

# U.S. Virgin Islands

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Clemson University



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*Allegory of Europe suspended by Africa and America*  
*William Blake, c. 1790*



# **U.S. Virgin Islands**

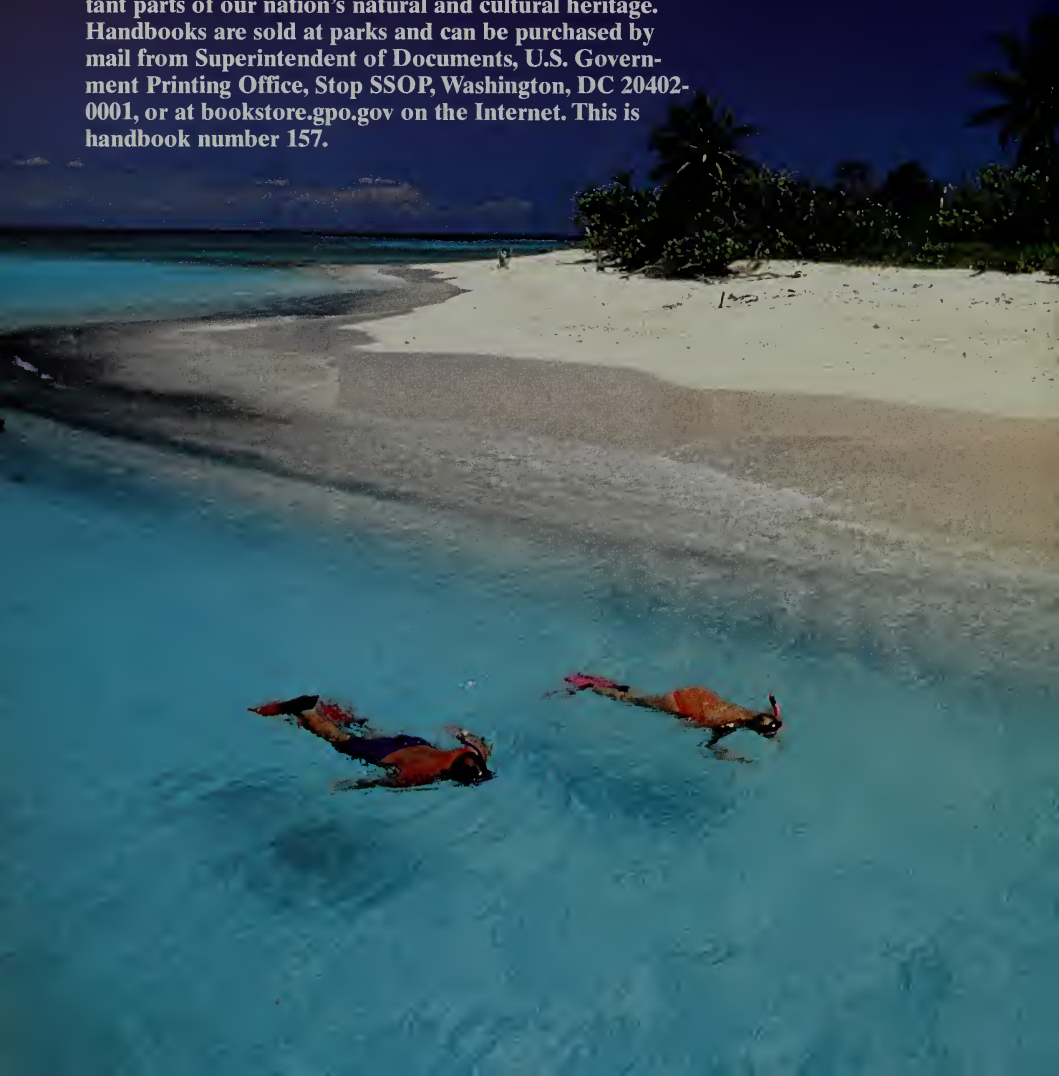
**A Guide to National Parklands in the  
United States Virgin Islands**

**Produced by the  
Division of Publications  
Harpers Ferry Center  
National Park Service**

**U.S. Department of the Interior  
Washington, D.C.**

Five National Park System units help preserve the natural resources and history of the U.S. Virgin Islands. This handbook offers you insight into these islands' marine and terrestrial ecosystems and human histories. The protected natural landscapes and marine areas of the islands are of great significance to the whole of the western hemisphere, particularly for sea turtles, neotropical songbirds, and other migratory species. Island reefs, seagrass beds, and mangrove forests serve as nurseries and homes for many ocean-going species.

National Park Handbooks are published in support of National Park Service management programs and to promote understanding and enjoyment of the more than 380 units of the National Park System, which preserve important parts of our nation's natural and cultural heritage. Handbooks are sold at parks and can be purchased by mail from Superintendent of Documents, U.S. Government Printing Office, Stop SSOP, Washington, DC 20402-0001, or at [bookstore.gpo.gov](http://bookstore.gpo.gov) on the Internet. This is handbook number 157.





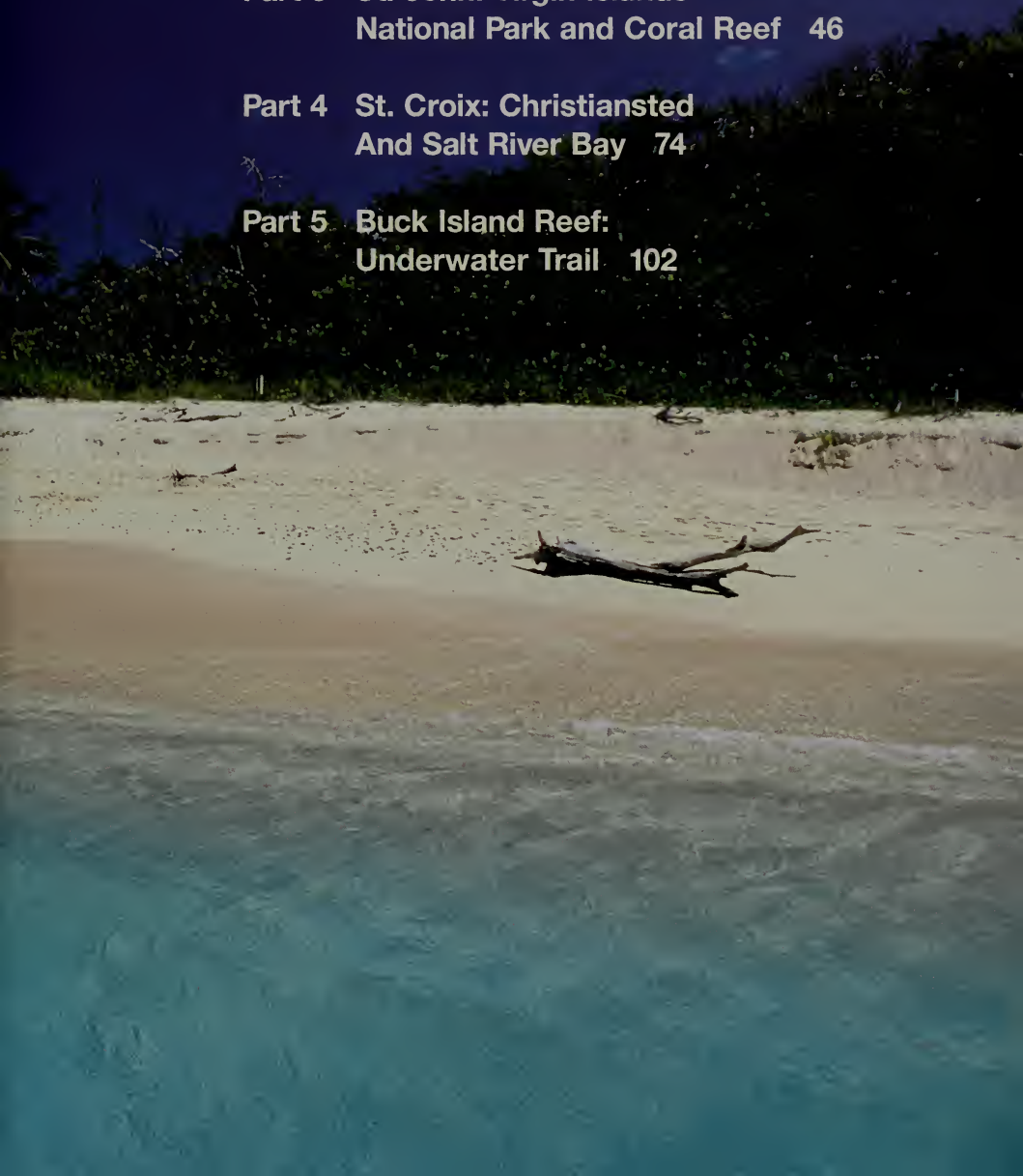
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# Part 1



UNITED STATES

GULF OF MEXICO

MEXICO

Bay of Campeche

Straits of Florida

CUBA

Cayman Islands  
Cayman Trench

Gulf of Honduras

GUATEMALA  
BELIZE

HONDURAS

EL SALVADOR

NICARAGUA

COSTA RICA

PACIFIC OCEAN

W E S

Panama Canal

PANAMA

Gulf of Panama

North



Coral reef

# The U.S. Virgin Islands Caribbean Setting

ATLANTIC

OCEAN









## Caribbean Sea and U.S. Virgin Islands: Quick Facts

The U.S. Virgin Islands are part of the northeastern West Indies, the island arc between the Caribbean Sea and Atlantic Ocean. To their northeast lie the British Virgin Islands. West, across the Virgin Passage, are the islands of Culebra, Vieques, and Puerto Rico—together a self-governing U.S. commonwealth. The Virgin Islands use Atlantic Standard Time all year.

### Size and Deepest Point

The Caribbean Sea covers about 750,000 square miles. The Cayman Trench, between Cuba and Jamaica, is 22,788 feet below sea level.

### Character

Caribbean Sea water is less salty than Atlantic Ocean water. The current runs clockwise. Volcanism and earthquakes are common in the region. European, East Indian, and American languages and many blends of them, some influenced by African tongues, are spoken in the Caribbean. Local custom in the U.S. Virgin Islands is to greet strangers with “good morning” or “good afternoon.”

### Climate

Year-round daytime temperatures range in the 80s°F, 70s at night; summer days are commonly in the low 90s. Average annual rainfall is 45 inches. Rains are more likely

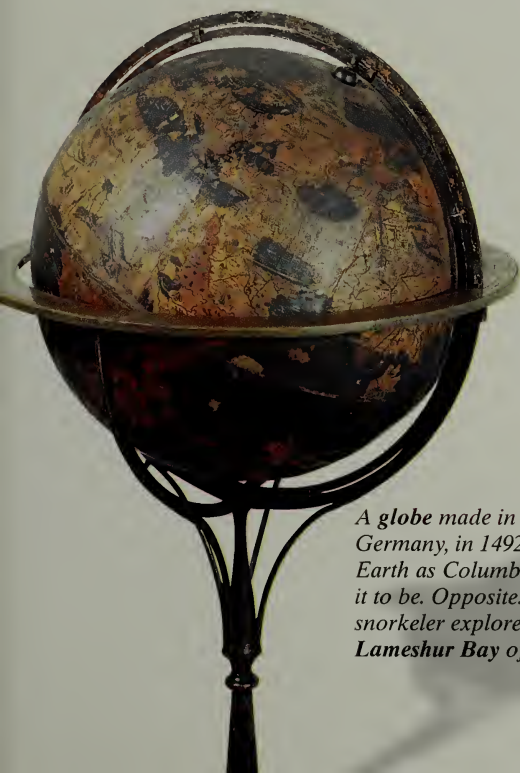
in May and September through October. Water temperatures range from 78°F to 85 throughout the year. Hurricane season, June 1 to November 30, peaks in September and October.

### Travel Savvy

The U.S. dollar is used in the U.S. and British Virgin Islands and Puerto Rico. Postal rates are the same as mainland U.S. Postal Service rates. Customs: U.S. citizens are allowed \$1,200 in duty-free purchases from the U.S. Virgin Islands but check current limits before you buy.

### Documents

Proof of citizenship (passport, birth certificate with seal, or voter registration card) is needed for U.S. citizens on departing the U.S. Virgin Islands. Passports are not required for travel by U.S. citizens between the U.S. Virgin Islands and Puerto Rico. Passports are required for U.S. citizens traveling between the U.S. Virgin Islands and the British Virgin Islands nearby.



*A globe made in Nuremberg, Germany, in 1492 showed Earth as Columbus believed it to be. Opposite: A young snorkeler explores **Great Lameshur Bay** off St. John.*





Coors LIGHT







# Where People, Worlds, And Continents Meet

*Captured from above Whistling Cay off northern St. John, this view of **Francis and Maho bays**—backed by forested mountains topped with puffy clouds—might be mistaken for a landscape architect's model of paradise.*

*Preceding pages: Snorkelers swim off a **Buck Island beach** (contents pages), and islanders celebrate their annual, colorful **Carnival** (pages 4-5). Native to these islands, the **iguana** is listed as endangered by the Virgin Islands government, largely because of poaching and automobile traffic (pages 6-7). Yearly, the **Rolex Regatta** attracts sailors to compete off St. Thomas and St. John (pages 12-13).*

*Cover: **Coral reefs** are living organisms. They hug sun-struck shallows of seawater around the equator and are often linked ecologically to shallow-water mangrove and seagrass communities. Together these are among Earth's most biologically complex and diverse ecosystems. Long-time monitoring of coral reefs in the Virgin Islands confirms other evidence that coral reefs are deteriorating worldwide.*

Worlds once met here in the Caribbean. So many peoples have met and still meet here that the region has been described as “an ethnic salad of native Indian, East Indian, African, and European ingredients.” Oceanic plates actively converge here, too. This region’s rich biological diversity is both naturally surprising and unnaturally threatened. “I think that the Caribbean Sea does not enclose . . .” writes Edouard Glissant, “It does not impose one culture, it radiates diversity.”

Advertising paints the region as strips of sandy beach at the end of airplane flights or on a cruise-ship shore call. Its images of the Caribbean suggest oversimplification instead of this region’s diversity. The actual U.S. Virgin Islands are real places and home to people with real histories. These islands also support, shelter, and harbor diverse natural niches: from coral reefs to a mountain-deep sea trench, from tropical forests to semi-arid headlands. Even the beaches boast diversity, ranging from coral sands to rocky cobbles.

The U.S. Virgin Islands of St. Thomas, St. John, St. Croix, and Buck Island today host five units of the National Park System: Buck Island Reef National Monument, Christiansted National Historic Site, Salt River Bay National Historical Park and Ecological Preserve, Virgin Islands National Park, and Virgin Islands Coral Reef National Monument. This book will help you explore these real places, engage their rich stories, and visualize them for yourself. They are part of our collective national heritage that Congress has set aside for permanent protection.

That the Caribbean Sea “does not enclose” is no mystery. The great island arc or archipelago of which the U.S. Virgin Islands are a part defines the sea’s eastern edge. Known as the West Indies or Antilles, these often-volcanic islands separate the Caribbean Sea and Gulf of Mexico from the open Atlantic Ocean, curving 2,500 miles from the

## How the Northern Atlantic Ocean Works

Trade winds and westerlies are global wind patterns. In the northern Atlantic Ocean, trade winds blow from the northeast and westerlies from the southwest. Earth's rotation bends them away from north-south paths. Warm and cold ocean currents describe similar movement, and prevailing winds can drag surface waters. These forces distribute heat from the equator and cold from the poles, making more of Earth habitable. Trade winds moderate the Virgin Islands' tropical climate.



**Plate Tectonics**  
Several large plates make up Earth's crust. They float on molten matter below. The eastern Caribbean is geologically unstable because the Atlantic, Caribbean, and North American crustal plates meet here. Mild earthquake tremors average one per day on St. John.



● Sept. 25, 1989  
Hugo dissipates

North Atlantic Current 0.5 knots

PREVAILING  
WESTERLY WINDS  
→ 35° to 60° North latitude

Azores

Madeira

Canary Islands

ATLANTIC OCEAN

HORSE LATITUDES  
Light variable winds  
25° to 35° North latitude

Canary Current 0.75 knots

AFRICA

Cape Verde Islands

NORTHEAST  
TRADE WINDS  
↙ 5° to 30° North latitude

Equatorial Current 1.0 knots

Tropical storm

● Sept. 9, 1989  
Hugo forms

Sahara Desert dust rides the trade winds to the Caribbean and Central America.

DOLDRUMS  
Light variable winds  
5° North to 5° South latitude

Hurricanes form as far away as West Africa—as Hugo did, devastating the Virgin Islands in 1989. Tropical storms have winds from 39 to 74 mph; hurricanes have winds more than 74 mph. Decade-long hot or dry periods in West Africa influence how frequently hurricanes occur in the Caribbean. North of the equator, hurricane winds move counterclockwise.

## History Followed Nature's Pathways

Commerce between Europe, Africa, and the Americas flowed clockwise at first, with the winds and currents shown on the previous pages. The trade winds were named for their role in sailing-ship days. By the 1700s ships out of Denmark picked up slaves in West Africa for sale in the Virgin Islands. The islands exported mostly sugar, rum, molasses, cotton, and hardwoods. Until Denmark outlawed its slave trade in 1803, Danish ships carried inexpensive manufactured goods and rum to Africa, then slaves to the Caribbean, and the islands' exports back to Scandinavia. Other trade flowed between Europe, Africa, the West Indies, and Charleston, New York, or Boston.

