



Jeff Heywood

Biscayne National Park has the simple beauty of a child's drawing. Clear blue water. Bright yellow sun. Big sky. Dark green woodlands. And here and there a boat, a bird. It is a subtropical place where a mainland mangrove shoreline, a warm shallow bay, many small islands or keys, and living coral reefs intermingle. Together they comprise a vast, almost pristine wilderness and recreation area along the southeast edge of the Florida peninsula. The park, located just 21 miles east of Everglades National Park, was established as a national monument in 1968. In 1980 it was enlarged to 173,000 acres and designated as a national park to protect a rare combination of terrestrial and under-

sea life, to preserve a scenic subtropical setting, and to provide an outstanding spot for recreation and relaxation.

In most parks land dominates the picture. But Biscayne is not like most parks. Here water and sky overwhelm the scene in every direction, leaving the bits of low-lying land looking remote and insignificant. This is paradise for marine life, water birds, boaters, anglers, snorkelers, and divers alike. The water is refreshingly clean, extraordinarily clear. Only the maintenance of the natural interplay between the mainland, Biscayne Bay, keys, reefs, and the Florida Straits keeps it that way. The Caribbean-

like climate saturates the park with year-round warmth, generous sunshine, and abundant rainfall. Tropical life thrives. The land is filled to overflowing with an unusual collection of trees, ferns, vines, flowers, and shrubs. Forests are lush, dark, humid, evergreen; many birds, butterflies, and other animals live in these woods.

No less odd or diverse is Biscayne's underwater world. At its center are the coral reefs. Unlike the ocean depths, which are dark and nearly lifeless, the shallow water reefs are inundated with light and burgeoning with life. Brilliantly colorful tropical fish

and other curious creatures populate the reefs. Their appearances and behavior are as exotic as their names—stoplight parrotfish, finger garlic sponge, goosehead scorpionfish, princess venus, peppermint goby. A reef explorer can spend hours drifting lazily in the waters above the reefs and watch a passing procession of some of the sea's most fascinating inhabitants.

Whether on the reefs, the keys, the bay, or the mainland you leave behind what is familiar and become acquainted with another world that is strange and wild. Biscayne is a different sort of national park. Expect the unexpected.

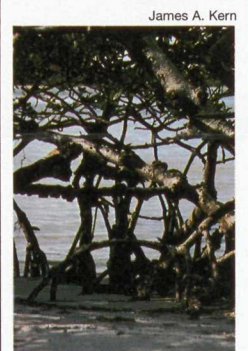


Mainland

In Biscayne, the mainland mangrove shoreline has been preserved almost unbroken. For many years these trees of tropical and subtropical coasts were considered almost worthless. Some were cut for timber or used to make charcoal. As recently as the 1960s the mangrove wilderness was referred to as "a form of wasteland." Like thousands of other wetlands, it was cleared or filled to make way for harbors and expanding cities.

Now we understand that the mangroves are vital to the well-being of the park and surrounding areas. Without them, there would be fewer fish for anglers and fewer birds for bird-watchers. Biscayne Bay would become murky. Areas inland would be exposed to the full violence of hurricanes.

Beyond the Darkness It is hard to see what lives in the brackish waters of the mangrove swamps because this water is stained brown by tannins from the trees. Hidden among the maze of roots is a productive nursery for all sorts of commercial, sport, and reef fish. Here, the young find shelter and food.



Red mangroves

Fallen mangrove leaves feed bacteria and other microorganisms, and so begins a food web that supports not only underwater life but also birds that nest and roost in the tree tops.

Defending the Coast The mangrove forest appears as a nearly impenetrable fortress. Perhaps a snake or mosquito can move through easily, but little else can. It makes an effective protective buffer between the mainland and Biscayne Bay. It guards the bay from being dirtied by eroded soil and pollutants washing from the land by trapping them in its tangle of roots. The mangroves also stand as a natural line of defense against the strong wind and waves of hurricanes.

"Freaks" of Nature Mangroves have been called freaks, and a close look reveals why. Roots of the red mangrove arch still-like out of the water or grow down into the water from overhead branches. The roots of the black mangrove look like hundreds of cigars planted in the mud—they are the breathing organs necessary for survival in this waterlogged environment.

Bay

"The water of Biscayne Bay is exceedingly clear. In no part can one fail to clearly distinguish objects on the bottom . . ." biologist Hugh Smith wrote in 1895. Today, the shallow waters of this tropical lagoon are still remarkably transparent. They serve as a blue-green tinted window to a world of starfish, sponges, sea urchins, crabs, fish of all sizes and kinds, and hundreds of other marine plants and animals.

Later, travelers such as land surveyor Andrew Elliott recorded the bounty of life in the region. "Fish are abundant," Elliott wrote in 1799. "Sea Turtles are also to be had in plenty; those we took were of three kinds; the loggerhead, hawk-bill, and green."

In the 1800s and early 1900s many settlers of the keys earned their living from the bay. Among them were Key West fish-



Sailing on Biscayne Bay

The bay is a reservoir of natural riches, teeming with unusual, valuable, and rare wildlife. It is home for many; a temporary refuge and feeding ground for others; and a birthplace and nursery for still others. It is a benign powerhouse, designed to draw energy from the sun and use it to support a complex and far-reaching web of life.

