

Hispaniola History

Hispaniola's earliest inhabitants called their island Quisqueya – 'cradle of life.' From its role in the earliest settlement in the Americas, to becoming the richest colony in the world and home of the world's first black republic, the island has often played a key part in world history.

THE TAÍNOS

Hispaniola had been inhabited for three millennia before Christopher Columbus sailed into view. Hunter-gatherers from the Yucatan were the first to arrive, but their impact was marginal compared with that of the Arawak peoples who had island-hopped from South America. Of these, the last to arrive were the Taínos ('the friendly people'), who prospered on the island for around 700 years until the clash of civilizations with Europe brought their ultimate downfall.

The Taínos were both farmers and seafarers. The island was divided into half a dozen independent chiefdoms called *caciques*, with a total population of around 500,000 at the time of Columbus' arrival. Each chiefdom comprised several districts with villages of 1000 to 2000 people. These were often twinned, with a small coastal village linked to a larger settlement further inland. The Taínos were skilled fishermen and caught fish and turtles with nets, spears, traps, and hooks attached to lines – they even used a mild poison that slowed the reflexes of river fish, making them easy to grab. As farmers, the Taínos cultivated root crops such as yam, cassava and sweet potato, clearing land by fire and then using heaped mounds of earth called *conucos* to slow erosion and facilitate weeding and harvesting. Dogs were the only domesticated animals, and were used for hunting.

The Taínos believed in two supreme deities: Yúcahu, the lord of the cassava and the sea, and his mother, Atabey, goddess of fresh water and human fertility. They also believed in a plethora of lesser spirits, such as those of their ancestors as well as spirits who lived in trees and other features of the landscape.

Comparatively little of Taíno culture has survived to the modern age. Pottery and stone tools form the most common artifacts, along with jewelry of bone, shell, and gold that was panned from rivers. Clothing was made of cotton or pounded bark fibers, although early Spanish arrivals noted that the Taínos frequently went unclothed. A more widespread legacy is the crops that the Taínos bequeathed to the world. Tobacco quickly spread to be grown across the world, guavas and pineapples enliven fruit bowls everywhere, and when taken to Africa, yams and cassava cultivation revolutionized agriculture

A Brief History of the Caribbean: From the Arawak and Carib to the Present by Jan Rogozinski does an excellent job of placing Hispaniola into the larger currents of Caribbean history.

You can see hundreds of Taíno cave paintings preserved at the Reserva Antropológica El Pomier (p114) in the DR.

TIMELINE

4000 BC

Earliest evidence of human colonization of Hispaniola. Stone-flaked implements found at archaeological digs are thought to have been brought by hunter-gatherers migrating from the Yucatan peninsula in Mexico.

1200 BC

Ancestral Arawaks arrive in Hispaniola, having originated in South America and migrated through the Lesser Antilles. Dubbed 'the Saladoid culture,' they live in settled agricultural communities, and are best known for their sophisticated pottery.

AD 500–1000

A third wave of migrations arrives in Hispaniola with the Taínos, an Arawak-speaking group with a rich seafaring culture. The Taíno population expands rapidly, and is divided into a series of interdependent but competing chiefdoms.

on that continent. Hispaniola's inhabitants, however, were barely to survive their first encounter with Europe.

COLUMBUS' NEW WORLD

In 1492, Christopher Columbus sailed from Spain with 90 men in the *Pinta*, the *Niña* and the *Santa María*, bound for Asia. He sailed west rather than east, expecting to circumnavigate the globe. In one of the greatest miscalculations in history, he instead discovered the New World for the Old. After stops at the small Bahamian island of Guanahani and present-day Cuba (which Columbus initially mistook for Japan), a mountainous landscape appeared before the explorers. Columbus named it 'La Isla Española,' 'the Spanish Island,' later corrupted to 'Hispaniola'. He made landfall at Môle St-Nicholas in modern Haiti on December 7, and days later ran the *Santa María* onto a reef. Here on Christmas Day he established Villa La Navidad, the first settlement of any kind made by Europeans in the New World.

Columbus was greeted with great warmth by the Taínos, who impressed him further with their gifts of gold jewelry. Capturing a handful to impress his royal patrons, he sailed back to Spain to be showered with glory. He returned within a year, leading 17 ships of soldiers and colonists.

La Navidad had been razed by the Taínos in reprisal for kidnappings by the settlers, so Columbus sailed east and established La Isabela, named for Spain's queen. The first church in the Americas was erected here, and a replica of the church now stands in its place (Templo de las Américas, p198). However, La Isabela was plagued with disease, and within five years the capital of the new colony was moved to Santo Domingo, where it has remained.

Columbus' early administration was a disaster, and appointing his brother Bartholomé proved no better. Their haphazard rule soon had the colonists up in arms, and a replacement sent from Spain returned the brothers home in chains. The colony would now be run with military harshness.

The Taínos were the ones to bear the brunt of this. They were already stricken by European illnesses that sent their numbers crashing, but on top of this Spain introduced *encomienda*, forced labor requiring the natives to dig up quotas of gold. The Spanish broke up Taíno villages, killed their chiefs and put the entire population to work. Within three decades of their first meeting with Europeans, the Taínos were reduced to a shadow of their previous numbers.