The Panama Canal was built by the United States from 1904 to 1914. World War I persuaded the United States to purchase the Danish West Indies—now the U.S. Virgin Islands—from Denmark for \$25 million for the strategic protection of the canal.

Carib Indians moved north from South America in the early 1400s. They conquered the Taino Indians and later gave their name to the region.







E U R O P E

Danish ships sailed down the English Channel en route to Africa. Returning they passed west of Ireland, then over the Orkney Islands, and down to Denmark.

March 15, 1493  
Columbus departs  
Cadiz, Spain

Azores

Madeira

Canary Islands

A F R I C A

Columbus' Second Voyage

North American Route

African Route

Cape Verde Islands

Slaves were acquired by Danish ships at any of five slaving forts along the coast of Guinea, now Ghana. Up to 25 or 30 percent of this human cargo usually died in passage.

African Route, Middle Passage



**Hugo Moolenaar** has been described as “a cultural entrepreneur.” Best known for reviving the cultural tradition of the Mocko Jumbi, who walks on stilts, he also helped revive the former plantation harvest festival as Carnival on his native St. Thomas.

*Opposite: A St. Thomas produce market stall hints at the great globalization of food plants that commenced when Columbus linked two old worlds as a new one. His second voyage, in 1493, sparked the Columbian Exchange—of peoples, cultures, plants, animals, and, unfortunately, diseases—between formerly isolated worlds. One of the goals of today’s Territorial government is to make the Virgin Islands more self-sufficient in food production.*

Venezuelan coast northward and westward to near Florida. Three groups of islands make up the West Indies Archipelago: the Greater and Lesser Antilles, southern Dutch or Netherlands Antilles, and Venezuelan Islands. The U.S. Virgin Islands are part of the Lesser Antilles (meaning “smaller,” not “less important”). Within the Lesser Antilles the U.S. Virgin Islands are part of the Leeward Islands, to whose southeast lie the Windward Islands.

However, atlases offer no absolutes on the matter of these names. They were affixed not by native peoples but by wind-borne foreign navigators and ships’ chart-makers.

On a pottery shard-strewn shore at Salt River Bay on the U.S. Virgin Island of St. Croix, time itself bakes in the tropical sun. Stare northwestward to the watery horizon and you may imagine this sea’s namesake Carib Indians paddling their log canoes the 90 miles to Puerto Rico to help attack the Spanish there in 1511. The Caribs had wrested control of today’s St. Croix from the Tainos (tye-eé-nos) in the early 1400s and would themselves later sink under the onslaught of the Spaniards. What intimate knowledge of these sun-splashed islands vanished with the disappearance of the Tainos and Caribs? What nautical knowledge disappeared forever—clues as subtle as changes in wavelet patterns, or how the water may reflect light to give paddlers a sense of direction when only open water offers a horizon? A remnant earthwork fort at Salt River Bay marks how European nations fought for colonial footholds here in the 17th century. History runs as deep as the tropical forest shade, as colorful as plumage, as varied as the cultures now burnished in tropical beauty here. There are manifold attractions: colorful comminglings of blue waters and narrow, often white strands of coral-sand beaches. Inside forests, lacy sunlit patterns filtered by the layers of leaves drip golden through dense vegetation.

It would always be hot and humid here but for the trade winds that wafted Columbus westward across the Atlantic. They moderate this tropical climate for a mean annual temperature of 79°F. These winds that carried trade bring hurricanes as well. They also carry Sahara Desert dust that settles on islanders’ household furniture. The globalization of







*Guy Benjamin was the first St. John resident to graduate from Charlotte Amalie High School on St. Thomas. With degrees from Howard and New York universities, he has had a distinguished career as an educator. He has documented the old ways of daily life on St. John. His books include Me and My Beloved Virgin and More Tales from Me and My Beloved Virgin.*

cultures that Columbus came to symbolize followed nature's pathways after all.

Tremors and trenches underscore the theory of plate tectonics—that great slabs of Earth's crust float atop the planet's semi-molten outer or mantle layer. Eons ago, all these tectonic plates—six major and some minor ones—were joined as the super-continent Pangea, *all or whole Earth*. Where the crustal plates meet and grind against each other, as three do in the Caribbean, earthquakes and volcanoes occur. Indeed, the island of St. John averages 30 minor earthquake tremors per month.

Both St. Thomas and St. John were formed by volcanoes and rise steeply from sea level, so they have narrow beaches. Steepness made those islands less profitable for agriculture than flatter St. Croix as the importance of sugar cultivation grew. St. Croix and Buck Island were formed by uplift, from tectonic pressures, not by volcanism. Largest of the U.S. Virgins, St. Croix remains more amenable to agriculture.

The Caribbean Sea is formed of two major basins and has many volcanic neighbors. Just north of Puerto Rico, the Caribbean and North American plates grind together, causing earthquake tremors—and the 28,374-foot-deep Puerto Rico Trench. Off St. Croix's north coast a trench-like deep plunges 13,000 feet where the South American and Caribbean plates meet: St. Thomas and St. John mark the southernmost tip of the North American continent, and St. Croix and Buck Island mark the northernmost tip of the South American continent. Tectonically speaking, the U.S. Virgin Islands are diverse and intercontinental.

So are its people—even more so. Over 4,000 years ago migratory Archaic peoples began traveling up the Antillean chain from South America. They left evidence of their culture on St. Croix and migrated north and west as far as Puerto Rico 3,000 to 4,000 years ago. About 2,000 years ago they seem to have disappeared, to be replaced by the Igneri, who were pottery makers and St. Croix's first agriculturalists.

After many centuries the Tainos or Island-Arawaks settled on St. Croix, which they called *Ayay*. They, too, came north from the northern Amazon and Orinoco river basins in South America. Less than 100 years before Columbus ventured to the

Caribbean, its namesake Island-Caribs, pottery makers as well, moved into the Lesser Antilles and St. Croix, subjugating the Tainos. At Salt River Bay in 1493, Columbus's men encountered Caribs and their Taino slaves. Collectively, Caribs, Tainos, and their predecessors had lived here for thousands of years with less environmental and cultural impact than these islands have sustained in the past 400 years, even though Columbus noted in his log book the extensive cultivation on St. Croix.

Each Caribbean island has a distinct cultural heritage. Today 85 percent of U.S. Virgin Islands residents are people of color. Those of African descent mostly originated in the Gold Coast region of West Africa. Hispanic residents largely have come from Puerto Rico (including Vieques and Culebra) and the Dominican Republic. Most Caucasians have come from the United States, but a small percentage descend from European colonial families. Some anthropologists suggest that all humans originated in Africa, so perhaps we were merely brought back together here in the Caribbean. Indeed, as historian Arnold R. Highfield has written, 1492 "marked the beginning of the end of the movement of human-kind" away from Africa.

From the late 1800s through about 1960 the population of St. John was 600 to 700 people; today it is more than 3,500. The populations of St. Thomas and St. Croix have almost quadrupled in that time. Despite the pressures confronting them, among areas under the U.S. flag these islands are remarkable for their ethnic and cultural diversity.

The mission of the National Park Service in the Virgin Islands is to help preserve the natural and cultural heritage of five protected areas. Together with territorial and other federal agencies, the National Park Service works to combine preservation with restoration, stewardship, and sustainable living. We invite you to share and spread our vision of preserving the richness of this heritage for the future. We want to be good and enduring neighbors—to these islands' history and diverse cultures, to you, and to this fascinating natural world of land and sea and air.



*Leona Watson of St. Croix is a cultural story teller and one of the leading proponents of the West African song form cariso. Like the later West Indian calypso form, cariso provided social commentary and satire by telling stories based on people and events. These are usually set in the plantation era, both before and after the emancipation.*

*Pages 28-29: Coral reefs cover only 360,000 square miles world-wide but host one quarter of all ocean species. Only tropical rainforests rival some Pacific Ocean coral reefs for their biological diversity. Coral reefs of these U.S. Virgin Islands, much younger than many of their cousins in the Pacific and Indian oceans, are crucial to the biological diversity of the Caribbean.*

## Timeline: U.S. Virgin Islands

The story of today's Virgin Islands begins with the tempest of our planet's geological past. The form of many major and 50-some lesser U.S. Virgin Islands originated in volcanism. Yet volcanic islands such as St. Thomas and St. John were also uplifted by movements of the crustal plates that form Earth's surface. Rising and falling sea levels

in more recent geological time have caused these islands sometimes to join together, sometimes almost to disappear. Archeological work on shoreline village sites is adding to what we know about early cultures here. This work must be done before wave action erodes the beaches and disturbs artifact deposits. The first peoples on these islands,

### St. Thomas

**1665** 

Danish attempt at settling St. Thomas fails.

**1671** Danes resettle St. Thomas, sponsored by Glueckstadt Co. (later Danish West India Co.).

**1673** First slave vessel's arrival with 103 Africans launches St. Thomas as a slave market.

**1754** *Danish crown buys Danish West India & Guinea Co. stock and terminates charter. The islands are a crown colony.*

**1764** Frederick V grants free-port status to St. Thomas, St. John.

**1792** *March 16 edict of King Christian VII of Denmark-Norway specifies an end to African slave trade.*

**1801** 

*First British occupation during Napoleonic Wars.*

**1802** 

*Peace of Amiens returns the islands to Denmark.*


**1803** *Denmark is first European nation to end its African slave trade.*

**1804** Charlotte Amalie fire destroys hundreds of homes;

### St. John

**A.D. 1** Archeological evidence shows beginnings of Igneri (pre-Taino) culture here.

**700** Archeological evidence of Taino (so-called Arawak) culture on coastal areas — Trunk, Cinnamon, and Lameshur.

**1493** 

Columbus passes St. John on second voyage but doesn't

put ashore. He names the northern Virgin Islands collectively "Las Once Mil Virgenes."

**1520** Caribs stage raids against Puerto Rico from northern Virgin Islands.

**1717** 

Denmark claims uninhabited St. John; 20 planters settle on St. John to grow sugar, cotton, and other crops.


**1731** Annaberg under cultivation; by the 1800s one of St. John's largest sugar producers. Windmill added in the 1820s or 1830s.

**1733** Plantations total 109 (21 sugar). Slaves mount November 23 pre-dawn attack on Fort Frederiksvaern in Coral Bay, kill the soldiers, and launch a carefully orchestrated slave rebellion. (See page 68.)

### St. Croix

**2500 B.C.** Archeological evidence shows migratory South American hunter-gatherers in the Virgin Islands.

**1425** Caribs reach here in their westernmost territorial expansion.

**1493** 

Columbus, on second voyage, names the island Santa Cruz ("Holy Cross"). Crew members skirmish with Caribs at Salt River Bay.

**1509** Ponce de León, first governor of Puerto Rico, extends administrative influence to St. Croix through agreement with its Carib chiefs. Slave raid on St. Croix by Diego de Nicuesa breaks the truce.

**1511** Carib warriors from St. Croix support Tainos in general uprising in Puerto Rico.

**1512** King Ferdinand I of Spain issues *Cedula* ordering

extermination of all Caribs on St. Croix.

**1587** John White and English colonists bound for Virginia stop at St. Croix; one nearly dies from tasting poisonous manchineel fruit. From a distance they see very few "savages and divers[e] houses."

**1590** A French explorer notes that the island is completely depopulated.



as in most of the Caribbean, disappeared and left no written traditions and few physical traces. Today's populace reflects more than 500 years of migrations. Many of the people who came to these islands from around the world were forced, indentured, or bonded. **Note:** *Entries in italics below refer to all three islands.*



Denmark



Knights of Malta



Spain



Netherlands



England



France


losses total 11 million rigsdaler.

**1807-1815**  *Second British occupation during Napoleonic Wars.*

**1808** British abolish slave trade; build Ft. Cowell on Hassel Island to protect Charlotte Amalie harbor.

**1810** *Beet-sugar process developed in Germany por-*

*tends future competition for cane sugar.*

**1815**  *Islands returned to Danish sovereignty.*

**1820** *Decade-long, region-wide economic depression.*

**1825** *Last pirate ship in West Indian waters captured.*

**1830** Impressionist painter Camille Pissarro (1830-1903) born in Charlotte Amalie July 10. His career in art began here, not in France.

**1834** *Social equality between Free Blacks and Whites decreed.*

**1838** *Ordinance in Danish Virgin Islands prohibits selling slaves in public market places.*

Revolt quelled six months later with French aid from Martinique.

**1749** Moravian Brethren begin missionary work on St. John. Build first church at Emmaus in Coral Bay.

**1754** Bethany Mission founded.

**1766** Cruz Bay established. The Battery is built and

armed to protect the growing village.

**1780-1800** Plantations make major shift from cotton to sugar; trade moves from Coral Bay to Cruz Bay.



**1804** Slave population peaks at 2,604.

**1820-1826** *Sugar production peaks at 1.1 million pounds per year.*


**1844** Annaberg School, for slave children, opens on St. John. Moravian brethren teach classes in English.


**1847** *King Christian VIII decrees a 12-year plan for "graduated emancipation."*

**1848** *Emancipation of slaves in Danish West Indies, July 3.*


**1642**   English and Dutch each attempt settlements, fight; Dutch end up in control of the island.

**1643** First record of African slave presence.

**1645**  English subjugate and expel the Dutch and their French Huguenot allies.


**1650**  Spanish attack and expel the English. A Dutch incursion is repulsed, but the French expel the Spanish and start a colony.

**1655**  St. Croix governed by French chapter of Knights of Malta.

**1665**  French crown takes back island. Main settlement moves from Salt River Bay to Bassin, future site of

Christiansted. Eighty plantations grow tobacco, indigo, cotton, sugar, and food crops.

**1696** French colonists and slaves removed to Sainte Domingue (now Haiti) because of disease.

**1733**  Denmark buys St. Croix from France—the first peaceful transfer of ownership of a West Indian island.

## Timeline: U.S. Virgin Islands

**1839** *Compulsory education decreed for slave and Free Black children.*

**1844** *Danish statute abolishes poll tax, gives slaves Saturdays off, and requires observance of Sundays.*

**1867** First U.S. attempt to purchase St. Thomas and St. John; major earthquake and tsunami affect all the islands.

**1871** Seat of government in islands moved to St. Thomas.

**Mid-1800s** Sugar production and population start to decline.

**1852** St. John, St. Thomas one voting district in new assemblies.

**1890-1940** Producing Bay Rum oil assumes major economic importance, chiefly at Cinnamon Bay and Coral Bay distilleries.

**1901** St. John population is 925.

**1734** St. Croix settled by Danish colonists from St. Thomas.

**1735** Christiansted established and named for King Christian VI of Denmark-Norway.

**1746** Slave revolt fails.

**1747** Building code adopted for Christiansted is the first in the West Indies.

**1752** Frederiksted established, named for King Frederick V.

**1872** Telegraph links St. Thomas and Europe.


**1879** Bay rum manufacturing begins in St. Thomas.

**1902** *Second U.S. attempt to buy Danish West Indies fails.*

**1916** *\$25 million U.S. offer for Virgin Islands accepted.*

**1917**  *On Transfer Day, March 31, U.S. flag replaces Danish flag. U.S. Navy administers the islands.*

**1908** Last operating sugar factory ceases production at Reef Bay.

**1917**  *On Transfer Day, March 31, U.S. flag replaces Danish flag. U.S. Navy administers the islands.*

**1953** Total of 14 jeeps registered on St. John. To save its peaceful lifestyle the administrator proposes "limiting the number and size of motor vehicles on the island."

**1755** *Christiansted designated as capital of Danish Islands in America.*

**1759** Abortive slave revolt ends in brutal public executions.

**1764** The golden age of sugar agriculture on St. Croix begins.

**1771** Royal Danish American Gazette, first newspaper in the Virgin Islands, is published.

**1922** Nine passenger ships call at Charlotte Amalie.

**1924** Rothschild Francis promotes Organic Act to create a single legislature for the islands. Such a bill is introduced in the U.S. Congress.

**1930** Pan American Airlines serves St. Thomas from New York City.

**1931** *Civilian government established under the U.S. Department of the Interior.*

**1956** Virgin Islands National Park dedicated December 1. Laurance S. Rockefeller bought the land and donated it to establish the park.

**1962** 5,650 acres of submerged lands added to Virgin Islands National Park to protect marine features like coral reefs and seagrass beds.

**1976** Virgin Islands National Park designated a Biosphere Reserve, as a Caribbean ecosystem worthy of preservation.

**1776** First foreign salute to the American flag fired from Fort Frederik, Frederiksted.

**1848** Slave revolt in Frederiksted culminates in emancipation.

**1849** *Provisional Labor Act adopted to ensure continuation of plantation system.*

**1852** *Colonial Law establishes first legislative assemblies.*

**1877** First central sugar factory set up by colonial government.

**1936** *Organic Act defines federal-territorial relationship.*

**1950** *Morris F. deCastro appointed first native Virgin Islands governor in modern times.*

**1952** *U.S. Congress adopts Revised Organic Act; territorial government replaces municipal government.*

**1963** College of the Virgin Islands, first school of higher learning in these islands,


tion. The status recognizes the park's role as a preservation and research model for other protected island areas.

**1988** Friends of Virgin Islands National Park founded as a nonprofit partner in the park's mission.

**2001** President Bill Clinton proclaims Virgin Islands Coral Reef National Monument of 12,708 acres of federally owned submerged lands off St. John.

