are male and female, and there is a king and a queen. In June, winged termites are produced. They swarm and move off to begin new colonies.



**Army ants** are not the fearsome enemy portrayed in books and movies. They won't eat you, but they will bite (and their bite hurts)! They eat no plants whatsoever and no animals larger than baby birds or small lizards. We like them because they come around periodically, march around the house, and devour insect pests! If you see a column of largish black ants, just step over them. If they are going in a direction you don't like, pour a stream of water across their path, and they will go around it.

Fourteen species of land snails live in the Bay Islands. They provide homes for **hermit crabs**, a terrestrial relative to the spiny lobster. Hermit crabs have adapted to life on land by collecting shells and moving into them. Their bodies are long and soft and end with two hooks that they use to hold on to the borrowed shell. They have one claw that is much larger than the other that they use as a protective front door to their shell. When they outgrow their shell home, they must look for a new



and larger one. Even though they sometimes live far from the water, they always return the sea at low tide to fling their hatching eggs into the water. They forage for a variety of plants, each other, carrion, and feces. The soft body of the crab is used as fish bait.

**Blue land crabs** of all sizes can also be seen in large numbers all over Mango Creek Loge's grounds. They usually scurry quickly into holes upon your approach.