EUROPEAN COMPETITION & COLONIZATION

As Taíno civilization collapsed, so did the gold mines, and no amount of imported African slaves could make up the shortfall. Spain dropped Hispaniola as quickly as it had found it, turning its attention instead to the immense riches coming from its new possessions in Mexico and Peru. Santo Domingo

LOOKING FOR COLUMBUS

Although La Isabela and Santo Domingo in the DR are celebrated for their connections to Columbus, the site of La Navidad, the first attempted Spanish settlement in the Americas, remains unknown and a holy grail for archaeologists. It's believed to be close to Cap-Haïtien in Haiti, probably built on the site of a Taíno village around Bord de Mer de Limonade. If you don't want to dedicate yourself to archaeology, the easiest way to get close to La Navidad is at Musée du Panthéon National in Port-au-Prince (p295), where you can see the anchor of the *Santa María*, whose wood was salvaged to build the settlement in 1492.

was reduced to a trading post for gold and silver convoys, but couldn't even hold onto that position with the opening of new trade routes via Cuba. After the English admiral Sir Francis Drake sacked Santo Domingo in 1586, it was effectively abandoned for the next 50 years, further signaling the decline of Spanish Hispaniola.

For the next three centuries, Europe was riven by war. Imperial Spain slipped into a slow decline, and the English and French took advantage, competing not just in the Old World but in North America and the Caribbean. Hispaniola was considered a great prize. The colony was stagnating under Spanish rule. Both the English and French encouraged piracy against the Spanish, even licensing the pirates as 'privateers.' For security, the Spanish convoys sailed en masse once a year, a system that effectively cut Hispaniola off from trade with the mother country – not only were visiting ships far and few between, but the colonists were banned from trading with non-Spaniards. The colony shrank to the area around Santo Domingo, leaving the rest of the island open for the taking.

The 17th century was the golden age for Caribbean piracy, and the rugged coast and mountainous interior of Hispaniola made it an ideal base for operations. Although a few captains became notorious raiders, most divided their time between hunting the wild cattle and pigs that thrived on the island and plundering for booty. The lack of any governmental control also made the island a haven for runaway slaves.

Isolated pockets of settlers were followed by soldiers. The English attempted to come in through the front door in 1655, but their army of 13,000 soldiers was somehow repelled at the gates of Santo Domingo. The French were more successful, and won territory by demographics, with tobacco farmers grabbing more and more territory until France had formed a de facto colony. The Spanish could do nothing, especially as France was beating it on the battlefields of Europe. At the close of the 17th century, Paris had managed to grab the western two-thirds of Hispaniola, christening them the colony of St-Domingue.

'I cannot believe that any man has ever met a people so good-hearted and generous, so gentle that they did their utmost to give us everything they had.'

CHRISTOPHER COLUMBUS MEETS THE TAÍNOS

When a slave ship docked at Santo Domingo in 1669, the colonists had become so impoverished they could hardly afford to buy one-third of the human cargo.

First published in 1724 (and still in print!), *A General History of the Robberies and Murders of the Most Notorious Pirates*, by Charles Johnson, is full of gripping period details on this swash-buckling era.

1492

Christopher Columbus makes landfall on Hispaniola on Christmas Day and founds the settlement of La Navidad (Nativity) near modern-day Cap-Haïtien in Haiti, before returning to Spain with Taíno captives.

1496

Nueva Isabela is founded by the Spanish. Rebuilt as Santo Domingo after a hurricane in 1502, it quickly receives a royal charter, making it the oldest European city in the New World.

1503

Queen Anacaona of the Taíno kingdom of Xaragua in central Hispaniola is arrested by the Spanish governor and publicly executed, effectively marking the end of Taíno independence on the island.

1510

King Ferdinand of Spain issues the first royal charter to import slaves to Hispaniola. Demand booms, to supplement the Taíno workforce, which is rapidly crashing due to hunger, overwork and introduced European diseases.

1586

Following the outbreak of war between England and Spain, Sir Francis Drake leads a devastating naval raid against Santo Domingo, leaving the city virtually razed.

1605

Spain sends its army to relocate most of its colonists to Santo Domingo city by force of arms, to prevent their contraband trade with foreign merchants, effectively abandoning its claim to the west of Hispaniola.

ÎLE DE LA TORTUE – A REAL PIRATE’S ISLAND

When Captain Jack Sparrow (Johnny Depp) needs safe harbor in the film *Pirates of the Caribbean* he sets sail for the port of Tortuga. In the mid-17th century, so did a lot of other freebooters. Tortuga is the Spanish name for Île de la Tortue, named for its resemblance to a sea turtle. French settlers, who found it rich in timber and wild cattle, first made the island their home, and sold meat and hides to passing traders. From the 1620s, the settlers began supplementing their income by piracy and were christened ‘buccaneers,’ from the *boucan* grills they used to smoke the meat that they sold.

The French, then at war with Spain, welcomed the redistribution of wealth from Spanish galleons, and appointed a governor who strengthened the island’s defenses against Spanish reprisals. He oversaw a peculiarly democratic attempt at creating a society, with loot shared out equitably, compensation paid to injured buccaneers and, due to a shortage of women, same-sex marriages with rights of inheritance.