The manatee is one unusual animal that depends on this web. This gentle blubbery giant visits the bay in winter to graze peacefully on turtle and manatee grasses. It is the water's warmth and ample food supply that attracts this endangered marine mammal.



Brown pelican

A Sanctuary for Birds Birds are drawn to the bay year-round. Each follows its own instincts for survival. Brown pelicans patrol the surface of the bay, diving to catch their prey. White ibis meander across exposed mud flats, probing for small fish and crustaceans.

Large colonies of little blue herons, snowy egrets, and other wading birds nest seasonally in the protected refuge of the Arsenicker Keys. The extremely shallow waters surrounding these mangrove islands in the south bay are especially well suited for foraging.

A History of Abundance The coastal wilderness of south Florida was the first spot in North America explored by Europeans. Spanish explorer Ponce de Leon sailed across Biscayne Bay in search of the mythical Fountain of Youth in 1513.

Keys



The Keys

One hundred thousand years ago the Florida Keys were "under construction." The builders were billions of coral animals, each not much larger than a period on this page. Together these animals built a 150-mile-long chain of coral reefs. When these reefs later emerged from the sea, they became the islands of the Florida Keys. If you look closely, you can see fossil coral rock on the islands of Biscayne.

Tropical Paradise Gumbo limbo, Jamaican dogwood, Strangler fig, Devil's-potato, Satin-leaf, Torchwood, Mahogany. Only tiny pockets in South Florida contain this mixture of tropical trees and shrubs common in the West Indies. North-flowing air, ocean currents, and storms delivered the pioneer seeds and plants that eventually grew into the islands' lush, jungle-like forests.

Walking along a trail in these hardwood hammocks, you may see other tropical natives. Zebra longwing butterflies and endangered Schaus swallowtails find refuge in the tangle of leaves and vines. Golden



Devil's-potato

orb weavers betray their presence with large yellow spider webs. Birds and a few mammals also share these isolated, mangrove-fringed keys.

American Indians to Millionaires Over the years the keys attracted people willing to risk the chance of a hurricane and the certainty of the Florida reefs. Reefs host the world's most spectacular fish. Along

the coast of Florida." In another hundred years, if well-protected, it still could be.

In 1895 biologist Hugh Smith declared that Biscayne Bay was "one of the finest bodies of water on the coast of Florida." In another hundred years, if well-protected, it still could be.

Reef

Dive into the undersea realm of the coral reefs, and you will discover a feast for the eyes. It is a living kaleidoscope of gaudy colors, bold patterns, intricate designs, and peculiar shapes. Alien, yet inviting, the life of the reefs excites and mystifies snorkelers and scientists alike.

Reef Builders Among the most puzzling creatures are the corals. Early biologists suspected

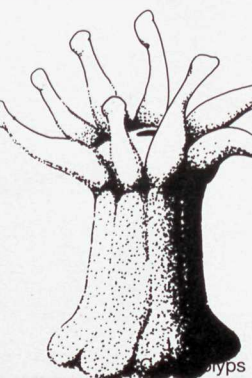
they were plants. But each coral—each brain, finger, or staghorn coral—is actually a colony of thousands of tiny, soft-bodied animals. These animals called polyps are relatives of the sea anemone and jellyfish. Rarely seen in the day, the polyps emerge from their hard, stony skeletons at night to feed, catching drifting plankton in their outstretched tentacles. These primitive, unassuming animals are the mighty



Reef diving

master reef builders. The creation of one reef requires the effort of billions of individuals. Each extracts building material—calcium—from the sea and uses it to make itself a protective tube-shaped skeleton. Hundreds of these skeletons make a coral. Many corals, growing side by side and one on top of the other, form a reef.

Corals are very particular about where they build



A living coral reef

Like the offshore seas of Biscayne, the water must be the right temperature (no lower than 68°F), the right depth (no deeper than 200 feet), and be clean and well-lit. Such conditions exist all along the Florida Keys in and south of Biscayne and in the Caribbean, and in other tropical oceans.

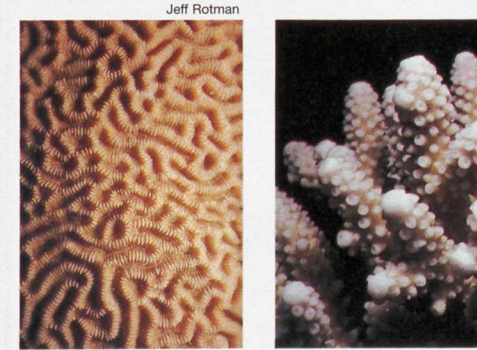
An Undersea Metropolis The reefs are the cities of the sea. In and around them lives a huge, diverse

population of fish and other marine creatures. Every hole, every crack is a home for something. Some inhabitants, such as the Christmas tree worm, live anchored to the coral. There is food to satisfy all tastes. Fish and flamingo tongues (snail-like mollusks) eat coral. Fish are food for other fish and, quite often, for seafood gourmets.