**1878** Major labor uprising, the "Fireburn," damages or destroys two-thirds of sugar plantations.

**1915** First labor union in the Virgin Islands established; calls general strike in 1916. *The Herald*, first local newspaper free of government subsidies or censorship, is published.

**1917**  *On Transfer Day, March 31, U.S. flag replaces Danish flag. U.S. Navy administers the islands.*

opens St. Thomas campus. (Today it is the University of the Virgin Islands, with campuses on St. Thomas and St. Croix.)

**1970** *First election of governor and lieutenant governor held. Dr. Melvin H. Evans is first black elected as a governor in the Virgin Islands and in the United States.*

**1972** *The islands' first Congressional delegate Ron de Lugo elected.*

**1978** Congress authorizes adding Hassel Island to Virgin Islands National Park.

**1999** Nearly 900 cruise ships call at Charlotte Amalie.

**1934** Homesteading program to help establish independent small Black and Hispanic farms begins. "New Deal" Virgin Islands Company (VICO) set up to revitalize St. Croix sugar and rum industry.

**1952** Virgin Islands National Historic Site, later Christiansted National Historic Site, established.

**1961** President John F. Kennedy proclaims Buck Island Reef National Monument.

**1963-1965** Sugar agriculture ceases. Economy diversified by tourism and heavy and light industries.

**1992** Salt River Bay National Historical Park and Ecological Preserve established.

**2001** Buck Island Reef National Monument expanded by more than 18,000 acres of surrounding federally owned submerged lands.







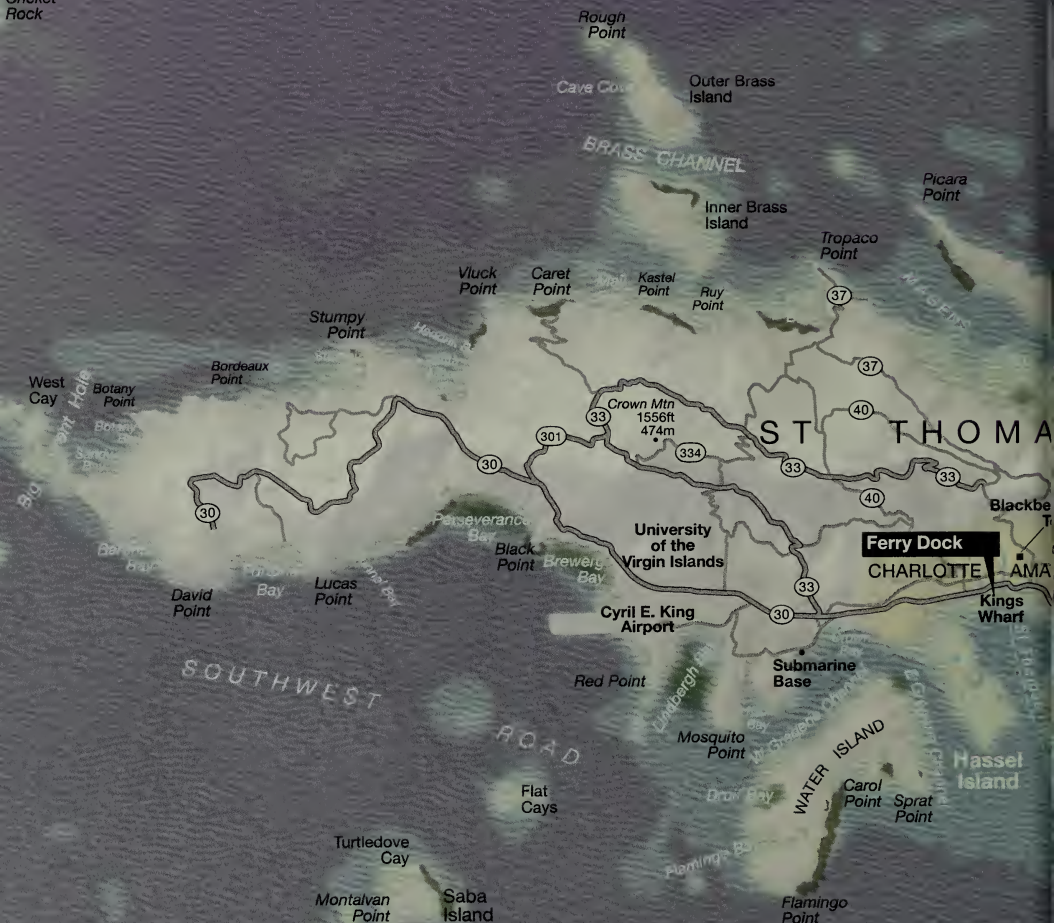


# Part 2

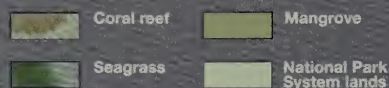
Cricket  
Rock

ATLANTIC

OCEAN



CARIBBEA





# St. Thomas: Getting Your Island Bearings







## St. Thomas: Quick Facts

### Emergency

Call 911. For hospital emergencies call 776-8311.

### Information

Virgin Islands National Park, P.O. Box 710, St. John, VI 00831-0710; 340-776-6201; or [www.nps.gov/viis](http://www.nps.gov/viis)

Virgin Islands Department of Tourism; 340-774-8784; [www.usvi.org/tourism](http://www.usvi.org/tourism)

St. Thomas/St. John Chamber of Commerce 340-776-0100; [www.chamber.vi](http://www.chamber.vi)

Most of Hassel Island, in St. Thomas Harbor, is part of Virgin Islands National Park. Reach it by rental boats, charters, or personal watercraft. No scheduled services are available.

### Transportation

Scheduled airlines serve Cyril E. King Airport on St. Thomas. Inter-island planes serve airports on St.

Thomas, St. Croix, and Puerto Rico; seaplanes go from Charlotte Amalie to Christiansted on St. Croix. Ferries at Red Hook and Charlotte Amalie, St. Thomas, serve Cruz Bay, St. John. Other ferries serve the British Virgin Islands. Check phone book and rack cards in airports.

### Character

St. Thomas is volcanic in origin and therefore hilly. Part of it retains a French influence. St. Thomas is a premier Caribbean port of call for cruise ships.

### Popular Beaches and Reefs

Hull Bay, Magens Bay, Coki Beach, and many others.

### Size and Highest Point

St. Thomas covers 32 square miles. Crown Mountain's elevation is 1,556 feet. Of Hassel Island's 135 acres, 122.4 are part of Virgin Islands National Park.

### Tours and Hikes

Tour St. Thomas by taxi, rental car or boat, charter boat, or helicopter ride.

### Recreation

Snorkeling, hiking, scuba diving, kayaking, windsurfing, parasailing, sailing, trailrides. Check at your lodgings for watersports equipment rentals and for commercial services.

### Lodging

Hotels, guest houses, bed and breakfasts, and resorts. Ask a travel agent, Virgin Islands Department of Tourism, or chamber of commerce.

### Safety Tips

Whether you walk or drive on St. Thomas, be alert to traffic, and especially in Charlotte Amalie. Remember, you need not be on beaches or boats to get a sunburn!

### Frangipani caterpillars

become toxic from the sap of frangipani leaves they eat before they pupate as hawk moths. Their bold caterpillar colors tell birds "eat elsewhere!" Opposite: From sufficient altitude the bold colors of a sinuous *carnival parade* might seem to emulate an undulating caterpillar.













# A Mercantile Mystique

*Caribbean children make the most of a window on their world. Its deepwater port gave St. Thomas an early window on a wide world of international commerce.*

*Preceding pages: As a free port and popular **shore call** for international cruise-ship passengers today, St. Thomas still retains its historically cosmopolitan flavor.*

Its centuries-old role as an international maritime trade center still strongly flavors the character of the Island of St. Thomas. Its roles today as cruise-ship destination and transfer point for trips to St. John, the British Virgin Islands, and St. Croix keep this character vivid still. With tourism and the cruise-ship trade as major drivers of the island's economy, the mercantile mystique continues to hold sway. St. Thomas served as the capital of the Danish West Indies from 1871 into modern times. Today it is the political seat of territorial government for all the U.S. Virgin Islands.

That all this and much more focuses on the deep-water harbor and port city of Charlotte Amalie only underscores the island's enduring aura of international commerce. Free-port status was first granted to St. Thomas in 1764 by the Danish crown. It was retained when the United States bought the islands in 1917. Thanks to this duty-free advantage and its superb harbor, St. Thomas ranks as a world-class shopping paradise.

All this is old hat to St. Thomas, which served as a major station of the English Royal Mail Steamship Company from the 1830s to 1880s and then served as a major headquarters as well for the German Hamburg-Amerika Line and its shipping network up until World War I. In the 1700s a large part of St. Thomas was put to agricultural uses, but the island's steep, volcanic terrain quickly made sugar culture too labor intensive to be economically profitable. Sugar agriculture on St. Thomas became comparatively even less profitable for Denmark when that nation acquired far more cultivatable, non-volcanic St. Croix in 1733. It then made far more sense for St. Thomas to cash in on its deepwater harbor. Historically, a merchant class dominated St. Thomas social life, whereas a planter class played that role on St. Croix. For the past 50 years St. Thomas has increasingly developed large resort hotels. Today



**Hassel Island** is a rocky, cactus scrub-covered island in St. Thomas Harbor off Charlotte Amalie. This detail of a 1717 nautical chart shows today's island as the peninsula it was before the narrow neck of land was excavated in 1865 to create a boat channel—and the island.

Much of Hassel Island is part of Virgin Islands National Park now. The entire island is on the National Register of Historic Places because of its archeological value and its role in architecture, commerce, engineering, industry, the military, and transportation in the 18th, 19th, and 20th centuries. Cowell Battery, on the island's highest point 267 feet above the harbor, saw duty as a signal station into the 1960s.

the island particularly attracts tourists who are attuned to duty-free shopping and a nightlife centered on resort hotel complexes.

Piracy pre-dated free-port status by nearly 100 years, and thrived from 1672 to 1700. During that time some colonial governors openly associated with pirates or privateers. But piracy's role in the life of St. Thomas as a Danish colony came to an end in the early 18th century. Denmark's home government began to regulate the colonial governors more closely, but only open-market piracy ended then. Piracy went on for another 125 years in the Caribbean. The last pirate ship to be captured—hailing from Columbia, South America—fell to a Danish vessel in 1825. Today you will have to imagine the pirates' era by seeing Bluebeard Castle or by reading about Blackbeard's colorful exploits. He was, after all, a denizen of these Virgin Islands when he was in his prime.

Denmark not only clamped down on colonial governors but influenced predominant historical architectural styles of St. Thomas. Many buildings date from 1840 on, after the last of several fires ravaged the port city of Charlotte Amalie throughout the 18th and early 19th centuries. Up to that time most construction had been of wood. The building styles were imports, as were most building materials. However, the nature of islands requires making do with what's at hand, especially when the imports are bulky, heavy materials from distant ports. Historical local fire-resistant building materials are coral and a blue-gray stone so hard and so difficult to work that the early masons inelegantly named it "blue bitch."

Not all is Danish style nor mercantile. One of the more distinctive ethnic groups on St. Thomas are people of French descent who migrated from the island of St. Barts, officially Saint-Barthélemy. Their Frenchtown settlement can be seen from the balconies of cruise ships pulling into St. Thomas's deepwater harbor. They have made their distinctive mark on the St. Thomas landscape and life mostly as small-scale farmers and fishermen. Remarkably, they have quite successfully retained their French identity, heritage, and community to this day and still farm St. Thomas's more arable north shore lands. They were once noted for the weaving of baskets, straw hats, and fish nets. Frenchtown folk still

fish using fish pots, nets, and traps. They still make the traps, but of wire now, not of local materials as in bygone days. Human cultures are rarely static, as indeed these islands' many thousands of years of human habitation everywhere reveal. It is not our specie's nature to stand still amidst a world of constant—some would say relentless—change.

Updating the ancient urge to take to the open waters are the many yachts and charter boats so characteristic of St. Thomas's east end. This island still retains its renown as a charter hub for the Virgin Islands, both U.S. and British, despite growing competition from the island of Tortola.

But the deepwater harbor still reigns as the locus of marine travel here. The sub base in Charlotte Amalie's harbor hosted submarines during World War II. For 400 years European powers jockeyed for control of various West Indian islands. A glance back at the map of the Caribbean basin on pages 8 and 9 shows why. The goal ever and always was to protect and/or control the shipping lanes into and out of the Caribbean Sea and Gulf of Mexico. Beginning in 1867 the United States joined in this jockeying for favorable naval bases in the region. Rumors during World War I that Germany was interested in the Danish islands inspired the United States to purchase the Virgin Islands from Denmark for \$25 million in 1917. The recently completed Panama Canal could not afford to be threatened.

Today, for the most part, St. Thomas's deepwater harbor hosts not sailing ships, submarines, or even today's containerized-cargo behemoths but cruise ships. Sea-borne vacationing goes on year-round now but peaks from November to April. The St. Thomas harbor and ship docks can accommodate up to a dozen cruise ships. At any one time this might include four large ships of 2,500 passengers each and six or seven smaller vessels—for a combined cruising population of 18,000 or more people on a big mid-winter Tuesday, Wednesday, or Thursday. That figure does not include the cruise-ship crew members who were also "born-to-shop" in the free port of St. Thomas in their hours off.

With its busy international airport, St. Thomas is also a logistical hub for comings and goings whose ultimate destination may be St. John, mostly via public ferries, or St. Croix by commuter flights. So,

*Also known as **Blackbeard**, Captain Edward Teach was one of many pirates and privateers who frequented St. Thomas between their forays. Piracy's heyday was late in the 17th century, when some colonial governors conspired openly with the pirates. European monarchs reined in their governors about 1700, but piracy persisted in the Caribbean until 1825. Blackbeard's Tower on St. Thomas, built in 1678, probably never played host to Blackbeard. Certainly Bluebeard Castle did not harbor Bluebeard, who was only a character in fiction.*







*Magens Bay Fishermen,  
St. Thomas, 1948*

**Fritz Henle**  
was a photographer of international repute. His work helped secure the national park on St. John.



*St. John Ferry,  
1949*

Henle also documented traditional ways of life, including those of the fishing folk of French descent on St. Thomas.

*A legend gave its name to **Bluebeard Castle** (both pages), built on St. Thomas beginning in 1666. Danish troops used its tower for a lookout. The old graves on the terrace hold former citizens, not Bluebeard's murdered wives.*

St. Thomas is a port of call for many splendid things in addition to its own scenery. Among these are the animated faces of school children with whom you may find yourself traveling on a public ferry as they commute between their homes on St. John and their schools on St. Thomas. That school uniforms cannot mask the rich diversity of their multiple cultural heritages is yet another vivid reminder of the real people, real places, and real stories that these jewel-like tropical islands embody.







## Recreation and Cultural Activities on the Islands

Beaches, weather, and warm water draw people to the Caribbean. Once you are here the evidence of cultures, past and present, surrounds you. To kick off your time at Virgin Islands National Park, take a taxi tour of St. John. Catch a safari bus at Cruz Bay to the top of Coral Bay Overlook, 1,080 feet above the sea. You'll find panoramic views of the islands, waters, and offshore cays and see the British Virgin Islands. You'll stop at

beaches, pass the crumbling walls built of rock, brick, and coral that recall the changes these islands have witnessed. Visit Anna-berg sugar plantation to learn about the work of planters and slaves and, later, subsistence farmers and fishermen on these isolated islands. Check each park's scheduled activities for special cultural events like craft demonstrations, drumming, and plays and storytelling.



Schoolgirl in uniform



Palm Sunday procession, Christiansted, St. Croix

## Island Cultures

Discover these islands' rich mix of cultures. Music is important, ranging from quelbe, steel pan, reggae, calypso, and rock-and-roll to classical music. Carnival time corresponds with the Fourth of July on St. John and Christmas time on St. Croix and is in late April on St. Thomas. Try some conch paté, coconut tart, fungi (a boiled mixture of corn meal and okra), or salt fish. Talk with taxi drivers and shopkeepers, remembering to wish them the time of day.



Mocko Jumbi

In Christiansted, St. Croix, visit Fort Christiansvaern, the Steeple Building museum, Scale House, and other reminders of the daily lives of the whites who ruled these islands in the 18th and 19th centuries. Ask about commercial tours of St. Croix, visiting St. George Village Botanical Gardens, Whim Great House, Fort Frederik, and the scenic drive. Relative Danish religious tolerance that began in the 1750s accounts

for the Reformed Dutch, Moravian, Anglican, and Roman Catholic churches in addition to the Danish State (Lutheran) church. At Salt River Bay you can stand in the first place under the U.S. flag where crew from Christopher Columbus's fleet put ashore, in 1493. Concessioners offer day trips from Christiansted to Buck Island Reef National Monument for snorkeling or scuba diving in the marine world of the colorful coral reef.



Sailboarding is a recent favorite



Hiking trails in the mountains, St. John



Riding through the past, Frederiksted, St. Croix



Exploring the bays and shorelines, St. John



[illegible]

**Virgin Islands Coral Reef National Monument was created in 2001 by presidential proclamation from 12,708 acres of federal submerged lands.**

# St. John: Virgin Islands National Park and Coral Reef









## St. John: Quick Facts

### Emergency

Dial 911. A health clinic is at the intersection of Routes 104 and 10, five minutes from Cruz Bay.