The buccaneer experiment was relatively short-lived. It reached its peak in the 1660s, but as the French increased their stake on Hispaniola, raids began to be suppressed. A later governor imported prostitutes for the buccaneers, who eventually married and settled down, turning to growing sugar and tobacco. Those that couldn’t give up the Jolly Roger moved to Petit-Goâve in southern St-Domingue, and Port Royal in Jamaica. Ironically, present-day Île de la Tortue is an important smuggling station for drugs heading from Colombia to the USA, showing that the lure of contraband is yet to fully disappear from the island.

BLOOD, SUGAR & SLAVES

Where the Spanish had allowed Hispaniola to turn into a backwater, within a hundred years the French had made St-Domingue the richest colony in the world. The key to their success was sugar. Even before the Industrial Revolution, St-Domingue was a model of industrial factory production, but rather than rely on technology, the boom was powered by a bloodier motor altogether: slavery.

The European taste for sugar had been growing steadily for years, and at the start of the 18th century the colonial powers turned much of the Caribbean over to its production. St-Domingue and British Jamaica were the lead producers, although the French colony managed to diversify its economy to include other important cash crops such as coffee and indigo. Molasses, a by-product of sugar production, was turned into cheap rum for export.

The fertile lowlands of northern St-Domingue were soon turned over to sugar plantations, centred on the port of Cap Français (modern Cap-Haïtien). Plantations were both farm and factory, huge fields of sugarcane with a mill and refining house at their heart. Surrounding quarters consisted of the planter’s house, workshops, food crops and slave quarters.

Life was harsh for the slaves. From clearing the land to planting, weeding and harvesting, sugar cultivation was hard, labor-intensive work. Field slaves

When cheap French rum from St-Domingue flooded the market in the American colonies, the British government passed the *Sugar Act* (1764), another form of taxation without representation that helped fuel the American Revolution.

1640s

The sugar plantation system is introduced to the West Indies. Highly profitable and labor-intensive, it causes a massive increase in demand for slaves from Africa. France establishes a formal claim on Hispaniola.

1640–70

Tortuga (Île de la Tortue) becomes a major base for Caribbean piracy. Nominally ruled by a French governor, its buccaneers effectively form an independent republic, plundering Spanish ships for treasure.

1655

An English military expedition is dispatched by Oliver Cromwell to conquer Santo Domingo. Although beaten back, the navy saves face by managing to grab Jamaica as a permanent English foothold in the Caribbean.

1697

The Treaty of Ryswick settles the nine-year pan-European War of the Grand Alliance. As a result, Hispaniola’s colonial borders are finally settled, dividing the island into Spanish Santa Domingo and French St-Domingue.

1743

François Toussaint Breda is born into slavery near Cap Français. As Toussaint Louverture he becomes a key figure leading the Haitian Revolution, although he himself never lives to see full independence.

1749

Port-au-Prince is founded by French governor Charles Burnier. Its wide bay and central location make it the ideal new candidate for the capital of increasingly prosperous St-Domingue.

THE ATLANTIC SLAVE TRADE

When the Portuguese first rounded the coast of Africa in the 1450s, they were astounded by the wealth of the continent. Gold was a driving force in their early interactions with Africa, but this was swiftly overtaken by a trade in slaves. The settlement of the Americas and development of the sugar industry turned this into an international money machine, mining Africa for its human resources.

The Atlantic slave trade was dubbed ‘the triangular trade.’ European merchants sailed to Africa with goods to exchange for slaves. From Senegal to Mozambique, domestic slavery was already an established part of most African societies. The demand for trade goods – horses, firearms and gunpowder being the most sought after – turned African states into asset-strippers for the Europeans, sucking in slaves in insatiable numbers.

Traders packed hundreds of captives – often shackled in pairs by the wrist and leg – into the bowels of their ships. Around one in eight died from dysentery and scurvy during the passage, which lasted two to three months. The slaves were sold for sugar, which was then exported back to Europe – the third profitable leg of the trade.

The Portuguese and the British were the most avid slave traders, followed by the French and Dutch. Lisbon, Liverpool, Bristol, Nantes, Marseilles and Bordeaux all boomed as a result of the trade. Some African kingdoms (such as Benin) also became rich, but the majority of societies were impoverished by the repeated harvest of their most economically productive members. During the lifetime of the trade, around 12 million slaves were brought to the Americas. Such was the reach of the trade’s tentacles, slaves were often from tribes living 1000 miles from African slave ports. But few records were kept regarding the origin of the Africans brought to Hispaniola or nearby islands, and it remains almost impossible to trace the exact origins of most present-day African-Caribbeans.

worked in gangs, with even children required to work. Ten- and 12-hour days were the norm, and although Sunday was a rest day, slaves used any spare time they had to grow their own food – rations provided by owners were usually minimal. Huts were squalid, and clothes were provided by giving the slaves a bolt of cloth once a year. Punishments for stepping out of line were governed by the bloody *Code Noir*. Owners, who knew well they were outnumbered by the vast slave population, were never slow to apply the whip.

Mortality rates were high, as the sugar plantations consumed ever-increasing numbers of slaves. In non-sugar-producing slave countries (such as the USA), slave numbers increased due in great part due to birthrates. But the brutal conditions endured by sugar slaves meant that birthrates were low, and there was a constant decline in numbers that could only be met by importing more African captives. It’s estimated that around one in five slaves (one in three in some areas) died within three years of arrival on a sugar plantation.

Slaves that lived in towns, such as the new colonial capital of Port-au-Prince, fared better. Wealthy planters ran extravagant numbers of servants,

The Musée Colonial Ogier-Fombrun near Port-au-Prince in Haiti (p314), built on an old sugar plantation, gives an insight into the harsh realities of sugar production.

while even poor whites kept a slave if they could afford it. Many slaves were highly skilled, but even those working as dockhands and builders were glad to be away from the sickly sweet aroma of the sugar fields.

PATHS TO INDEPENDENCE

If you were a white planter in St-Domingue in 1789, life was good. Around half the world's sugar and coffee came from the colony. The produce of 8000 plantations was providing 40% of France's foreign trade. More economically productive than even Britain's North American colonies, it was the envy of the European powers. Around 40,000 whites lorded it over half a million slaves, although there was an increasing number of free blacks and mulattoes (mixed race) who were allowed to own property but were forbidden many political and legal rights. By contrast, Spanish Santo Domingo had fared badly. Years of neglect had seen it miss out on the sugar rush (Spanish investors had preferred to put their money into booming Cuba). Its population had increased to around 125,000, but it still relied primarily on cattle ranching for its lifeblood. Slave imports had never been high, as they simply couldn't be afforded, and slaves made up less than one percent of the population.

The African population hadn't always taken placidly to being transported for forced labor. Newly imported captives often refused to work on plantations and small-scale revolts were common (and bloodily suppressed). Slaves regularly absconded and formed bands that sought refuge in the mountainous hinterland between the two colonies. Dubbed 'Maroons,' they set up their own communities to try to re-create the African life they had lost. Others were more ambitious yet. Charismatic Maroon leader François Mackandal set up a network to agitate among plantation slaves and poison the planters.

Mackandal's rebellion was short-lived, but the colonists refused to see that their system was ultimately unsustainable. By the advent of the 19th century, slavery would be swept from the island altogether and both colonies freed from colonial rule. The spark for these momentous events, however, came not from the Caribbean, but the French Revolution that was reshaping the map of Europe. But once again, Hispaniola would play a key role on the world stage.

To follow the histories of the DR and Haiti from the independence struggles to the present day, see p45 and p265 respectively.

The Slave Trade: History of the Atlantic Slave Trade by Hugh Thomas is one of the most impressive available histories of this dark period of human commerce.

In the decade leading up to the Haitian slave rebellion, St-Domingue was importing an average of 29,000 slaves every year.

1757

Following years of planning, François Mackandal leads a band of Maroons in open rebellion to gain freedom for the slaves of St-Domingue. Betrayed by a confidante, he is burned at the stake by the French.

1779

Five hundred free black soldiers from St-Domingue fight the British army in Savannah, Georgia during the American War of Independence, including Henri Christophe, Haiti's second post-independence ruler.

1789

Revolutionary fervor sweeps France, with the masses demanding *liberté, égalité* and *fraternité*. Calls for liberation are heard as far as St-Domingue, causing a chain reaction leading to eventual independence for the colonies in Hispaniola.

Hispaniola Environment

THE LAND

If wealth were measured by landscape, the DR and Haiti would be among the richest countries in the Americas. Hispaniola is the second-largest island in the Caribbean, after Cuba, with a landmass of around 76,000 sq km, a dynamic mass of high mountains, fertile valleys, watered plains and an amazing diversity of ecosystems.

The island's geography owes more to the Central American mainland than its mostly flat neighboring islands. The one thing that Hispaniola has in spades is an abundance of mountains, with Haiti even proclaiming itself more mountainous than Switzerland. Primary among mountain ranges is the Cordillera Central that runs from Santo Domingo into Haiti, where it becomes the Massif du Nord, fully encompassing a third of the island's landmass. The Cordillera Central hosts Pico Duarte, the Caribbean's highest mountain, at 3087m, which is so big it causes a rain shadow that makes much of southwest DR so arid.

Hispaniola has eight mountain ranges in total. In the DR these include the Cordillera Septentrional, rising dramatically from the coast near Cabarete, and the Cordillera Orientale, along the southern shoreline of Bahía de Samaná. In Haiti, the southwestern Massif de la Hotte is noted for the rich biodiversity of its cloud forests, with the Massif de la Selle containing some of the country's last remaining pine woodland.

Between the ranges lie a series of lush and fertile valleys. Coffee, rice, bananas and tobacco all thrive here, as well as in the plains around Santo Domingo, Cap-Haïtien and Les Cayes. In comparison, sections of southwest DR and Haiti's Côte des Arcadins are semi-desert and studded with cacti.

The unique landscape of Hispaniola is due to the 90 million year-old movements of the earth's crust. As it slowly ground past North America, the Caribbean Plate cracked and crumpled to form the islands stretching from Cuba to Puerto Rico. Further collisions formed the Lesser Antilles, the coastal mountains of Venezuela and much of Central America. The plate is still moving at 1cm to 2cm per year, and continues to elevate Hispaniola. For example, Haiti was once split from the rest of the island by a strait. When it became connected it left behind the Cul-de-Sac plain and the brackish lakes (once the ocean) of Lac Azueï and the DR's Lago Enriquillo.