### Information

Virgin Islands National Park and Virgin Islands Coral Reef National Monument, P.O. Box 710, St. John, VI 00831-0710; 340-776-6201; or [www.nps.gov/viis](http://www.nps.gov/viis)

Friends of Virgin Islands National Park  
340-779-4940  
[www.friendsvinp.org](http://www.friendsvinp.org)

Virgin Islands Department of Tourism, 340-776-6450  
[www.usvi.org/tourism](http://www.usvi.org/tourism)

St. John/St. Thomas Chamber of Commerce  
340-776-0100  
[www.chamber.vi](http://www.chamber.vi)

Cinnamon Bay Campground 800-223-7637 or 340-776-6330

To go to the National Park Service Cruz Bay Visitor Center, bear left at the end

of the public dock and follow the waterfront, a five-minute walk. No general park entrance fee, but fees are charged at Trunk Bay and Annaberg Plantation.

### Transportation

Tour the park and St. John by taxi and safari tours, rental vehicles, guided ranger hikes, or hiking trails. Taxis from Cruz Bay serve lodging areas and beaches. Buses run between Cruz Bay's ferry dock and Saltpond Bay via Coral Bay. Ferries from Cruz Bay serve Red Hook (20 minutes) and Charlotte Amalie (45 minutes) on St. Thomas, 340-776-6282. Driving time (in minutes) from Cruz Bay to: Hawksnest Bay, 10; Trunk Bay, 15; Cinnamon Bay, 20; Annaberg, 25; Coral Bay, 30; Saltpond Bay, 40; and East End of island, 50.

### Character

Greet strangers with the time of day. Local custom and ordinances require wearing a shirt or cover-up in town. Bathing suits alone are not acceptable. Virgin Islands law prohibits public nudity. The island is a mix of national park land and

private land. Respect owners' privacy.

### Popular Beaches

Hawksnest, Trunk, Cinnamon, Maho, and Francis bays. (*Watch valuables on beaches while swimming.*)

### Size and Highest Point

St. John covers 20 square miles. The national park is 9,485 acres terrestrial (authorized) and 5,650 acres marine. Bordeaux Mountain's elevation is 1,277 feet. The national monument is 12,708 acres of submerged lands.

### Tours and Hikes

Taxi-tour times, round trip from Cruz Bay (in hours): Trunk Bay with snorkeling, 3; Annaberg Sugar Mill with sightseeing, 3; and Reef Bay Trailhead with round-trip hike (hail a taxi on Centerline Road for return to Cruz Bay), 6. Hiking time, round trip: to closest beach (Salomon or Honeymoon) with swim, 3.

### Recreation

Snorkeling, hiking, scuba diving, kayaking, windsurfing, sailing, and boating. Rent watersports gear at Trunk and Cinnamon bays.



*Part of a pottery vessel's handle, this **adorno** is from the Taino culture. **Ram Head** (opposite), at St. John's dry southeast side, is cooled by the trade winds.*



*Square Away*

**Shari Erickson**  
is one of many contemporary  
artists who try to capture  
everyday island life.



*Tardy*

Erickson celebrates saturated, primary colors and the islands' intense, tropical sunlight.





# The One Biosphere Reserve In the Lesser Antilles

*Star coral is the most common reef coral in the Caribbean at depths of less than 60 feet. In deeper water it flattens out more—to maximize its ability to capture light. Light feeds the algae that grow inside the coral in a symbiotic relationship with it. Algae produce the oxygen a coral requires to live. They also enhance the ability of the coral to produce its skeleton.*

*Virgin Islands Coral Reef National Monument was proclaimed in 2001 from 12,708 acres of federally owned submerged lands off the island of St. John. This new area, administered by the National Park Service, protects coral reef and mangrove habitat crucial for the biological diversity of the entire Caribbean.*

Its steep volcanic terrain made St. John one of the last West Indian islands to be cultivated by Europeans. When the Danes came over from St. Thomas in 1717, St. John was not inhabited. The Tainos formerly living here had disappeared. Archeologists have been trying to pinpoint when they left. Why they left remains even more of a mystery. Perhaps Caribs drove them off and then did not stay themselves. Archeologists have been working Cinnamon Bay beach to document both pre-1493 Taino and colonial-era village sites before beach erosion and rising sea level destroy their artifacts. A 200-year gap in habitation no doubt all but erased the impacts of Tainos on the larger island environment.

Some changes that the Tainos wrought remain. Although they gathered much marine life for food, they did introduce two mammals to St. John as food animals: the hutia (originally a Bahamian relative of the South American nutria), and the agouti, a member of the rat family. These animals may have had impacts on the island's ecological dynamics. Mostly plant-eating, the hutia also ate some small invertebrates and reptiles, which may not have adapted to its predation. The Tainos also introduced their staple food plant manioc, which was processed as cassava by leaching out its poison. Manioc does not naturalize but dies out if human cultivation ceases.

Because it was small, isolated, and undeveloped, St. John was where the newer and more rebellious slaves from Africa would be taken to be broken in. Some St. John planters were absentee landlords living on St. Thomas, and their St. John holdings were run by overseers. Working conditions were more brutal and difficult for slaves here.

Despite the plentiful, haunting evidence of the Danish sugar plantations still to be seen on St. John, terrain has ultimately defined how humans interact with this island. The evidence of prehistoric human settlement here means that the island once had





*As you travel from Cruz Bay on St. John's west end to Ram Head, its southeastern peninsula, the vegetation changes dramatically. Interior mountains are characterized by moist, **subtropical forest** (above).*

*Island forests now contain over 800 plant species. These are a mix of native species and many exotic species—those that people have introduced from other islands, the mainland, and continents. We may never know what the native plant life was like on St. John.*

year-round sources of fresh water like dependable springs or streams. The Tainos evidently did not dig wells, desalt sea water, or collect rainfall in catchment basins—or archeologists would certainly know if they did. No doubt the lush tropical forests collected the rainfall then. The forests stored that water in the deep, root-held humus soil formed over centuries by the decay of the dense forest canopy's fallen leaves. The mountain forests released the stored moisture slowly throughout the year, thus keeping springs and streams vibrant year-round. As the soil becomes built up again, it becomes almost peat-like, spongy, and absorbent.

Cutting down tropical forests turns out to be double trouble. It not only wipes out natural water storage but can actually decrease the rainfall. When the land dries out after the forest is removed it heats up and may cause decreased precipitation. Prevailing winds from the east-southeast flowing over St. John have their air cooled enough to precipitate some of its cargo of moisture as rainfall on the island's lee side and its interior. Bordeaux Mountain is part of this pattern, which explains why St. John's west end is so moist, while its east end is semi-arid. On such a small island this dramatic ecological variation is remarkably noticeable. The moist forests of St. John grow the West Indian locust, hogplum, and yellow prickly trees. Trees of the island's dry-forest include lignum vitae and black torch.

The southeast corner of the national park at Ram Head is anything but moist tropical forest. Its low, scrubby vegetation is dwarfed by aridity aggravated by its open headland exposure to drying winds. St. John has some of the best examples of dry tropical forest remaining in the Lesser Antilles.

Rising rapidly and steeply from sea level, St. John's terrain offers many microclimates and distinct ecological niches. This favors the biological diversity of an abundance of plant species. National Park Service specialists in natural resources management watch closely how the now-protected natural systems recover after centuries of having their internal dynamics disturbed by agriculture, introduction of exotic species, former farm animals gone feral . . . the list is a litany. Indeed, much that is ecologically amiss in today's Caribbean could be said to have begun with the Spanish explorers' assumption



that nature existed to be exploited. We still seem to daydream about nature as something that is especially adapted to human needs and wants. Our urge, if unrestrained, would make all landscapes artifacts of human desire. However, the biological diversity of the tropics proves this unimaginative by comparison. Our 500-year-long encounter with Caribbean natural history turns out to be not so much a discovery as a slow awakening.

The first European naturalists to study the terrestrial Caribbean region encountered its western perimeter, the Central American land bridge, in the first half of the 1500s. They were overwhelmed by the forest's leafy unfathomability. Now, St. John's protected park area struggles to reclothe itself with its former forests through what a modern naturalist calls "the roller coaster of diversity."

Gonzalo Fernández de Oviedo y Valdéz and his philosophical rival Bartolomé de Las Casas were contemporaries in the first half of the 1500s. Neither could know that rain forests resulted from 500 million years of life diversifying and adapting to its environment—the qualities national parks are now meant to protect. Oviedo and Las Casas held very different views of the worth of American Indians. Las Casas became an outspoken opponent of the enslavement of Indians, but such opposition unwittingly led to the introduction of enslaved Africans to the New World in large numbers.

Baffled by the "great numbers" of trees, Oviedo called the dense forests "a vast and hidden ocean, for though it can be seen, most of it is unknown." Overwhelmed by their seemingly endless variety, he dismissed tropical lizards as an almost infinite subject. Neither Oviedo nor Las Casas possessed the framework for a sense of time deep enough to appreciate the vast differences between the natural history of Europe and that of the Caribbean.

Writing in 1722 the Dominican friar Francisco Jimenez strongly sensed the differences. He also praised the Indians as "scientific about the animals of the forest." Who knows what great and intimate knowledge of St. John's natural history disappeared with the Taino's abandonment of the island? In the 1930s a zoologist working among Central American village farmers found that their descriptive knowledge of even rats and spiders routinely surpassed



*On windswept peninsulas like Ram Head, cacti and other **arid-lands plants** replace the forests of the island's interior. The constant winds would dry out plants that are not adapted to these desert-like conditions. Escaped slaves reportedly got their drinking water from cactus plants while living in hiding after the 1733 slave revolt.*

## Plant Life: Greatly Changed, but Traditional Uses Remain

The plant life of the Virgin Islands has been greatly altered in the past 500 years. Island residents who were here before Columbus (but had disappeared from St. John before 1500) had some impacts on some parts of the landscape. They cleared moister valleys for farming and may have introduced some plants, such as the genip and the kapok tree, whose buttressed trunk is shown

below. Yet these people's small populations and low-technology ways of life did not intrude on steep interior forests or the arid coastal scrublands. European development of the islands—beginning in the mid-1600s on St. Croix, the late 1600s on St. Thomas, and the early 1700s on St. John—rapidly destroyed all the ancient forests. Planters cut trees to make way for cotton and sugar.

### Traditional Uses of Plants

Many wild plants of the Virgin Islands are sources of widely-accepted traditional bush medicines and food. Plants provide remedies that strengthen the immune system, cure sickness, remove internal parasites, or cast off evil spirits. Active agents in many such plants are now identified and are sources of today's medicines. The oral traditions of bush medicine have been documented recently to preserve them. Tamarind trees (far left) came from India. Pulp from the seed pods flavors a drink, curries, and preserves. Calabash trees (left) provide nectar for honey bees and herbals for a purgative, to resist skin poisons, and to treat diabetes, coughs, and colds.



Tamarind



Calabash



Kapok Tree

Hundreds of non-native plants were introduced. In many locations large quantities of topsoil and humus disappeared once the forests had been cut down. The topsoil was parched by the hot tropical sun and then washed away by heavy rains. Today extensive development continues in much of the Virgin Islands, and many ornamental plants have been introduced to the islands in

modern times. However, in Virgin Islands National Park, early successional phases of forest regrowth are apparent. Taller trees that form the canopy layer of the evergreen forests on St. John include hogplum, West Indian locust, yellow prickly, monkey pistol, mango, and genip. Guavaberry, false coffee, hoop vine, and anthuriums grow in the forest understory.



Flamboyant Flower



Century Plant



Eyelash Orchid



Lobster Claw Plant



## Beaches and Cays

The good news for plants on beaches is that there's plenty of light and very little competition, as this photo of Trunk Bay and Trunk Cay shows. The bad news includes salt spray and relentless drying sun and wind that would kill most plants, not to mention that sand is poor in nutrients and doesn't stay put for very

long. Seagrape trees help stabilize beaches. On windy beaches they may be stunted, lopsided, or growing horizontally. Wave action forms many beaches, bringing sand from reefs and submerged beach terraces. Storm waves can erode both coral reefs and

shore rocks to make sand, coral rubble, and rounded cobbles (inset) that make up most island beaches. Several parrotfish species also make great quantities of coral sand. Their fused teeth look like parrot beaks, and they use them to scrape algae





from coral that is usually already dead. In the back of their throats the coral gets ground to powder so the parrotfish can digest the edible plant material. The fish then excrete the indigestible skeletons as sand. Some triggerfish do this, too.

Cays (pronounced *keys*) are small, low islands that are made up of rock, coral, or sand. The word may have come from the Lucayan (Bahamian) language.







*Evidence of missionary work performed among the slaves persists in the masonry structure of **Emmaus Moravian Church** now inside the town of Coral Bay. Mission work began on St. John in 1749. Congregations were established at Bethany (1754) and at Emmaus in 1783. A slave preacher, mason, and Moravian helper named Cornelius laid its cornerstone. The date of its completion is not certain. The church is used as a shelter by the community when hurricanes threaten.*

*Opposite: **Miss Felicia Caines** demonstrates the craft of weaving hoop vine into a traditional St. John market basket at Annaberg Sugar Mill. The hoop vine is gathered in St. John forests.*

the skills of all but highly trained European specialists—who developed no such skills until the end of the 19th century. “These people must have perfected their opinions on the subject before Columbus discovered America,” the zoologist wrote. Fixated on finding gold, you may miss the myriad richness staring you in the face.

Clearing tropical forests for agriculture, as Danish sugar planters began to do on St. John in 1717, is deceptive. For a short while the soil is very productive, but nutrients are quickly depleted. It begins to dry and to erode. Volcanic mountain terrain compounds erosion problems. Terracing was used to create level terrain for growing crops. These old terracings are mostly on St. John. Their crumbled dry-wall masonry style is best seen along the Reef Bay Trail and the Cinnamon Bay Loop Trail. Old masonry animal pens or slave-hut foundations are other types of walls seen along trails.

Picturesque masonry and mechanical evidence of the Danish sugar era are rarely far from view on St. John. Indeed, they provide the thematic thrust for the Caneel Bay development of Rockefeller family interests, for example. As such they may be said to have contributed to the Rockefellers’ inspiration to acquire the land they donated to the people of the United States for the creation of Virgin Islands National Park. Subsequent private development on St. John’s non-park lands—greatly speeded up since the 1960s—has had the effect of making the park a biological island within the geographical island.

Basic to the modern ecological view of life is that all things natural are linked or interconnected. If the influence of natural processes abruptly ends at the boundary of a protected natural area, the area ceases to be a living ecological organism. This poses serious long-term problems now even for protected natural areas as large as Yellowstone National Park with its two-million-plus acres.

At Virgin Islands National Park some impacts of the development on non-park lands, while largely unseen to nonspecialists, can have much wider ecological consequences. Construction excavations and road building activities, for example, can create erosional sediments that wash downhill, eventually into the bays to smother the fragile coral reef ecosystems that require clean water to get solar energy.





## Sanctuary for a Hemisphere's Birds

Humans are not alone in flying round trip to the Virgin Islands. So do northern parula warblers and many other birds known as "neotropical migrants." They nest in Canada and the United States and winter in Mexico and points south. Moist woodlands on St. Thomas, St. John, and northwestern St. Croix are wintering grounds for these

songbirds. Undisturbed woodlands, both moist forest and dry forest, are essential for migratory birds but are more and more rare in the Caribbean. Without quality wintering grounds these birds can't nest successfully—or survive. As bird habitat shrinks elsewhere, the forests in these National Park System units and other protected natural areas

become ever more important. Loss of mangrove forest to coastal development has destroyed nesting habitat of white-crowned pigeons, which are locally protected. Recently some have begun nesting in mangroves that are colonizing the shoreline of Ruth Cay. The cay was built off St. Croix with the spoils from dredging.



Smooth-billed Ani



Green-throated  
Carib



Mangrove Cuckoo



Northern Parula



Even ocean-feeding birds like the brown booby (shown underwater from beneath in the

photo at left) need habitat on land for nesting. Although they are small, these islands loom very large in importance to the long-term fates of many bird species. Because they are free of human disturbance and natural predators, small offshore cays may be even more important for seabird species.

American Oystercatcher



Bahama White-cheeked Pintail Duck







*For many years a mystery of St. John has been the **petroglyphs** found just off the Reef Bay Trail. Who carved them? Archeologists today think they were carved by the Taino peoples who lived on St. John from about 700 to the late 1400s. In the 1970s a scholar posited that ancient Africans carved them before Columbus encountered the Americas, but their symbols match designs on Taino artifacts excavated at Cinnamon Bay recently. No reliable way to date the petroglyphs is presently known.*

A great contemporary challenge for the National Park Service and other federal and territorial conservation agencies is to work in partnership with private landowners and municipalities to mitigate and avoid the problems that might otherwise compromise the preservation mission in the national park itself. Much is at stake because the intent of the national park's creation and indeed of the generous donation of Rockefeller lands was to assure protection—forever—of the natural and cultural attractions of a Caribbean-island setting.

Much is at stake for residents of St. John, too, for tourism is the island's lifeblood. And unlike neighboring St. Croix, St. John has no substantial agriculture or industry to supplement its economy. Too much loss of its natural attractions could dramatically alter the economics of tourism.