The beaches of Hispaniola are justly famous. A combination of white-sand beaches lined with palm trees and deluxe accommodations seems so perfect they are nearly impossible to leave. Adding a touch of the exotic are sea cliffs that create countless hidden beaches. Beneath the ocean's surface, however, there are more surprises. The entire island of Hispaniola sits on top of a shallow underwater platform that extends far offshore and forms the foundation for bountiful coral reefs, multitudes of tiny islands and sheltered banks where, in the northwest DR, humpback whales gather to breed. We're not in the least surprised that when Columbus arrived in Hispaniola he wondered if he hadn't landed in paradise itself.

WILDLIFE

Hispaniola's rich landscape is matched by an equally rich biodiversity. There are over 5600 species of plants and close to 500 vertebrate species on the island, many of these endemic.

When British monarch George III asked one of his admirals to describe Hispaniola, he was given a crumpled piece of paper, to demonstrate how mountainous the island was

HURRICANE ALLEY

Caribbean hurricanes are born 3000km away off the west coast of Africa, where pockets of low pressure draw high winds toward them and Earth's rotation molds them into their familiar counterclockwise swirl. The storms start small but grow in strength as they cross the Atlantic, fed by warm moist air, as they bear down on the Caribbean and the North American eastern shore.

A low-level storm is called a 'tropical disturbance,' which may then grow into a 'tropical depression.' When winds exceed 64km/h, the system is upgraded to a 'tropical storm' and is usually accompanied by heavy rains. The system is called a 'hurricane' when wind speeds exceed 120km/h and intensify around a low-pressure center, the so-called eye of the storm. Hurricane systems can range from 80km in diameter to a devastating 1600km across. They travel at varying speeds, from as little as 10km/h to more than 50km/h.

The strength of a hurricane is rated from one to five. The mildest, Category 1, has winds of at least 120km/h. The strongest and rarest of hurricanes, Category 5, most typically build up in July and August and pack winds that exceed 250km/h. Hurricane Katrina, which devastated New Orleans in 2005, was a Category 5 hurricane.

Hispaniola has often been hit hard by hurricanes. In 1979 Hurricane David killed over a thousand people, while in 1998 the destruction wreaked by Hurricane Georges left around 340,000 people homeless in the two countries. Landslides and flooding are major causes of destruction. In 2007, Hurricane Noel was the deadliest hurricane of the season, arriving in November, well past the traditional hurricane season. Severe flooding, particularly in the DR, killed around 160 people, and knocked out electricity for a third of that country. Haiti got off comparatively lightly, with 400 houses destroyed.

If you're near the coast when a hurricane is approaching, head inland, preferably to a large city where there are modern buildings and emergency services. Large resorts in the DR have sturdy hurricane shelters and evacuation procedures. Stay away from the beach, rivers, lakes and anywhere that mudslides are a risk. Avoid standing near windows, as flying debris and sudden pressure changes can shatter the glass.

The **National Hurricane Center** (www.nhc.noaa.gov), run by the US National Oceanic and Atmospheric Administration, is the place to head for current tropical storm information.

The problems of colonizing an island are clear, with plants heavily reliant on seeds and roots arriving on floating rafts of vegetation, often with animal hitchhikers. Reptiles make the best long-distance voyagers and over 140 species are found on the island, compared to around 60 amphibians and 20 land mammals (only two of which survived the arrival of Europeans). The rest of the country's fauna is made up of a rich variety of birds, marine mammals and bats.

Animals BIRDS

Over 250 species of bird have been recorded on Hispaniola, including several dozen species found nowhere else in the world. Abundant, colorful species include the white-tailed tropicbird, magnificent frigatebird, roseate spoonbill and greater flamingo, plus unique endemic species such as the Hispaniolan lizard-cuckoo, ashy-faced owl and Hispaniolan emerald hummingbird.

Travelers are most likely to encounter birds on beaches and coastal waterways – specifically herons, egrets, ibis, rails, pelicans and gulls. Some of the best spots for twitchers in the DR are Parque Nacional Jaragua, Parque Nacional Los Haitises, Parque Nacional Monte Cristi and Laguna Limón. In Haiti, binoculars are best pointed at Trou Caiman and Parc National la Visite. More-determined travelers taking the time to wander into some of the rich wildlife areas in the interior of the DR can expect to encounter a

Bird lovers will want *A Guide to the Birds of the West Indies* by Herbert Raffaele to answer all their ornithological questions.

tremendous variety of forest birds. Depending on the season and habitat, you will find a full range of North American warblers, or local birds like Hispaniolan trogons, woodpeckers, parakeets and parrots. Some of these are common and widespread, while others are highly secretive and require specialized knowledge or a guide to locate.

Favorites among birdwatchers include the DR's national bird – the odd palmchat, which builds large apartment-like nests in which each pair sleeps in its own chamber. The endangered La Selle thrush is a high-altitude species prized by visitors to Haiti.

LAND MAMMALS

The arrival of Europeans, who introduced many disruptive species of their own, proved disastrous for Hispaniola's land mammals. Rats, cats, pigs and mongooses all tore through the local wildlife with disastrous consequences.

Just two native mammal species remain, clinging to survival on scattered pockets throughout Haiti and the DR. These are the hutia, a tree-climbing rodent, and the endemic solenodon, an insectivore resembling a giant shrew. The solenodon is particularly threatened, and both species are nocturnal, making sightings extremely difficult.

MARINE MAMMALS

Hispaniola is world famous for its marine mammals, with manatees and humpback whales the star attractions. Travelers, however, are more likely to see dolphins unless they arrive in the right season or make a special trip to the right habitat.

Manatees feed on the seagrass meadows surrounding Hispaniola, hence their alternative name of 'sea cow' (their closest relative is in fact the elephant). Weighing up to 590kg and reaching 3.7m in length, manatees are shy, docile creatures; Parque Nacional Monte Cristi (p200) is the best place to try to spot them.

Several thousand humpback whales migrate south from frigid arctic waters to breed and calve in the tropical waters of the DR each winter (with their numbers peaking in January and February). The DR is one of the foremost places in the world to view whales, and it is one of few places where you can swim and snorkel (under supervision) with these truly magnificent creatures. Tourist boats make half-day excursions to the Banco de Plata (Silver Banks), located just beyond the Bahía de Samaná, to view the whales close up (p145).

FISH & MARINE LIFE

The shallow coastal waters and coral reefs that surround Hispaniola are home to a tremendous variety of sea life. So many species of tropical fish, crustaceans, sponges and corals can be found here that it takes a specialized field guide to begin to sort them out. Where they remain intact and un-fished – such as at Sosúa (p180) and Monte Cristi (p200) – the reefs of the DR are stupendously beautiful. In Haiti, the Zombie Hole of Saint-Marc in the Gulf of Ganâves plunges 200m and is home to reputedly the world's largest seasponge, the Elephant's Ear. Some of the more colorful Caribbean reef fish include fluorescent fairy basslet, queen angelfish, rock beauty and blue tang, but each visitor will quickly find their own favorites.

The warm waters are also home to four species of sea turtle: green, leatherback, hawksbill and loggerhead. As well as encounters you might have while snorkeling, from May to October these turtles can be viewed coming ashore at night to lay their eggs on sandy beaches in places such as Parque Nacional Jaragua (p236) in the DR.

Bats are the only nonendangered, protected species on the island. They eat as many as 2000 mosquitoes a night, helping reduce the transmission of dengue and other mosquito-borne diseases.

Most of the humpbacks visiting the DR spend the winter gorging on krill in the feeding grounds of the Gulf of Maine off the US coast – they don't take a bite to eat during their entire Caribbean stay.

An overview of Caribbean coral reefs can be found in the eye-opening *A Guide to the Coral Reefs of the Caribbean*, by Mark Spalding.

REPTILES & AMPHIBIANS

Reptiles were Hispaniola's most successful vertebrate colonists. You can expect to see lots of lizards (geckos in particular) but also keep your eye out for snakes and turtles and even the American crocodile (or caiman), found in sizable numbers in the brackish cross-border lake of the DR's Lago Enriquillo (p240) and Haiti's Lac Azu e (p313). There is also a Hispaniolan boa, its numbers now reduced by mongoose predation. At opposite ends of the spectrum are the Jaragua lizard, which is the world's smallest terrestrial vertebrate (adults measure only 2.8cm), and the massive 10kg rhinoceros iguana. Frogs are the most numerous amphibians. Haiti's Massif de la Hotte is a particular hot spot for frogs, with 13 species endemic to this area alone.

ENDANGERED SPECIES

All of the island's large animals, and many of its smaller ones, could easily be considered as under threat. Environmental degradation is the main cause, and is especially acute in Haiti. Both Haiti and the DR have outlawed practices that endanger protected species, but enforcement is minimal or absent. Except for the creation of national parks, there are few practical steps being taken to protect threatened species, many of which are endemic.

Vertebrate species particularly endangered on Hispaniola include the Caribbean manatee, Caribbean monk seal, Atlantic spotted dolphin, American crocodile, rhinoceros iguana, Hispaniolan ground iguana, sea turtles, three species of freshwater turtle and dozens of bird species.

Want to put a name to that frog or gecko? Consult *Amphibians and Reptiles of the West Indies*, by Henderson and Schwartz.

CONCH

What Dominicans call *lamb * (or *lambi* in Haiti) is known to scientists as *Strombus gigas*, in Ta no as *cohubo* and in English *queen conch* – yet no matter what you call it, this hefty snail-like creature is the largest mollusk in the Caribbean (growing 35cm long and weighing up to 3kg) and is a vital part of the underwater ecosystem and a staple of Hispaniola's cuisine.

Conch (pronounced 'konk') live in shallow waters near coral reefs and are found throughout the Caribbean, as well as along the Mexico, Florida, Bahamas and Bermuda coastlines, and as far south as Brazil. They feed on algae that can asphyxiate coral if not kept in check.

Conch has been an important food source on Hispaniola and throughout the Caribbean for centuries. Archaeologists have uncovered piles of conch shells near ancient settlements, including on Isla Saona and Isla Catalinita in the DR's Parque Nacional del Este. Conch shells were used in tool-making and carved into fine necklaces and other jewelry. Ta nos also used ground conch shell as an ingredient for a hallucinogenic powder used in religious ceremonies. Centuries later, blowing the conch became the emblematic call to arms of the Haitian slave rebellion, still commemorated in popular art.