Marine ecosystems around much of St. John were given additional valuable protection with the proclamation of Virgin Islands Coral Reef National Monument in 2001. This new area, also administered by the National Park Service, includes 12,708 acres of federally owned submerged lands. It protects coral reef, seagrass beds, and mangrove habitat. It will benefit not only the national park and other immediate areas but the tropical marine ecosystem generally. These habitats, now protected, play essential roles in the developmental stages of many plants and animals associated with coral reefs, including fish and crustaceans. Over 25 species of sea birds also feed in the waters of the national monument.

St. John's cultural history also shows that ways of life can and do end. Witness the disappearance of the early Indian cultures and economy and the end of slavery and sugar cultivation. Even the monolithic plantation system's day had come. By the 1850s, many estates had ceased production and had been abandoned. The large agricultural complexes devolved into small freehold plots, scattered here and there about the island. In a century and a half, nature has largely smothered colonial structures in a dense green embrace. Root systems penetrate massive walls and cause them to crumble, returning all to the earth.

Slavery officially ended here with Emancipation, decreed by Denmark in 1848. Its end was hastened

by increasing economic competition from the sugar beet and growing opposition from humanitarian and religious groups. Slavery was also out of keeping with the burgeoning international movement toward expanded political rights.

The seeds of St. John's traditional post-European but pre-tourism economy were planted after the 1733 slave revolt—see pages 68 and 69. Partly as a result of that revolt, slaves were increasingly given use of provision grounds. These were plots on which they had the opportunity to raise their own food. The slaves were given Sundays off to work their provision grounds, which were usually located near the slave villages of plantations here on St. John. However slowly at first, this movement eventually gave rise to a market economy among the slaves—and later to those freeholders of African descent. This economy continued to develop as slavery and the plantation system slipped into history.

The growing market economic system also fostered cultural identity. Because land ownership up to Emancipation changed so frequently on St. John, few Europeans stayed on the island long enough to develop a distinctive local culture. Nor was there any indigenous island culture—because the island had become uninhabited before 1717. Therefore, St. John's island culture developed from its African-descended people and not from Europeans. In fact, St. John's culture largely developed from within during the period from 1850 until the upsurge of tourism in the 1950s.

Although it may be small compared to some other national parks, Virgin Islands National Park contains a significant part of all the lowland and coastal habitat that is protected throughout the West Indies, and it is the only Biosphere Reserve in the Lesser Antilles. The importance of Virgin Islands National Park regionally as a protected natural area must therefore not be underestimated. The cumulative land area of all the Caribbean islands is no larger than the State of Oregon. Yet no part of the Western Hemisphere contains as many vertebrate species per square mile as these islands do.

Rockefeller family interests bought most of what would be Virgin Islands National Park and gave the land to the federal government in 1956 to be designated as a park. In 1962 the park was enlarged to include 5,650 acres of submerged lands. The park is now a **Biosphere Reserve**, recognizing its global significance in protecting biological diversity and representative terrestrial and marine Caribbean environment. In 2001 the proclamation of Virgin Islands Coral Reef National Monument lent further significance to St. John and environs for the region's tropical marine ecosystem generally.

*Pages 72-73: The west end of Mary Point (left) on St. John and Great Thatch Island (in the middle distance), part of the British Virgin Islands, are separated by The Narrows, an Atlantic Ocean channel less than three-quarters of a mile wide. Leinster Bay lies in the foreground here.*

## Natural Resources Inventory and Monitoring

"Those 'animal-plants' which are equipped with a stony, horny, or spongy exterior are generally called coral, and are divided into four kinds," Moravian missionary C.G.A. Oldendorp noted in the 1760s. His are among the earliest known records of nature in the Virgin Islands. The National Park Service and its partners and cooperators inventory and monitor natural resources now. Inventorying tells us

what's there. Monitoring tells us how it is faring. Monitoring the natural resources at national park units here has rapidly altered our image of these islands as pristine environments immune to outside influences. Disturbing trends link the islands to regional and global changes beyond the control of a national park or monument. Most changes are slow, small, and difficult to track: a gradual increase of

algae on a reef, the decrease in plant diversity on a closely watched forest plot, a slow rise in the quarterly turbidity measurements of a formerly crystal-clear bay, a decline in long-term sea turtle nesting activity.

These are only a few situations that may warn of multiple changes taking place in water, on land, or both. First the scientist translates the





language that monitoring techniques speak. Then the park manager acts to restore natural conditions. Census data are essential; numbers are telling. If reef fish keep declining in diversity, size, and numbers, for example, fishing may need more stringent regulation. How marine and terrestrial systems recoup after hurricanes is carefully studied. This helps us distinguish between change

to the environment that is natural and change that is human-caused. Nature's health in and around these islands is linked with this labor-intensive monitoring of plants and animals, especially humans, that call them home. In the inset photo a scientist studies the impacts on coral reefs of sedimentation that is caused by road building. The large photo shows a trumpet fish and sea fan.



## Slave Revolt of 1733

In the pre-dawn darkness of November 23, 1733, a carefully planned slave revolt began as a small group of slaves carried bundles of wood into the Danish fort, Frederiksværn, atop Fortsberg hill, at Coral Bay, on St. John. Concealed inside the bundles were cane bills, a type of short machete. With the element of surprise they overpowered and killed the sentry and

all but one of the six soldiers billeted in the fort. Taking the fort, the Africans fired its cannons to signal that the revolt had begun. The shots signalled the general insurrection and the killing of whites. A contemporary report by Pierre Joseph Pannet of St. Thomas—dated December 4, 1733—suggests that the Africans planned to take the Europeans by surprise

and assert control over St. John. Pannet also wrote of the Africans' resolve to work with other slaves on St. Thomas to bring about "our complete ruin" as well as "that of Tortola." In one of the most successful slave revolts ever in the West Indies, the Africans kept control of St. John for six months and were finally subdued not by the Danes but by



French troops brought in from Martinique. As Arnold R. Highfield and Aimery P. Caron have written, "Virgin Islanders are proudly aware that those distant acts of resistance marked the beginning of their long struggle for freedom and self-determination." Immediate roots of the revolt were many. "The Caribbean was a tremendous devourer of human life," says historian Steven Mintz.

"Mortality was very high." The work was heavy, and men and women worked side by side at it. Death from overwork, malnutrition, accidents involving machinery, cuts, and infections was commonplace. A string of droughts and hurricanes made starvation likely for the slaves. The Danish governor had recently instituted a harsh slave law. Linguist Gilbert A. Sprauve of St. John says that many of

the slaves who led the revolt were recently arrived from Akwamu, a warlike nation in Guinea. The Akwamu men despised field work, seeing it as women's work. They were known at home in Africa as great warriors and skillful negotiators with Africans and Europeans. Often, new slaves would be brought to plantations on St. John to be broken in. In this case it backfired.





## Development of Black Cultural Traditions

It was common in the West Indies to allow slaves, in their limited free time, to cultivate their own provisions on small tracts near the village to supplement the plantation-pro-

vided diet. Slaves on St. John engaged in various subsistence tasks, but, with no real town on the island, no formal weekly market grew up. However, the informal economy encouraged further development of cultural traditions and institutions among the slaves and free blacks. Women from St. Thomas, many of them freed, regularly visited the St. John estates to market goods.

They usually bartered for fowl, fruits, or small livestock—there was little money on St. John. When plantation society collapsed after Emancipation, St. John residents developed a system for shipping cargo—charcoal, fish, and sometimes cattle—to St. Thomas for sale for money. But in the St. John community, barter held sway. As a free port St. Thomas was the commercial hub and





offered a variety of jobs. The women might have market stalls, take in laundry, or work as seamstresses, cooks, bakers, maids, or coal carriers. Men worked as fishermen, cabinet makers, carpenters, blacksmiths, masons, barbers, and tailors. On St. Croix the job market included work as field hands, sugar boilers,

blacksmiths, carpenters, masons, barrel makers, tailors, barbers, shoemakers, farriers, and fishermen. The inset photograph by Fritz Henle, "Bargaining for Bananas," shows an island market in 1948. The hand-colored 1854 lithograph by Emil Baerentzen shows a freeholder's farm on St. John after the Emancipation in 1848.











# Part 4

CARIBBEAN SEA

Salt River Bay  
National Historical Park  
and Ecological Preserve



CARIBBEAN



# St. Croix: Christiansted And Salt River Bay







## St. Croix: Quick Facts

### Emergency

Dial 911, except in Christiansted National Historic Site call 773-1460 between 8 a.m. and 5 p.m. Christiansted has a hospital; Fredriksted a medical clinic.

### Information

Christiansted National Historic Site and Salt River Bay National Historical Park and Ecological Preserve, 2100 Church St., #100, Christiansted, VI 00820-4611; 340-773-1460; or [www.nps.gov/chri](http://www.nps.gov/chri) and [www.nps.gov/sari](http://www.nps.gov/sari)

Virgin Islands Department of Tourism, 340-773-0495  
[www.usvi.org/tourism](http://www.usvi.org/tourism)

St. Croix Chamber of Commerce 340-773-1435

A National Park Service visitor center is at the entrance to Fort Christiansvaern. There is a modest entrance fee collected there for Christiansted National Historic Site only. A park bookstore is in the Scale House.

### Transportation

Scheduled airlines serve Henry E. Rohlsen Airport on St. Croix. Commuter planes serve St. Croix and St. Thomas airports; seaplanes go from Christiansted to Charlotte Amalie. Check airport rack cards and the phone book. Visiting Salt River Bay—it has no park facilities or services yet—requires a car. Take a self-guiding walking tour of Christiansted National Historic Site with the brochure available at the visitor center.

### Character

St. Croix was formed primarily by uplift, not by volcanic action. The island's cultural resources, archeological sites, and preserved colonial architecture are remarkable. Local custom and ordinances require wearing a shirt or cover-up in town. Bathing suits alone are not acceptable.

### Size and Highest Point

St. Croix covers 84 square miles. Christiansted National Historic Site covers

seven acres. Salt River Bay National Historical Park and Ecological Preserve covers 312 acres terrestrial, 600 marine. Mount Eagle is 1,169 feet of elevation.

### Tours

Commercial tours or self-guiding historical sightseeing to Estate Whim and Little La Grange plantation museums, St. George Village Botanical Gardens, Fort Frederik, and Virgin Islands Rum Industries (Cruzan Rum) distillery. Ask at your lodgings, the National Park Service visitor center, or chamber of commerce.

### Recreation Opportunities

Swimming, snorkeling, scuba diving, windsurfing, kayaking, horseback and bicycle tours, and scenic drives. Rent equipment or ask about services at your lodging.

### Lodging

Several hotels and inns in Christiansted are within walking distance of shops, restaurants, and points of interest. Others require use of a car. There are no camp sites on St. Croix.

### Safety

Historic walkways and steps may be uneven. Walk with care. Wear a hat and use sunscreen.



*A Taino chief or shaman would have worn this mask—carved from conch shell about 900—on a cotton belt over his navel to ward off evil spirits. Opposite: The windmill, chimney, factory, and Great House of Estate Whim plantation are must-see features on an island tour of St. Croix.*









# When Sugar Was King

**Fort Christiansvaern** was completed in 1749 and has protected Christiansted's harbor ever since without firing a hostile shot. Its name means "Christian's defense"—for King Christian VI of Denmark-Norway. Some of the captured leaders of the 1733 slave revolt on St. John labored on the fort's initial construction.

The gunpowder magazine is at the far end of the parade ground. The fort and its historical exhibits are central features of touring Christiansted today.

*Preceding pages: Danish neutrality and natural features were keys to the fort's strategic success. So were cannon batteries on **Protestant Cay**—the small island with the harbor master's house—and on the promontory at the right of this view from Estate Mount Welcome. A formidable reef at the harbor's entrance, plus the cannons, would deter marauders. Emil Baerentzen made the original of this hand-colored lithograph in 1854. Its vegetation detail reveals his botanical training. After this trip, he switched his specialty to tropical plants.*

Three successive pottery-making cultures had lived on St. Croix by the time Columbus added the island to a fledgling Spanish empire in 1493. The first seasonal human inhabitants of St. Croix were here 4,000 years earlier. Twenty-seven major American Indian settlements have been unearthed by archeological investigations on St. Croix. At the Salt River Bay site, then occupied by Caribs and their Taino slaves, Columbus and his fleet dropped anchor during his second voyage of exploration in 1493. Salt River Bay marks the first of only two locations now under the U.S. flag that are directly associated with Columbus. (The second is a bay in western Puerto Rico.) The island of St. Croix is the largest of the U.S. Virgin Islands, and today its approximately 55,000 residents equal the population of the island of St. Thomas to the north.

The brief skirmish between Europeans and Caribs at Salt River Bay in 1493 also marks the first documented hostile encounter between the two races. Subsequent reprisals by the Spanish resulted in the depopulation of St. Croix by the late 1500s. In the 1600s various European nations vied to control and colonize the island: the Netherlands, England, France, and the French chapter of the Knights of Malta. No such settlement proved ultimately successful, however, and St. Croix was once again left without human population in 1696.

In 1733 Denmark entered into successful negotiations with the French crown to buy St. Croix and develop it for the cultivation of sugar. The purchase marked the first time that ownership of a West Indian island had transferred by purchase rather than by warfare. The king of France agreed to sell St. Croix because he needed money to finance his father-in-law's ambition to become king of Poland. Denmark, having taken possession of St. Thomas in 1671 and St. John in 1717, finally provided the basis for the permanent settlement of St. Croix.



*Fort Christiansvaern's floor plan, annotated by Danish Army officer P. L. Oxholm in 1779, describes how the interior rooms were used. The rounded water battery faced the harbor. A wedge-shaped ravelin protected the inner gate. Projecting corner bastions were also designed for repulsing ground attacks.*



The Danes located their first settlement on St. Croix on the island's northeast coast. It was built on the site of an earlier French settlement, because the site boasted a harbor adequate for commercial shipping. Named Christiansted, the new town honored King Christian VI of Denmark-Norway. Officials hoped their new town might one day rival Christiana (now Oslo), Norway.

Danish surveyors laid out Christiansted on a grid system and instituted both a building code and zoning. Their work was impressively progressive for its time. Street widths were regulated, easements established, areas zoned commercial or residential, and building materials specified. This urban planning scheme is still visible in today's historic Christiansted. The city's historic architecture matured over a 100-year span. Neoclassical government buildings and residences blend with Gothic Revival churches, combination shop-residences, and shingled wooden cottages. The three residential styles also are artifacts of Christiansted's colonial social structure, as explained on pages 94 and 95, when sugar was still king on St. Croix.

In the first decades of Danish control, the island's economy did not benefit from administrative energy and insight. St. Croix's economy stagnated while the island was governed by the Danish West India & Guinea Company from 1734 to 1754. This was Denmark's royally chartered slave trading monopoly. The company placed too great a burden on planters and merchants by taxing both imports and exports excessively. Its policy required carrying all trade in Danish vessels, which inflated shipping costs. After the Danish crown bought the company's stock in 1754, the island's economy flourished. The royal governor-general established his residence at the new capital, Christiansted. St. Croix had a one-crop economy, however. Everything hinged on its sugar industry, which was at the mercy of market demand for sugar in America and Europe, adverse weather, and wars.

Between 1760 and 1800, the free-trade policies resulted in large profits from sugar, molasses, rum, cotton, and tropical hardwoods generated by Christiansted's international port. With prosperity the population increased. This period became known as the "Golden Age of St. Croix," although hardly so

for the slaves who provided labor on the plantations. In Europe, however, sugar began to be processed from sugar beets after 1810, and cane sugar prices fell off sharply in the 1820s. Irreversible economic decline loomed ahead. After the slaves who worked the cane plantations were emancipated in 1848, labor costs increased. A series of hurricanes and droughts throughout this period merely added momentum to the economic decline.

Eventually Christiansted also lost its status as the capital of the Danish West Indies. A futile attempt in 1871 to soothe inter-island rivalries led to the seat of government being transferred between St. Croix and St. Thomas every six months! This situation was not to be resolved entirely until the United States bought the Danish West Indies during World War I. Under its new flag St. Thomas became the capital of the U.S. Virgin Islands. But today you still find in Christiansted, amidst its wealth of 18th- and 19th-century buildings, picturesque reminders of the former West Indian colonial capital that sugar built.

As you cast your gaze out across Christiansted's harbor, think in terms of naval strategy in the 18th and 19th centuries, and the fort-protected harbor makes immediate historical sense. What your eye may not pick up so readily is how the underwater reef contributed to military strategy in the harbor's defense. A ship could enter the harbor only through a relatively narrow channel through this reef structure. Cannon emplaced on the fort, headland, and offshore Protestant Cay formed a triangle of fire-power handily controlling any hostile ship's attempt to enter.

Built between 1738 and 1749, Fort Christiansvaern exemplifies the strategic roles of Danish fortifications in the Virgin Islands. Here the harbor was defended, custom duties enforced, and internal security provided. The Danes completed Christiansted's harbor defenses in the 1780s. No pirate or privateer risked running its gauntlet of 18-pounder cannon trained on the narrow ship lane. In fact, Denmark relied more heavily on its neutrality in foreign affairs. The cannon at Christiansted were never fired in anger but saw only ceremonial use.