Lambi is found on almost every restaurant menu in both the DR and Haiti; typically it's chopped into small morsels and served in a spicy tomato sauce or with garlic. As a by-product, conch shells are still used in jewelry and other crafts. One out of every 10 thousand conches also forms a pearl, highly prized and ranging from pale pink to fiery red.

Conch take three to five years to mature, and are easily caught, as they prefer clear shallow water. A valuable fishery resource, conch populations have shrunk considerably in most areas of the Caribbean due to over-harvesting and degradation of the seagrass meadows used as conch nurseries. As a result, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) introduced quota-based export restrictions on conch in 2003, but while the DR (previously the largest exporter in the Caribbean) has implemented these, instability across the border has seen Haiti lagging behind.

Plants

Hispaniola presents a bewildering assortment of plants. In every season there is something flowering, fruiting or filling the air with exotic fragrances, and it makes the place truly magical. Nearly a third of the 5600-odd species are endemic, spread across more than 20 discrete vegetation zones ranging from desert to subtropical forest to mangrove swamp.

Of these vegetation zones, by far the most prevalent is the subtropical forest, which blankets the slopes of many of the DR's valleys and is found throughout the Peninsula de Saman . This is a majestic landscape, dominated by royal palms with large curving fronds, and native mahogany trees.

True tropical rainforest is rare both because areas receiving enough rainfall are scarce and because the grand trees of this forest type have been extensively logged. Green-leaved throughout the year, these dense humid forests support a wealth of tree ferns, orchids, bromeliads and epiphytes. Examples can still be found in the Vega Real, which is located in the eastern end of the Valle de Cibao, adjacent to the Saman  region.

Above 1830m the habitat gives way to mountain forests characterized by pines and palms, in addition to ferns, bromeliads, heliconias and orchids. Although threatened by coffee plantations and ranching, large tracts still exist in Parques Nacionales Armando Berm dez and Jos  del Carmen Ram rez (p217) and Haiti's sublime Parc National Macaya (p327).

Thorn and cacti forests abound in the southwest corner of the DR. Parque Nacional Jaragua (p236), the country's largest protected area, consists largely of thorn forest, cacti and agaves, and receives less than 700mm of rain a year. The Massif de la Selle across the border is one of Haiti's few remaining areas of thick pine forest.

Mangrove swamps are a characteristic feature along the coast around the DR's Bah a de Saman . They're a hugely important wildlife habitat, serving as nurseries for many marine species and nesting grounds for water birds. Mangrove stands also play a critical ecological role by buffering the coast from the erosive power of storms and tides.

NATIONAL PARKS

The DR and Haiti are home to some of the largest and most diverse parks in all the Caribbean, but comparisons between the two countries are striking. The DR has set aside over 10% of its land as *parques nacionales* (national parks) and *reservas cient ficas* (scientific reserves) and is doing a reasonably good job of protecting these important local resources in the face of external pressures. This is especially important in coastal areas where beach resorts are devouring open spaces like they were candy and destroying fragile coral reefs with huge numbers of tourists in the process. Enforcement has been less effective in the DR's central mountains, where logging and encroachment by farmers continues in many areas.

In Haiti, the state has little power to prevent encroachment into its *parcs nationaux* by local populations, where land clearance for farming and charcoal burning are major threats. Only the relative remoteness of Parc National Macaya in the southwest, which hosts Hispaniola's most intact cloud forest, has led to it avoiding the large-scale environmental devastation seen across the rest of the country.

ENVIRONMENTAL ISSUES

Hispaniola, like all islands in the Caribbean, is ultimately a tiny isolated speck of land with limited space and resources. It has a rapidly growing population and, in the DR, millions of tourists a year, all of whom put

Thirty of the 133 orchid species found in Hispaniola are endemic to the cloud forests of Haiti's Parc National Macaya.

Living in salt water is a challenge for mangroves, and some species require a healthy dose of fresh water at least once a year in order to survive. Their source? Hurricanes.

Introduced from the Indian Ocean, coconut palms have huge leaves divided into narrow segments so they don't tear like cotton sheets in powerful tropical storms.

HISPANIOLA'S NATIONAL PARKS

Covering most of the island's ecosystems, the 13 national parks in the DR and Haiti offer outdoor enthusiasts good options for adventure. Further details are given in related chapters.