Fort Christiansvaern's landward defenses were aimed at assaults by either hostile European powers or rebellious slaves. Each of the fort's bastions

*This fired-clay figurine from Salt River Bay on St. Croix could represent a **Taino or Carib chieftain** or a **Spanish conquistador**. It probably dates from between the 1300s and early 1500s. If the lined chin piece is a beard, the figurine could be an armored conquistador. Otherwise, it is probably a chieftain in parrot-feather headdress. The prominent navel places the figurine within the Taino and Carib religious views.*





## Taino Culture—and the Skirmish with Columbus's Crewmen

Archeological investigations and early Spanish accounts show that a succession of groups from South America's Orinoco River basin inhabited the Virgin Islands for 4,000 years before Columbus found the Americas. The first peoples were migratory. Then came the Igneri, then Taino or Arawak, and then Kalina or

Carib peoples, who expanded west as far as St. Croix. The large painting recreates the Taino village and ceremonial ball court at Salt River Bay in the 1300s. Tainos dominated this area from 700 until the Caribs conquered and enslaved them about 1425. No other ball court, or *batey*, has been found in the Lesser

Antilles. Two opposing teams kicked or threw a solid rubber ball but could not use hands or feet to stop it. The chief sat at the head of the court. At the left rear of the large painting two women use a hanging device of woven basketry to squeeze cassava to be made into flour by leaching out its poison.







Columbus sent a boat ashore at Salt River Bay, November 14, 1493, to explore the Carib village and to look for fresh water. They took Taino slaves from the village but then met a Carib canoe (inset). The ensuing fight—there was one death on each side—was the first documented resistance by native Americans to European encroachment.



## The Nature of Salt River Bay

The range of human cultures recorded at Salt River Bay reflects continuous use of the area's natural endowments. The deep, carbonate submarine canyon offshore is the only one in the Virgin Islands. Its dynamics bring nutrients to the surface and feed the many species of coral and reef organisms found here.

Stands of all three mangrove species—red, white, and black—fringe the bay. This is the last major natural stand of mangroves in the Virgin Islands in an estuary setting, where fresh and salt waters mix. Mangroves filter runoff from the land and serve as nurseries for fish and invertebrate species. They help

replenish fisheries in the islands' coral reef environments. Snuggled against St. Croix's uplands, the bay's estuary and mangroves (see inset photo) also get nutrients washed into the bay from the land. Some also reach the open marine environment. Both bay and land here also host a variety of land and



Columbus and  
Carib skirmish

Trench-like deep offshore

Coral reefs





marine species, from West Indian whistling ducks and ospreys to threatened and endangered species like the marine turtles and bottlenose dolphins. The Salt River Bay area also has both a rich history and an extensive database of scientific research.





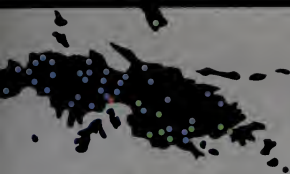
## The Sugar Plantation and Economy

European demand for sugar to sweeten imported tea and chocolate from cacao rose sharply after the 1650s. The craving grew nearly addictive in the 1700s, when the only source for sugar was sugar cane, first domesticated in New Guinea. The West Indies proved ideal for furnishing sugar to North America and Europe. Soils and climate were right, and the islands lay on the trade routes. In these islands

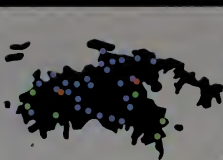
most American Indians had vanished for various reasons, and early use of white indentured laborers failed. Trading for African slaves with inexpensive manufactured goods intensified. Manufacturing, slavery, and sugar became inextricably linked and helped to develop world markets needed for the industrial revolution in Europe and later in North America. Sugar agriculture changed island life dra-

matically. Plantations replaced small farms. Wealth grew at the top of society; misery flourished at the bottom. Map diagrams at right indicate cotton plantations (green) and sugar plantations with horse-driven mills (blue) or windmills (red) about 1800. St. Croix was one of the wealthiest sugar islands, then, but invention of the beet sugar process in 1810 soon caused cane-sugar prices to decline. Plantations were typically 225 to 300 acres, two-thirds planted in cane. Mills





St. Thomas



St. John



St. Croix

crushed the cane for its juice, which was boiled to a moist, brown, crystalline form called muscovado. This was dried in modified barrels that drained off molasses to be distilled as

rum, a product enjoying equal demand and value. The painting by Frederik von Scholten shows the sugar plantation Estate Montpellier on St. Croix in the 1830s.

- Sugar Plantation, Windmill
- Sugar Plantation, Horse-driven Mill
- Cotton Plantation

St. Croix not shown in proper location relative to the other islands.





Erected atop hills to catch the trade winds, conical, limestone windmills crushed sugar cane to extract its juice. Slaves used the tailpiece (shown at left in this cutaway illustration) to steer the blades into the wind. Gears and a drive shaft transferred the power to iron rollers that crushed the cane. The juice flowed from the mill's reservoir, via a trough (lower left), into the boiling house. There the dried and crushed cane stalks, called bagasse, were used as fuel for the boiling process.

Mills symbolized how sugar planters were part farmer and part manufacturer. Operating a plantation involved capital and considerable risk—from market fluctuations, creditors, shipping hazards, drought, and hurricanes.



mounted cannon that fired six-pound projectiles. Embrasures (openings in the surrounding walls) offered some protection for gun crews. These slots had angled sides permitting the guns to be trained or aimed from side to side, to cover a wider area. Stored at the fort for field operations were horse-drawn artillery.

Today at the fort and along the wharf bulkhead you can see some types of muzzle-loading cannon used by the Danes over the course of 180 years. Others are displayed at street corners in the historic district. In these locations their unforgiving bulk, not their former firepower, protected building corners from damage by the large ox carts that transported St. Croix's wealth-producing heavy barrels of sugar, molasses, and rum to the harbor for shipment to international markets.

The Island of St. Croix itself is also rich with varied natural and cultural features far beyond the bounds of its National Park System units at Christiansted and Salt River Bay. At the town of Frederiksted another Danish-era fort guards the island's west end—and accepts cruise ships into its harbor. At this fort in 1776 the U.S. flag was first acknowledged from foreign soil. And an important slave rebellion at Frederiksted in 1848 forced the emancipation of the slaves in the Danish West Indies.

At St. Croix's Salt River Bay area in 1923, Danish archeologist Gudmund Hatt discovered evidence of a major religious and cultural center of the Taino culture. We now recognize this as the only known ceremonial ball court in the Lesser Antilles. The excavated artifacts of the game—like a precursor of soccer—include many petroglyphs or rock art, human sacrificial burials, three-pointed stone *zemis*, and so-called stone “belts.” Whether the belts were trophies or handicaps, we don't know. *Zemis* are figurines of spirits or deities and were used in ancestor-worship. The Tainos were the second of the three pottery-making cultures to settle permanently on St. Croix: Igneri 1-700, Taino 700-1425, and Carib 1425-1590.

The complex at Salt River Bay that pre-dates written history contains some of the most important archeological sites in the U.S. Virgin Islands. It has been the focus of every major archeological investi-



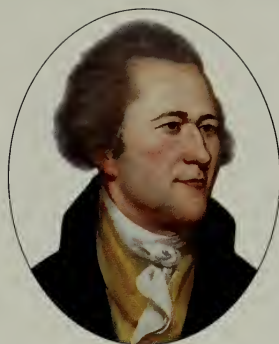
gation on St. Croix since 1880, with subsequent digs taking place in 1899, 1912, 1915, 1917, 1923, 1925, 1935, 1938, 1952, and 1978-1979. Artifacts found in some of these excavations are now in Denmark's National Museum in Copenhagen and in both public and private collections in the Virgin Islands, elsewhere in the United States, and in other nations.

When Columbus and his fleet dropped anchor safely outside the reef at Salt River Bay in 1493, the Caribs had already conquered and enslaved the Tainos of St. Croix. This island marked the westernmost limit of Carib expansion in the Antilles. Irregular warfare aimed at getting captives and plunder was basic to Carib culture. Carib social order was patriarchal but more egalitarian than Taino society. Carib chiefs were not hereditary but were elected based on their leadership or prowess in warfare. And fierce fighters the Caribs were, both women and men, as the records of their encounter with members of Columbus's crew attest.

Four eyewitness accounts of this St. Croix episode survive: Columbus's son Fernando quotes from the Admiral's own journal, since lost; Italian nobleman Michele de Cuneo, a friend of Columbus and leader of the landing party at Salt River; the fleet surgeon Dr. Diego Alvaredo Chanca; and Guillermo Coma.

The admiral sent more than two dozen armed men ashore in the flagship's boat to explore the village on the west bank of Salt River Bay. The men were also to search for sources of fresh water, which the fleet always needed. On a return to the flagship, having "liberated" some Taino women and boys enslaved by the Caribs at the village, the boat's crew encountered a canoe with Caribs (four males and two females) and one or two male Taino slaves. The Carib canoe had just rounded the eastern cape of the bay. Distracted by the sight of the fleet, the Caribs readied their bows and arrows when the Spaniards approached too closely. The Spaniards finally rammed and overturned the canoe, and a fierce but unequal skirmish ensued. There was a fatality on each side.

This hostile engagement was the first documented resistance shown by American Indians to European encroachment. In memory of the Spanish fatality, Columbus later gave the name *Cabo de las Flechas*, "Cape of the Arrows." He had already named the



*Alexander Hamilton was raised in Christiansted by his mother. She ran a small shop there until she died when he was 13 years old. New York merchant Nicholas Cruger recognized that Hamilton was unusually precocious and made him a clerk.*

*Hamilton educated himself by reading. His vivid letter to his father about the 1772 hurricane that devastated St. Croix was published in the Royal Danish-American Gazette.*

*This inspired Cruger to send Hamilton to school in the British North American colonies. Hamilton later served in the Revolutionary War as aide-de-camp to Gen. George Washington, co-authored The Federalist Papers, and was the first secretary of the Treasury for the United States.*

## Christiansted and International Commerce

For nearly 200 years Christiansted's destiny was tied to sugar's fortunes on world markets. At the Christiansted wharf the ship captains, merchants, planters, and slaves from this international commerce came together. Sugar, molasses, rum, and cotton turned great profits from 1760 to 1800, "The Golden Age of St. Croix." New free-trade policies held sway after 1754, when Denmark bought the

charter of its monopolistic Danish West India & Guinea Company and took control of the "Danish islands in America." The wharf also revealed the magnitude of imports that kept the plantation economy running. Clothing, furnishings, building materials, livestock, foodstuffs, agricultural implements, and slaves were imported. Alexander Hamilton cut his financial teeth on this dynamic trade as a clerk. The

Napoleonic Wars blocked St. Croix's access to foreign markets in 1801 and again from 1807-1815. When trade resumed, U.S. markets took on increasing importance—accounting for 75 percent of St. Croix's agricultural exports by 1830. The U.S. purchase of the Danish West Indies in 1917 only formalized, for some people, a long-standing economic relationship. Heinrich Gottfried







Beenfeldt painted this wharf scene in 1815 from the memory of his military service here in the 1790s. H. Petersson depicted the fort and wharf area (inset) from Protestant Cay during a rainstorm out of the west in 1832. Protestant Cay got its name in the late 1600s, when the French ruled St. Croix. Only Roman Catholics could be buried on the island. Protestants would be buried on the cay.





## Christiansted Survey and Building Code

Christiansted was laid out on a grid system beginning in May 1735. The Building Code of 1747, unique for its time, greatly influenced its development. The code was supervised and enforced by government building inspectors. It regulated street width, setbacks, building materials, and commercial and residential zoning. Remarkably, the town suffered only

one major fire in its history, in 1866 on its western limits. The city's architecture developed over 120 years. Early wooden buildings gave way to solid and imposing masonry structures by the 1760s. Colonial government buildings generally followed neoclassical lines (see details), with practical adaptations for the tropics. These included verandas or gal-



### Architectural Details

Craftsmanship and durable masonry are key to the enduring beauty of Christiansted architecture. The four pediments above windows and an arched doorway at right typify the Neoclassical style, which imitated Greco-Roman architecture. Pediments are masonry moldings fashioned from bricks—individually hand-cut by slaves—that have been plastered over. Clockwise from top left, the pediments date from the 1760s, 1770s to 1780s, 1770s to 1780s, and 1790s to 1800. The relative religious tolerance in the Danish West Indies found expression in the variety of architectural detail in some of Christiansted's churches, notably the curvilinear gables of the Dutch and the Gothic Revival of the English.



*Grundriss af Byen Christianstad  
med dens liggende Fort Christianhavn*

leries, jalousie windows to adjust for light and breeze, and hurricane doors and shutters. Two- and three-story townhouses (bottom left), many with interior courtyards, were the residences of well-to-do urban professionals and planters wishing to be near political power and society. Bourgeois merchants worked and lived in two-story shop-residences

(middle left), the masonry ground floor for work and the upper wooden story for living. In the 18th century, rectangular wood-shingled cottages (upper left) in the town's upper tier housed free blacks and poor whites. These 18th- and 19th-century buildings still vividly recall this colonial capital when sugar was king.





## Estate Children and Sunday Market

These so-called "estate children" photographed on St. Croix between 1890 and 1900 successfully mask the obvious joke—that their donkey stands in his traces backwards. This photograph is also unusual for the number of estate children pictured together. Perhaps 85 percent of the black population on St. Croix at this time still worked on the plantations as field

hands. A few worked as household servants or crafters. Although Denmark had ended its slave trade in 1803, Emancipation was not proclaimed until 1848. On January 1, 1849, former slaves began working for regulated wages on the plantations. The lithograph (inset) shows the Sunday Market in Christiansted. This is a contemporary hand-colored version of a

black-and-white lithograph that appeared in a Danish newspaper in 1878. The Sunday Market was an entirely black venue that had its origins in the slaves' weekly day off before Emancipation. Slaves would gather to sell produce raised on their garden plots on their own time, which was very limited. They could keep the proceeds from their sales. Over time, some







slaves were able to purchase their freedom via this venue. Guinea fowl, shown in the lower left of the lithograph, were brought to the West Indies in the 1700s from West Africa. Guinea was the area that is now Ghana. Denmark entered the slave trade later than some other European nations, and Guinea became its sphere of influence in West Africa.





*Slaves expected full emancipation in 1847, but the Danish king set a 12-year phaseout of slavery instead. There were 17,000 slaves and 5,000 free blacks on St. Croix. On July 3, 1848, John Gottlieb, a field hand on Estate La Grange who became known as Moses Gottlieb, **General Bordeaux, or Buddhoe**, led 8,000 blacks in a freedom march to Frederiksted. They demanded freedom, or they would burn the town and the estates.*

*The sympathetic Danish Governor-General Peter von Scholten arrived from Christiansted and declared, as the printed proclamation would say: "All unfree in the Danish West Indies are from today free." Planters and some military men were furious. Von Scholten returned to Denmark to face trial and was stripped of his duties but was later cleared of blame. Despite attempts to protect him, Buddhoe was deported to Trinidad and left penniless.*

island Santa Cruz, "Holy Cross," hence St. Croix. Leaving this island, Columbus sailed north around and collectively named *Las Islas Virgenes* after the legendary St. Ursula and her 11,000 virgin companions reputedly martyred by the Huns at Cologne in the fourth century. Then the fleet sailed off to what is now Puerto Rico, which Columbus named *San Juan Bautista*, "St. John the Baptist."

In 1509 the conquistador and first Spanish governor of Puerto Rico, Juan Ponce de León, entered into negotiations with the Carib chieftains on St. Croix as part of his effort to extend Spanish sovereignty to the island. The Caribs agreed to accept Christianity, stop raiding Puerto Rico, and provide foodstuffs to the Spanish in Puerto Rico. A few months later, however, a Spanish adventurer Diego de Nicuesa raided St. Croix and took off 140 slaves. That led to the Caribs taking part in the 1511 anti-Spanish uprising by Tainos in Puerto Rico. The Spanish crown then decreed that the Caribs of St. Croix—already their name had become linked with unrelenting warfare and cannibalism—should be exterminated. American Indians soon were decimated by the thousands throughout the Antilles. Under intermittent Spanish military pressure from Puerto Rico, St. Croix was rendered devoid of human inhabitation by 1590.

Some 150 years later Salt River Bay became the focus of several European attempts to settle St. Croix. The ensuing frequent change of ownership by force of arms typified European struggles to dominate the New World—in which the West Indies were considered pivotal. European settlers built partly atop earlier American Indian settlements on Salt River Bay's west shore. Fledgling plantations grew cotton, indigo, tobacco, sugar, and staple crops.

Today's only surviving structural evidence of this turbulent period of Virgin Islands history is the triangular earthwork fortification at Salt River Bay. The English started it in 1641. The Dutch completed it the next year. The French called it *Fort Flamand* ("the Flemish Fort") and later *Fort Salé* ("the Salt Fort," although probably for an island governor named du Sal). It is the only fort of its type from this period known to survive in the West Indies, and perhaps in the Americas.

After the mid-1660s the settlement at Salt River

Bay was relocated to St. Croix's northeast coast harbor area then named *Bassin* ("the Harbor"). This later became the town of Christiansted after Danish colonization began in 1734. However, from the mid-1700s well into the 1800s the Salt River Bay area continued to play a significant economic role on St. Croix. Nearby sugar plantations used the bay as an unofficial port—that is, for smuggling sugar, rum, and molasses. In the 1780s the Danish West Indian government felt compelled to build a small cannon battery and customs house on the bay's west shore to reduce its revenue losses from this illegal activity.

Salt River Bay's significance as a protected natural area today rivals its vast cultural significance.