Dominican Republic

- **Parque Nacional Armando Bermúdez** (p217) This 766-sq-km park in the humid Cordillera Central park is blanketed in pine trees, tree ferns and palm trees, and is home to the hawk-like Hispaniolan trogon.
- **Parque Nacional del Este** (p124) Located in the southeastern part of the country, it consists of dry and subtropical humid forest with caves featuring Taíno petroglyphs, as well as the sandy beaches of Isla Saona: look out for manatees and dolphins off the coast.
- **Parque Nacional Isla Cabritos** (p240) In the southwest, this park is a 24-sq-km island surrounded by the saltwater Lago Enriquillo. It is a refuge for crocodiles, iguanas, scorpions, flamingos, crows and cacti.
- **Parque Nacional Jaragua** (p236) At 1400 sq km, this is the largest park in the DR. It is made up of an arid thorn forest, an extensive marine area and the islands of Beata and Alto Velo. This southwestern park is rich in birdlife, particularly sea and shore birds, and its beaches are nesting grounds for hawksbill turtles.
- **Parque Nacional José del Carmen Ramírez** (p217) This 764-sq-km park is home to the Caribbean's tallest peak – Pico Duarte – and the headwaters of three of the DR's most important rivers: Yaque del Sur, San Juan and Mijo. Although there is occasional frost, the park is considered a subtropical humid mountain forest.
- **Parque Nacional La Isabela** (p198) Located on the north coast, this park was established in the 1990s to protect the ruins of the second European settlement in the New World. An on-site museum, however, contains many objects that were used by the earliest European settlers.
- **Parque Nacional Los Haitises** (p140) Situated on the Bahía de Samaná, this park's lush hills jut out of the ocean and are fringed with mangroves, tawny beaches and several Taíno caves. Bamboo, ferns and bromeliads thrive, along with the Hispaniolan parakeet.
- **Parque Nacional Monte Cristi** (p200) This 530-sq-km park in the extreme northwest contains a subtropical dry forest, coastal lagoons and seven islets. It is home to many seabirds, including great egrets, brown pelicans and yellow-crowned night herons. American crocodiles also inhabit the park's lagoons.
- **Parque Nacional Sierra de Bahoruco** (p239) Located in the southwest, this 800-sq-km park stretches from desert lowlands to 2000m-high tracts of pine. Along with the broad range of plantlife (orchids abound), it's rich in birds, including the endemic white-necked crow and the Hispaniolan parrot.
- **Parque Nacional Submarino La Caleta** (p105) Only 22km from Santo Domingo, this 10-sq-km national park is one of the country's most visited. Containing several healthy coral reefs and two shipwrecks, it is one of the top diving spots in the country.

Haiti

- **Parc National Historique La Citadelle** (p337) An hour from Cap-Haïtien, this small park hosts the imposing mountain fortress of Citadelle la Ferrière, one of the most stupendous historic sites in the Caribbean.
- **Parc National La Visite** (p310) Within easy reach of Port-au-Prince, this mountainous park offers good hiking through pine forests with views to the Caribbean.
- **Parc National Macaya** (p327) In the southwest Massif de la Hotte, this remote and hard-to-access park has Hispaniola's best cloud forest and some of its richest biodiversity.

severe pressure on the land. Water use, damage to marine ecosystems and, most of all, deforestation present the DR and Haiti with acute environmental challenges. Nowhere are these challenges more starkly illustrated than when flying between the two countries. The border cuts the two like a knife, dividing the green forested hills of the DR from the brown slopes of Haiti. Today, just 1% of Haiti's natural forest remains, compared with 28% across the border.

The loss of Haiti's forests is an ongoing chapter in centuries of human activity that have forever altered Hispaniola's landscape. Introduced mammal species from rats and mongooses to pigs have wreaked havoc on native ecosystems, while swaths of land were cleared for commercial plantations such as sugar (even the iconic coconut palm is an import from the Indian Ocean).

The political development of the different countries has greatly influenced their environmental outcomes. Land clearance was an early priority in French St-Domingue, while Spanish Santo Domingo languished as a colonial backwater, and at independence Haiti was economically far more developed than its neighbor. But the isolation it suffered in the 19th century saw it return to a largely peasant economy and increasingly unstable central government, a pattern extending to the present. Clearance for subsistence farming and charcoal burning (still the main form of fuel in Haiti) has wreaked an environmental disaster. Deforestation has led to erosion, decreased soil fertility and lower rainfall. Haiti's exploding population – two-thirds of the island's population in one-third of its space – creates its own pressure to clear further land. In the DR, stronger government, notably under the Trujillo dictatorship, allowed it to avoid Haiti's ruinous path, setting aside pristine land and at times banning commercial logging. Even here, however, parks and reserves remain chronically underfunded and illegal logging and agricultural encroachment remain a problem, especially in the central highlands.

Modern environmental issues stem from both local residents and foreign visitors. Locals, for example, utilize rivers and waterways as garbage and sewage dumps, and many rivers and beaches are strewn with trash and plastic bags. Garbage is even a problem in towns and cities, where trash bins are few and collection sporadic. The problem is especially pressing in Haiti, where even the majority of Port-au-Prince's population lacks adequate sanitation and access to clean water. Everywhere (and particularly in the DR's tourist areas), an insatiable appetite for disposable items results in many of them ending up in overflowing garbage pits or scattered elsewhere in the environment.

Coastal resorts and villages also have a tremendous impact on the very seas that provide their livelihood. Pollution, runoff and other impacts caused by massive developments have destroyed many of the island's foremost reefs. Overfishing and the inadvertent destruction caused by careless humans transform reefs into gray shadows of their former selves.

There is a growing awareness of the need to protect these diminishing resources, although the DR is better placed than Haiti to take action. In the DR – country of the megaresorts – there is an increased emphasis on low-impact tourism and environmental monitoring, while outside funding has helped support critical infrastructure for ecotourism and parks. In Haiti, environmental protection can only go hand in hand with social and economic development, aims toward which the country still continues to take baby steps.

Though written for the eastern Caribbean, Virginia Barlow's *The Nature of the Islands* is an excellent and highly readable introduction to the plants and animals of the entire region.

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