Lining the shores of the bay is one of the largest remaining mangrove forests in the Virgin Islands. Mangroves provide a transitional niche between the ecological worlds of land and water. And like most such transitional niches, the mangrove forest harbors a surprisingly rich variety of life forms. In fact, this 912-acre park and ecological preserve area is home to 27 endangered or threatened plants and animals. While small in area it is significant to the total biodiversity of St. Croix and the Virgin Islands.

Distinctive prop roots make red mangroves look like tall shrubs or small trees set on contorted stilts. These tangled roots help stabilize shoreline conditions and control sedimentation and erosion. Here juvenile fish hide and grow so that they can move out to the reefs and beyond as adults. With colorful algae, sponges, anemones, barnacles, and oysters encrusting its roots, the mangrove also provides food for these juveniles. And so the mangrove forest serves as a nursery for the reefs and nearby seagrass beds. In doing so it also provides food for herons, brown pelicans, and egrets and some large fish such as snapper, barracuda, and tarpon.

As a protected natural area, Salt River Bay's value and significance cannot be calculated based on its size alone. This small area supports and influences multiple plant-and-animal communities far beyond its human-drawn boundary.

*Next pages: This truck garden with its piped-in, drip irrigation system exemplifies St. Croix's drive to grow more of the food to be consumed here, despite undependable rainfall. The island has had no large-scale agriculture since the demise of sugar. A strain of beef cattle, Senepol, developed here in the 1930s is exported as far away as Australia. The red-brown cattle are heat- and drought-tolerant.*









# Part 5

WESTERN  
REEF

West Beach

"G"



Trail

Vessel approach from St Croix

BUCK ISLAND CHAN

Buck Island Reef National Monument  
(see boundary extent on the St Croix map)



# Buck Island Reef: Underwater Trail



North



0 0.1 0.5 Kilometer  
0 0.1 Mile 0.5

Buck Island Reef National Monument was expanded by 18,135 acres from federal submerged lands by presidential proclamation in 2001.



Coral reef



Seagrass



Anchorage



Scuba area



Picnic area



Toilets



Buoy



Regulatory marker



## Buck Island: Quick Facts

### Emergency

For Buck Island Reef National Monument dial 911; use Channel 16 Marine Radio; or call 340-773-1460 from 8 a.m. to 5 p.m.

### Information

Buck Island Reef National Monument, 2100 Church St., #100, Christiansted, VI 00820-4611; 340-773-1460; or [www.nps.gov/buis](http://www.nps.gov/buis)

A National Park Service visitor center is at the entrance to Fort Christiansvaern. No entrance fee for the national monument, but most visitors pay to visit it by a concession-operated boat tour. The island is closed to visitors at sunset.

### Transportation

Concessioners offer half-day (three-hour) or full-day (five-hour) sail- or motor-boat trips to the park. Most allow 60 minutes for snorkeling the underwater trail. For a list of concessioners call 340-773-1460. Before taking your own boat, get the regulations from the National Park Service visitor center in Christiansted. Vessels over 42 feet long

must anchor off West Beach and visit the underwater trail by dinghy. Anchoring is prohibited in the lagoon and at the underwater trail: all boats must pick up a mooring. Back in town, remember that local custom and town ordinances require wearing a shirt or cover-up while in Christiansted. Bathing suits alone are not acceptable.

### Accessibility

A concrete pier, used for operations and passenger drop-off and pick-up only, gives wheelchairs access to the island's south shore.

### Character

Buck Island is uninhabited. The reef system is among the Caribbean's best. Reef, waters, and island are protected habitat for endangered and threatened wildlife.

### Popular Beaches and Reefs

West Beach offers swimming and a place to practice snorkeling. The underwater trail for snorkeling offers spectacular reef viewing. Scuba diving is restricted to the designated area only.

### Size and Highest Point

The national monument includes nearly 19,000 acres of federally owned submerged lands. Buck Island itself is 6,000 feet long, a half-mile wide, and covers 176 terrestrial acres. The island's peak is 329 feet in elevation.

### Recreation

Snorkeling, swimming, sailing, scuba diving (in the designated area only), hiking, and birdwatching. A trail over the island takes about 45 minutes to hike. Wear shoes and bring water.

### Overnight Stays

Overnight stays are allowed on privately owned boats anchored off West Beach, within the monument's authorized boundary (two-week limit). No camping on Buck Island. A private boat marina 1.5 miles from Buck Island offers docking, fuel, and bathing facilities.

### Safety

Don't stand on or touch coral. It breaks easily and gives nasty scrapes and cuts. Use sun protection. See the hazardous plant warnings on page 112.

*Say hello to this small **land crab**. It lives in crevices. Buck Island has a similar ghost crab that burrows in the sand and runs sideways. Opposite: Day-sailors practice-snorkel at Buck Island's west beach before sailing to the reef.*













# Of Sea Turtles and Corals

***French grunts** are night-feeding reef fish that can be seen by day congregating in large, mostly inactive schools. Their big eyes that see well in dim light give away their nocturnal habits.*

*Preceding pages: Many other night-feeding species of reef fish are red and also have big eyes, such as the squirrelfish known as **blackbar soldierfish**. By day you may find hundreds packed together resting in caves or under ledges.*

Compared to their 500-million-year-old cousins in the Indo-Pacific region, Caribbean coral reefs, at 8,000 to 10,000 years old, are mere newborns. Nevertheless, these many-colored, highly diverse communities might inspire humans to interact more cooperatively. Perhaps this helps explain the natural magnetism of Buck Island Reef National Monument for ardent seekers of marine recreation.

Two-thirds of Buck Island is bordered by elkhorn coral barrier reef. Thirty-foot-tall branching elkhorn coral formations lie scattered along the outside of the forereef. They rise from the seabed as much as 40 feet below, reaching nearly to the water's surface. Coral formations and their colorful reef fish residents are within grand view of snorkelers in the waters of this magical area. Not to be missed, the underwater trail here is the destination of concessioner-operated snorkel trips.

World-wide, coral reefs are sharply delimited by conditions that include water temperature, depth, and clarity, as the map and story on page 114 describe. In the U.S. Virgin Islands coral reefs are threatened by development, road construction, and overuse on the largest islands. Silt from runoff can shade or coat corals—reducing the amount of sunlight they receive and disrupting feeding—and so weaken or kill them. This is not so much the case on Buck Island, which is protected from development. This underscores this national monument's importance as a protected natural area and sanctuary for both terrestrial and marine species.

Buck Island and its surrounding, reef-supporting waters became a national monument in 1961 by presidential proclamation. The island, which is 6,000 feet long and a half-mile wide, had been previously protected since 1948 by the Virgin Islands government as a territorial park for recreation. Evidence of human presence—a significant midden of conch shells found on the west shore—dates back to about

## Underwater Life

Colors and themes in the underwater life of the Virgin Islands are more vibrant than the most vivid human creations. Depending on the time of day, these marine galleries constantly change. Snorkelers find this experience beyond description. More than 400 species of reef fish populate the nearshore waters of these parks. (No one knows how many invertebrate species there are.) You might observe a feisty damselfish defend-

ing its egg nest from a hungry queen angelfish—or even from you! In near-reef shallows, trunkfish may be seen blowing jets of water to uncover prey. Other predators are more cunning: the lizardfish stalks prey by remaining absolutely motionless, camouflaged to match the bottom, until it strikes with lightning speed. Take the time to observe the underwater world, and it will pay you dividends of appreciation. Pause



Basket Starfish



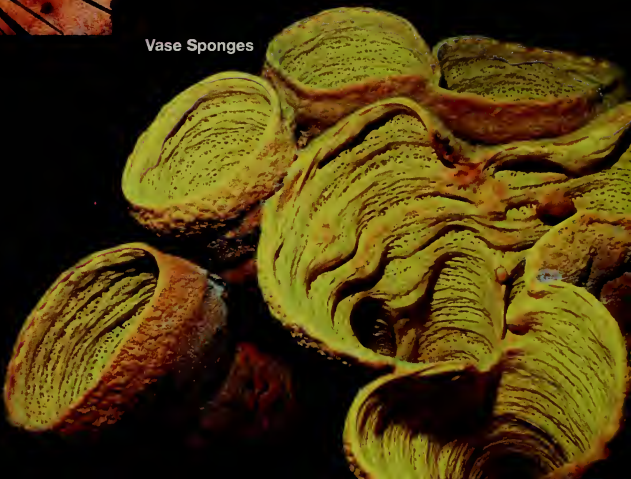
Spiny Sea Urchin

## Underwater Trails

Self-guiding snorkeling trails are provided at Trunk Bay in Virgin Islands National Park on St. John and at the east end of Buck Island Reef National Monument. The trails are marked by underwater signs that identify coral reef life. Several dive shops on St. John and St. Croix rent snorkel and scuba gear and run trips to offshore reefs. For many people, coming face to face with the stunning colors of the world of the coral reef can be utterly astonishing.

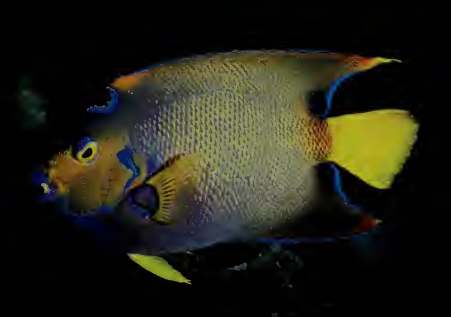
Most snorkelers reach Buck Island Reef National Monument's underwater trail via boat trips offered by concessioners under permit from the National Park Service. Maximum water depth in the grottoes there ranges from 12 to 30 feet. Always snorkel with a companion for safety.

Vase Sponges

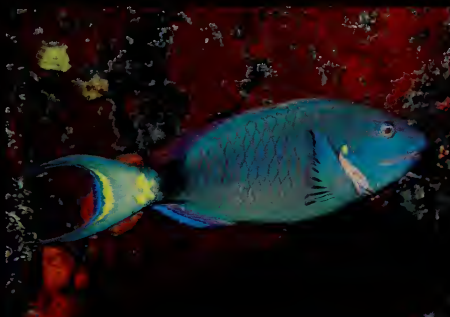


above a resting tiger grouper or parrotfish, and you may spot a cleaning goby grooming the fish's side—or even its gaping mouth. Marvel at the spiny sea urchin. Its feeding strategy is a crucial balancing factor on the reef. Without such grazers as urchins, parrotfish, surgeonfish, and others, the living corals could be smothered by algae. Much of the reef world lies beyond the snorkeler's sight. Basket starfish (far

left, top) are night-time species snorkelers are not apt to see. There is a great deal of noise in the underwater world, too. It's not only wave noise and surf crashing on the reef but the scraping noise of snapping shrimp and parrotfish grazing on the corals.



Queen Angelfish



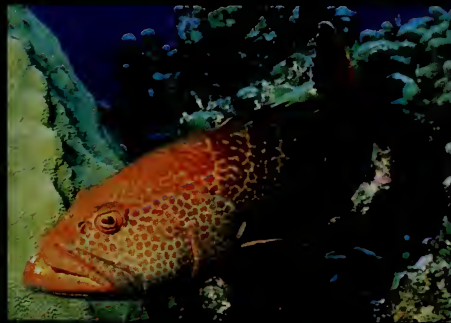
Parrotfish



Sergeant Major Damselfish (male) protecting eggs



French Angelfish

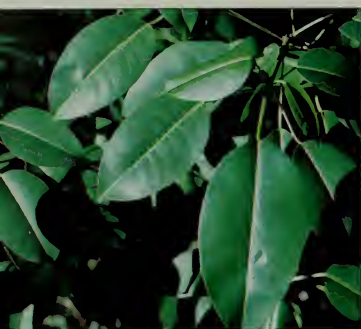


Tiger Grouper



Trunkfish





*One of the crew with Christopher Columbus in 1493 died from the effects of a Carib arrow tipped with the sap of the small, yellowish-green and apple-like fruit of the manchineel tree. Sap, leaves, bark, and fruit are poisonous. The white sap will cause a burn to the skin, and taking refuge beneath a tree in a rain storm can result in a rash. Touching the eyes after hand contact with a manchineel can cause swelling, irritation, or temporary blindness.*

A.D. 300. Igneri and Arawak peoples used the island as a fishing camp. The Igneri had moved up the Antillean archipelago from South America some 300 years before the date of this site.

When Buck Island became a territorial park in 1948, it had been very sparsely settled, but not unused, since the mid-1700s. After Denmark bought St. Croix from France in 1733, one Diedrich, town clerk of Christiansted, leased Buck Island from the Danish crown. With six to 12 slaves Diedrich operated a small plantation on the island. Primarily they harvested the island's *lignum vitae* trees. The lumber was sold to Europe and to other West Indian islands. Apparently, most trees had been cut down on Buck Island by the 1770s.

From the 1790s until the 1850s there was a small, specialized settlement on Buck Island, whose residents maintained a signal station on the mountain peak. Signals guided incoming vessels to avoid mishaps on the reef system. Those signals were daytime, line-of-sight devices. Near the same spot today, an automated U.S. Coast Guard signal light requires no staffing to do the job.

Historically the reef occasionally took its toll. In 1803 the British slave ship *General Abercrombie* wrecked at Buck Island. The wreck happened just after Denmark had completely stopped its own African slave trade—but not yet emancipated its slaves. After a lengthy legal battle the shipwrecked slaves were taken to the British Virgin Islands. Britain had not yet stopped its own slave trade, so the slaves were promptly auctioned off in those islands.

In the 1600s the French had called this island *Isle Verte*, or green island. The early Danes called it *Pockholz* or *Pocken Eyland*—named for the dark green-leaved *lignum vitae* trees that covered much of its slopes then. An error made in copying a map altered that to read *Bocken Eyland*. That error, reinforced by the presence of introduced goats, led to the Anglicized name “Buck Island.” The goats had had free run of the island beginning in the mid-1800s. It was a low-maintenance livestock operation. The goats had no predators and could not get off the island. Fencing was not needed.

With its forests gone this formerly tropical dry-forest island began to be burned over periodically. Burning improved the forage for the goats. The

combined result was considerable environmental change. In fact, we may never know what the original plant-and-animal community was like. To allow the island to restore itself to more natural conditions, all of the remaining feral goats were killed or removed from the island by the late 1940s by St. Croix officials. Between 1965 and 1985, attempts were made to rid Buck Island of the mongoose, another exotic species. The mongoose preys on eggs of both land-nesting birds and turtles. For many years, up through 1980, mongooses and rats consumed up to 100 percent of all sea-turtle eggs or hatchlings on Buck Island. The mongoose now appears all but gone from the island.

Efforts are underway to rid Buck Island of the rat, another exotic animal. Rats were exported all over the globe from their original range in northern Europe, usually by accident as hitchhikers on sailing ships. The problem persists today as many other animal species also get hauled about the world unbeknownst in cargo. In the days of sugar agriculture, the rats caused havoc in Caribbean cane fields by attacking the plants' root systems. The mongooses were imported from India in 1882 to kill the rats. However, mongooses are active by day and rats are active by night, so the intended rat-control never happened. Instead, in the ensuing ecological tragedy, mongooses wiped out at least one species of lizard and many species of ground-nesting birds. Mongooses also all but negated sea turtle breeding success for many years until recently.

With the feral goats now gone and humans no longer setting occasional fires to improve their forage, trees have begun to recover Buck Island. The original character of its former *lignum vitae* forest is by no means reestablished, however. Dominant in the beach forest is the manchineel tree, which is hazardous to the touch (see photo on page 112). Buck Island's uplands forest cover also includes frangipani, turpentine, Jamaican caper, manjack, Ginger Thomas, and water mampoo trees. Much of the island's plant life can either scratch or cause some skin irritation, so beware if you go hiking on the island. Manchineel fruit is poisonous, and its bark, leaves, and sap can cause a chemical burn on contact, including blindness. There are organ pipe and turk's cap cactuses on the island's eastern end.

## Coral Reefs

Coral reefs have been likened to a metropolis with apartment complexes, transportation systems, and multitudes of citizens living amongst limestone-cement walls built over many centuries. Millions of tiny animals, coral polyps, build the reef structure by erecting around themselves exterior limestone skeletons. Over many millennia living corals together build what one writer calls the largest structures built by other-

than-human life. Another suggests that the coral reef "may be the most industrious, pulsating, *driven* environment on Earth." It has few rivals for biological diversity. On the total global stage, coral reefs may support one third of all fish species and perhaps, altogether, a half-million animal species. Coral reefs are equated—for richness of life forms and global significance—with tropical rainforests. Yet all this diversity



Venus Sea Fan rising behind corals

## Worldwide Reefs and Reef Health

Delicate corals need warm, clear water to stay healthy. Sediments or big changes in temperature can kill them. So can dragged anchors, the touch of human hands, or storms and waves. World-wide, 95 percent of reefs are damaged by pollution, anchors, dynamiting, or overfishing—including with cyanide poison. New coral diseases of not-yet-known origins also threaten reef health.

Silt washing down from road or house construction smothers the coral reef. Nutrient-rich runoff from sewage or agriculture, and the destruction of coastal wetlands and mangroves affect coral reefs, too. The U.S. Departments of Commerce and the Interior coordinate the U.S. Coral Reef Initiative. The goal is to save these limited but richly significant areas.



Worldwide coral reef distribution



inhabits a narrow band near the Equator (see map diagram, facing page), and coral reefs cover only 360,000 square miles—less area than Canada's British Columbia. And all this richness builds on basic cooperation, a symbiosis. Colonial organisms, corals are made up of polyps that feed by trapping plankton in their tentacles. Inside the polyp live algae of various hues that consume the polyp waste—carbon dioxide

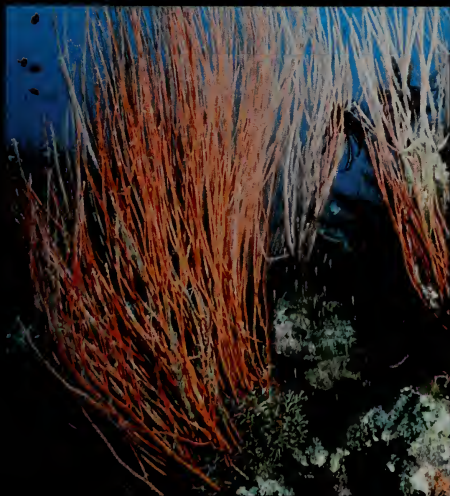
and phosphates—to synthesize oxygen and organic compounds that are used in turn by the host polyp. Substantial coral reefs exist in 108 nations, but in 93 of those nations human actions have caused significant reef deterioration. Can we cooperate in time to save the world's coral reefs?



Brain Coral



Elkhorn Coral



Sea Whips



Pillar Coral

## Sea Turtles

Sea turtles have existed for 150 million years, but all three species found in the Virgin Islands, hawksbill (right), green (below), and leatherback are endangered. Sea turtles need to nest on sandy shorelines, which contributes to their plight. First, natural beaches are fast disappearing because of development. Second, while on shore, turtles are very vulnerable to predators. Coastal develop-

ment also contributes significantly to the introduction of predators that the sea turtle, its eggs, and its hatchlings have no defenses against. While ashore, sea turtles fall prey to human hunters or to poachers—for their flesh, shells, and eggs. And dogs, mongooses, and rats prey on their eggs and hatchlings. Night herons patrol beaches hunting for hatchlings as they scramble from their nest to

the sea. In some 60 to 90 minutes ashore, a nesting female hawksbill digs a hole with her rear flippers in the upper beach, lays some 140 eggs, covers them with sand, and returns to the sea. The eggs will incubate for two months. Mostly emerging at night, hatchlings race toward the water and an uncertain future. They swim out toward the open sea and drift among rafts of seaweeds for several





years until large enough to avoid most predators. How they navigate the vast ocean is not yet known. Buck Island Reef National Monument's protected beaches and coral reefs, and the research done here, have contributed to the understanding of the hawksbill sea turtle in the eastern Caribbean. Protecting critical coral reef habitat and food sources is essential to these turtles' survival.





## Endangered Species

Threats to biodiversity elsewhere—habitat loss, exotic species, and overharvesting—also threaten it in the Virgin Islands. The ever-diminishing space for wild plants and animals here makes protected natural areas ever more significant. Parts of the Virgin Islands provide refuge for animals federally listed as

endangered. Cays are often only barren pinnacles, but they are refuges for Virgin Islands tree boas, roseate terns, and St. Croix ground lizards. Some species no longer exist on the main islands because of rats, dogs, cats, mongooses, and humans. Clearing land to grow sugar cane and cotton was

the chief threat to native plants and animals in past centuries. Today the threats are road-building, development, and competition from exotics—plants and animals from other areas introduced by people. The prickly ash and St. Thomas lidflower, for example, federally listed as endangered, still grow in



Virgin Islands National Park, which limits road-building and development. Exotics have pushed some native species into extinction. Mongooses may have eradicated the St. Croix ground lizard from that island. They eliminated the ground dove, quail, and other ground-nesting birds. Recent loss of nesting

habitat to development on St. Croix makes Buck Island's least tern population even more precious. Endangered brown pelicans (photo) nest in their Buck Island rookery and feed in its near-shore waters. Exotic plants also threaten many native plant species, thereby posing who knows what problems?





**Least terns** are diving birds listed as a threatened species in the U.S. Virgin Islands.

From April through August, they nest on Buck Island's West Beach, sharing the area with visitors to the national monument. Can you find the camouflaged chick with this adult?

*The loss of beaches to development has greatly reduced nesting habitat for species that nest on beaches. Beaches not protected from disturbance during the nesting season have been hard-hit, too. The birds are harassed and their eggs often destroyed by exotic predators or by people and illegal vehicle use on beaches.*

Fortunately for the region's sea turtles, the vast environmental alterations to Buck Island did not seriously affect their using it. Hawksbill, leatherback, and green sea turtles, species now protected by federal law, migrate to Buck Island every two to three years in summer. They nest in the shoreline forests and on beaches—see pages 116-117. To protect the sea turtles' nesting activities, the island is closed at sunset. As a further precaution all tent poles, beach umbrellas, and stakes are prohibited on all of the island's beaches.

The National Park Service began studying sea turtles here in 1975, and the studies continue today. They have focused mainly on the nesting behavior and biology of the hawksbill turtle. Nesting female hawksbills are tagged to find out how often they come back to the same nesting site, how many nests they lay, how successful their nesting and hatching are, and what their nesting habitat needs are. Sea turtle research carried out at Buck Island has provided valuable scientific data about the habits and range of these endangered species. This information has enhanced prospects for their survival throughout the Caribbean.

The National Park Service also conducts fish and fisheries censuses in the island's waters and monitors the nesting success of brown pelicans. Other natural resources research and monitoring activities center on beetles, exotic plants, native plant restoration, mongoose and rat control efforts, nesting by least terns, and seasonal and migratory bird counts.

Hurricanes are a natural fact of Caribbean life. They affect life underwater as well as on land. In 1989 Hurricane Hugo's 14 hours of 150-mile-per-hour winds—gusting to 204 mph—moved some of the south forereef crest at Buck Island 90 feet landward. The scouring and pounding from the storm waves destroyed nearly all of this forereef and cracked and weakened the reef substrate. Most of the island's other reef areas weathered the storm, however. Some of these were protected from the effects of wave shock by the island's barrier reef structure. In fact, one important ecological role of coral reefs is to buffer shorelines by breaking the phenomenal force of storm-driven waves.

In Hurricane Hugo's onslaught more than 80 percent of Buck Island beach forest trees were killed



but left standing. Especially hard hit were the manchineel trees. The storm severely cut some shoreline berms. Up to 10 feet of beach were lost to the sea in some areas of the island. This beach erosion and the toppling of trees affected turtle nesting. The criss-crossed downed trees kept the turtles from reaching the beach forest. There were more than double the usual number of incomplete or unsuccessful turtle nesting attempts. These obstacles forced many egg-laden turtles to nest in areas that were threatened by further beach erosion. Hurricanes are natural events, but it is possible that human-caused climate change on a global scale may now be affecting the frequency and strength of hurricanes.

In 2001 Buck Island Reef National Monument was expanded by over 18,000 acres of federally owned submerged lands, and the entire area of the monument was made a no-take zone. In the words of the presidential proclamation, there is to be “no extractive use” within the national monument. The expansion of this national monument and the creation of Virgin Islands Coral Reef National Monument off St. John both resulted from an executive order mandating the protection of coral reefs wherever found within federally owned waters. That mandate recognizes the worldwide threats to the health of coral reef ecosystems, which are of great value for biodiversity generally and serve as nurseries for many species of fish and crustaceans.

Certainly, Buck Island proves the wisdom of protecting natural areas. As sanctuaries for undisturbed natural processes, protected natural areas perpetuate the warp and weave of the fabric of our world. However, the threat of global climate change also makes it clear that Buck Island and its reef, or other national parklands, cannot be fully protected exclusively within the confines of their own small space on planet Earth. Nor can any other U.S. Virgin Island. It will take a wider, more far-reaching wisdom to perpetuate our planet’s natural fabric. Just as Buck Island is an island on Earth, so Earth itself is like an island in our solar system. Ecologically, as one naturalist has said, no island is an island entire of itself.



*Roseate terns are listed as endangered throughout the Caribbean. The U.S. Virgin Islands now provide one of this tern’s largest nesting areas.*

### *Safety*

Don't let sunburn ruin your Caribbean stay. Protect against overexposure to tropical sunlight with sunscreen, hat, and shirt. Sun rays are most intense between 10 a.m. and 2 p.m. Remember: a hat does not protect your face and neck against sun rays reflected off the water surface. Watch tops of your feet and the tips of your ears, too. You may want to wear a T-shirt to protect your back while snorkeling.

Any time of year, wearing cotton clothes light in color and weight is recommended in daytime. In winter you may sometimes want a light jacket in late evening and early morning. If you hike on St. John or Buck Island, trousers can help protect you against biting or stinging insects and plants with thorns or stickers. Temperatures range in the low 70's F to upper 80s December through April and somewhat higher—mid-80s to mid-90s—May through November.

Increase your intake of nonalcoholic beverages in this tropical environment. Doctors suggest eight glasses daily.

Beware of unfamiliar plants. Some, such as manchineel, are extremely poisonous—see page 112. Also toxic are lucky nut tree, poinsettia, oleander, and yucca or century plant. Mango may cause allergic reactions; eat only a little at first. There are many other hazardous plants on these islands. Use repellent against biting insects.

Take care of cuts, scrapes, and scratches right away—in the tropics infection sets in quickly. And salt water does carry bacteria. Slow to heal or inflamed? See a doctor right away!

Drive on the left as required by Virgin Islands law. American-made cars put the driver on the shoulder-side of the road, not toward the center. Practice in a parking lot before taking to the road. Drive slowly and defensively, especially on twisting roads. Outside urban areas watch out

for donkeys or livestock around the next curve. Buckle-up for safety: it's the law!

Beware of feral donkeys (those that have gone wild) on St. John. Unsuspecting humans may find them innocent-looking. However, they can bite and kick and cause grave injury. Do not approach or feed them or any wild or feral animals.

Beware of heavy surf. Where water deepens sharply offshore, large waves may break near the water's edge. Undertows may accompany large waves. Never swim alone. Respect all warning notices—they protect both you and these parks' natural and cultural features.

Do not climb on the walls of historic structures or ruins. They can be unstable, and bodily injury can result.

Watch your step on hiking trails and don't become too distracted by the beautiful scenery!

Hurricane season, June 1 to November 30, usually peaks in September and October. Contact park visitor centers or a park ranger for information about storms—and taking shelter during serious storms.

### *Management Concerns*

Vehicle rentals are available on St. Croix, St. John, and St. Thomas. Go for a vehicle with a trunk so you can lock valuables out of sight. Parking is limited in the Virgin Islands. Rental vehicles may be needed to get to many places on St. Croix and St. John. In the main tourist season, reserve rentals well ahead. Check with your insurance agent about appropriate coverage. Heed posted speed limits—there are narrow shoulders, sharp curves, and limited visibility. Ask your rental agent about local driving and parking regulations. Your driver's license from the U.S. mainland is good for 90 days in the U.S. Virgin Islands. If your license is from elsewhere, you must get a 30-day Virgin Islands operator's permit—check with a Virgin Islands Police

Department Motor Vehicle Bureau at Golden Grove on St. Croix, Cruz Bay on St. John, or the Sub Base on St. Thomas.

Conserving water is essential. Don't let water run while brushing teeth, shampooing, shaving, or showering. Wet down, turn off water, soap up, then rinse off. Limit the number of toilet flushings. Ask at your lodging for more water-conservation tips.

Be aware of your personal safety and take practical precautions to avoid crime. Contact the Virgin Islands Department of Tourism for a list of safety tips. Ask park rangers and your lodging's staff about areas to avoid, especially at night. Do not get into a car whose operator says it is a taxi unless it is clearly marked as a taxi. Taxis have domed tops; their license plates begin with TP on St. Thomas, CP on St. Croix, and JP on St. John. Do not leave your belongings unattended and visible far up a beach while you swim, especially at more remote areas.

Pets require a health certificate from a veterinarian to be admitted to the U.S. Virgin Islands. Contact the Virgin Islands Department of Tourism for requirements before you bring a pet.

Coral is very fragile and easily damaged by anchors, human touch and feet, or flip-flops. Remember: "If it's not sand, don't stand."

### ***Emergency Phone Numbers***

Dial 911 on St. Thomas

Dial 911 on St. Croix

Dial 911 on St. John

For hospital emergencies call:

778-6311 on St. Croix

776-6400 (medical clinic) on St. John

776-8311 on St. Thomas

### ***Telephone and Internet***

The "Quick Facts" page for each island lists phone numbers and Internet sites for its National Park System areas. Find information about the National Park Service and the more than 380 areas that make up the National Park System at [www.nps.gov](http://www.nps.gov) on the Internet.

Virgin Islands Department of Tourism

[www.usvi.org/tourism](http://www.usvi.org/tourism)

P.O. Box 6400

St. Thomas, VI 00804-6400

340-774-8784

or

P.O. Box 4538

Christiansted, VI 00822

340-773-0495

### ***Accessible Lodging***

To research wheelchair-accessible lodging, ask the department of tourism for its "Rates" brochure. Find out which hotels have accessible facilities. Call those hotels and ask specific questions related to your needs.



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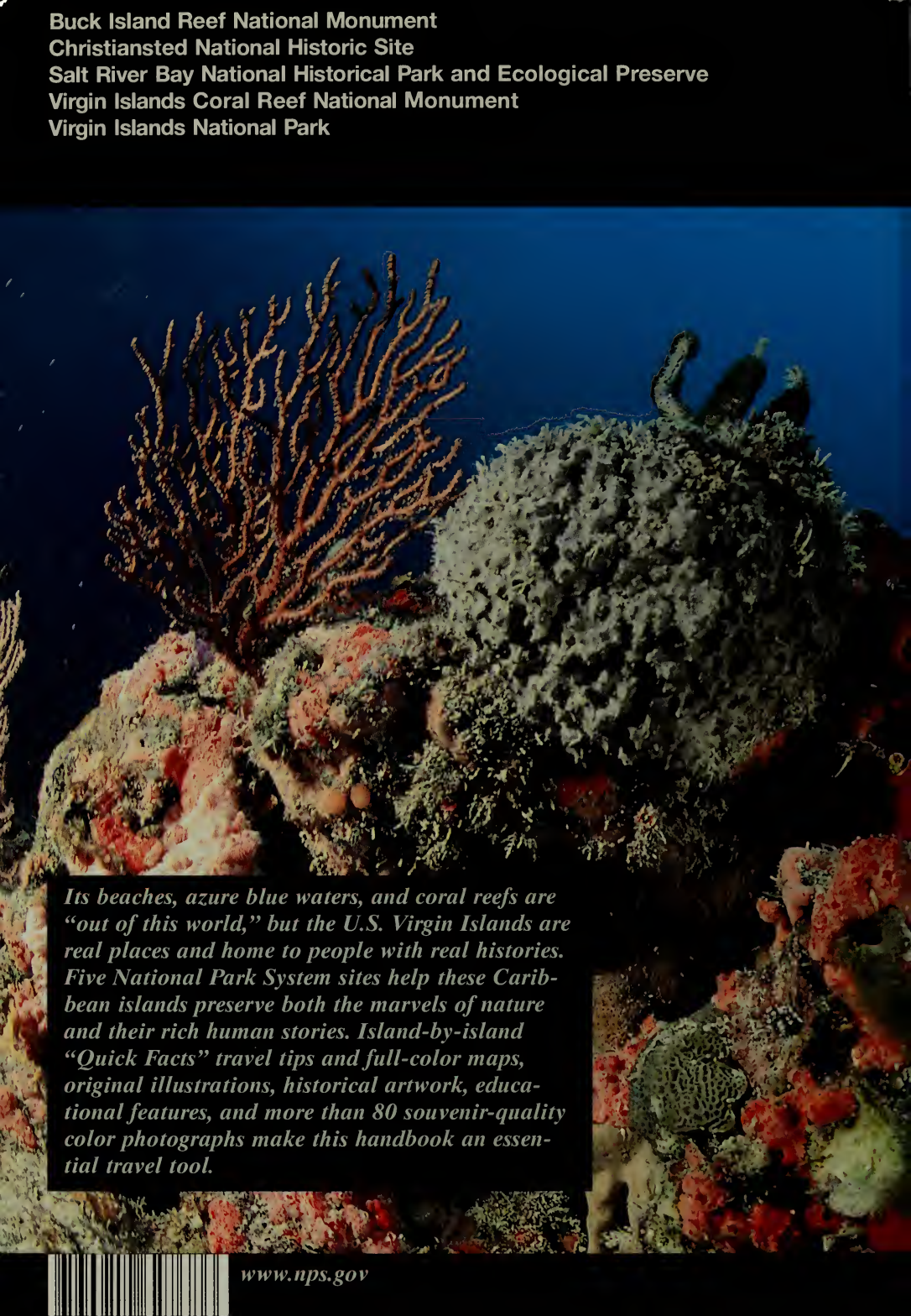
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**The mission of the Department of the Interior is to protect and provide access to our nation's natural and cultural heritage and to honor our trust responsibilities to tribes. The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.**





Buck Island Reef National Monument  
Christiansted National Historic Site  
Salt River Bay National Historical Park and Ecological Preserve  
Virgin Islands Coral Reef National Monument  
Virgin Islands National Park



*Its beaches, azure blue waters, and coral reefs are "out of this world," but the U.S. Virgin Islands are real places and home to people with real histories. Five National Park System sites help these Caribbean islands preserve both the marvels of nature and their rich human stories. Island-by-island "Quick Facts" travel tips and full-color maps, original illustrations, historical artwork, educational features, and more than 80 souvenir-quality color photographs make this handbook an essential travel tool.*