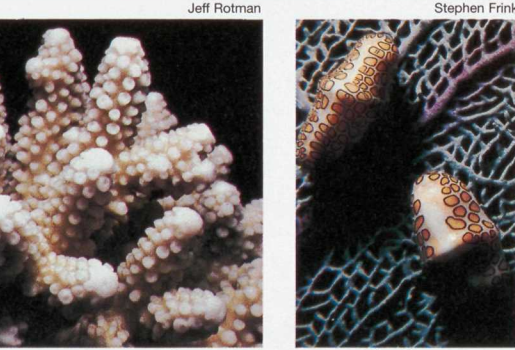
A living coral reef



Coral polyps



Brain coral



Finger coral



Flamingo tongues

Christmas tree worms

Fishes of the Reef

"In variety, in brilliance of color, in elegance of movement, the fishes may well compare with the most beautiful assemblage of birds in tropical climates," Louis Agassiz, 19th-century French naturalist, wrote after visiting the Florida reefs. Reefs host the world's most spectacular fish. Along

Biscayne's reefs more than 200 types of fish can be seen. Some are impressive in size, others in color. Some seem grotesque, others dangerous—or are they? Many behave in bizarre, unexplainable ways, at least to humans. Few places on Earth match the diversity of life in the reefs' underwater wilderness.

A Sea of Color Imagine the most colorful scene you have ever seen—a field of wildflowers, glittering lights of a city at night, a desert sunset. Whatever it is, the dazzling spectrum displayed by reef fish will equal or surpass it. The range extends from the flamboyant—angelfish,

wrasses, parrotfish, and neon gobies—to fish that are drab and ordinary.

There is much speculation about what role the colors play. The answer differs for each fish. An eye-grabbing wardrobe may serve as a kind of billboard, advertising a fish's presence. Vividly colored

wrasses attract other fish in this way so they can clean them of parasites and dead tissue, getting a meal in return. Multicolored bars, stripes, and splotches blur the outline of other fish, making it difficult for predators to see them against the reef's complex background. Some fish are masters

of disguise. Many turn different colors at night, presumably to hide from nocturnal predators. The well-camouflaged moray eel blends in with its surroundings. Unsuspecting fish that swim too close often get caught between the eel's powerful jaws and needle-sharp teeth.

A Montage of Motion Morays are sedentary creatures, but most fish swim freely about the reefs. Some, such as the solitary angelfish, move with deliberate grace. Others dart about in schools of thousands, moving with the precision of choreographed dancers. Each closeknit group

offers protection to its members. Reef fish are noted for their eccentric behavior. One is the sharp-beaked parrotfish. It can be seen, and even heard, munching on coral. Odd meal for a fish? Not really. Along with rock, the parrotfish is devouring algae and coral polyps, too.



French angelfish



Green moray eel



Queen angelfish



Parrotfish



Wrasse



Wrasse

Exploring Biscayne

On the Mainland

Convoy Point Park headquarters and the Dante Fascell Visitor Center are at Convoy Point. The visitor center has exhibits, videos, and schedules of activities; it is open daily except December 25. Convoy Point has a picnic area with tables, fire grills, restrooms, and a short trail with views of marine life and birds of Biscayne Bay. The Convoy Point parking area is open 7 a.m. to 5:30 p.m.

Boat Tours A concessioner offers glass-bottom boat tours of the bay and reefs, snorkeling and scuba diving trips to the reefs, and occasional island excursions for picnicking and hiking. All tours leave from Convoy Point. The concessioner has snorkeling and scuba equipment for sale or rent and kayak and canoe rentals. For information or reservations: Biscayne National Underwater Park, 9710 SW 328th St., Homestead, FL 33033, 305-230-1100.

Nearby Services and Accommodations Homestead, Miami, and the Florida Keys have a variety of hotels and motels; reservations are recommended. They also have restaurants, service stations, groceries, and other stores. Nearby public marinas have boat launch ramps and fuel, and often charter or rent sail and motor boats (see map below).

Camping No campgrounds are on the park's mainland. See "On the Keys" (below right) for information on camping on the islands; they can be reached only by boat. Several nearby private mainland campgrounds and trailer parks in Homestead, Florida City, and South Miami have campsites for tents, mobile homes, and trailers. Everglades National Park, John Pennekamp Coral Reef State Park, and other area parks have campgrounds, open year-round.

General Information

Biscayne's climate has warm, wet summers (May through October) and mild, dry winters (November through April). Expect sunshine and high humidity year-round. High temperatures average in the high 80s to low 90s°F in summer and the mid-70s to low 80s°F in winter. Annual rainfall fluctuates, but 85 inches or more is common. Most rain falls in summer in brief afternoon thunderstorms. Summer and fall are seasons for hurricanes and tropical storms.

Safety Tips and Regulations •The park is a wild-life and historical preserve; do not disturb or remove natural or historical objects. •Loaded firearms, explosives, and other weapons are prohibited. •Pets must be on a leash no longer than 6 feet and are restricted to certain areas of the park. •Fires are allowed only in campstoves or designated grills.

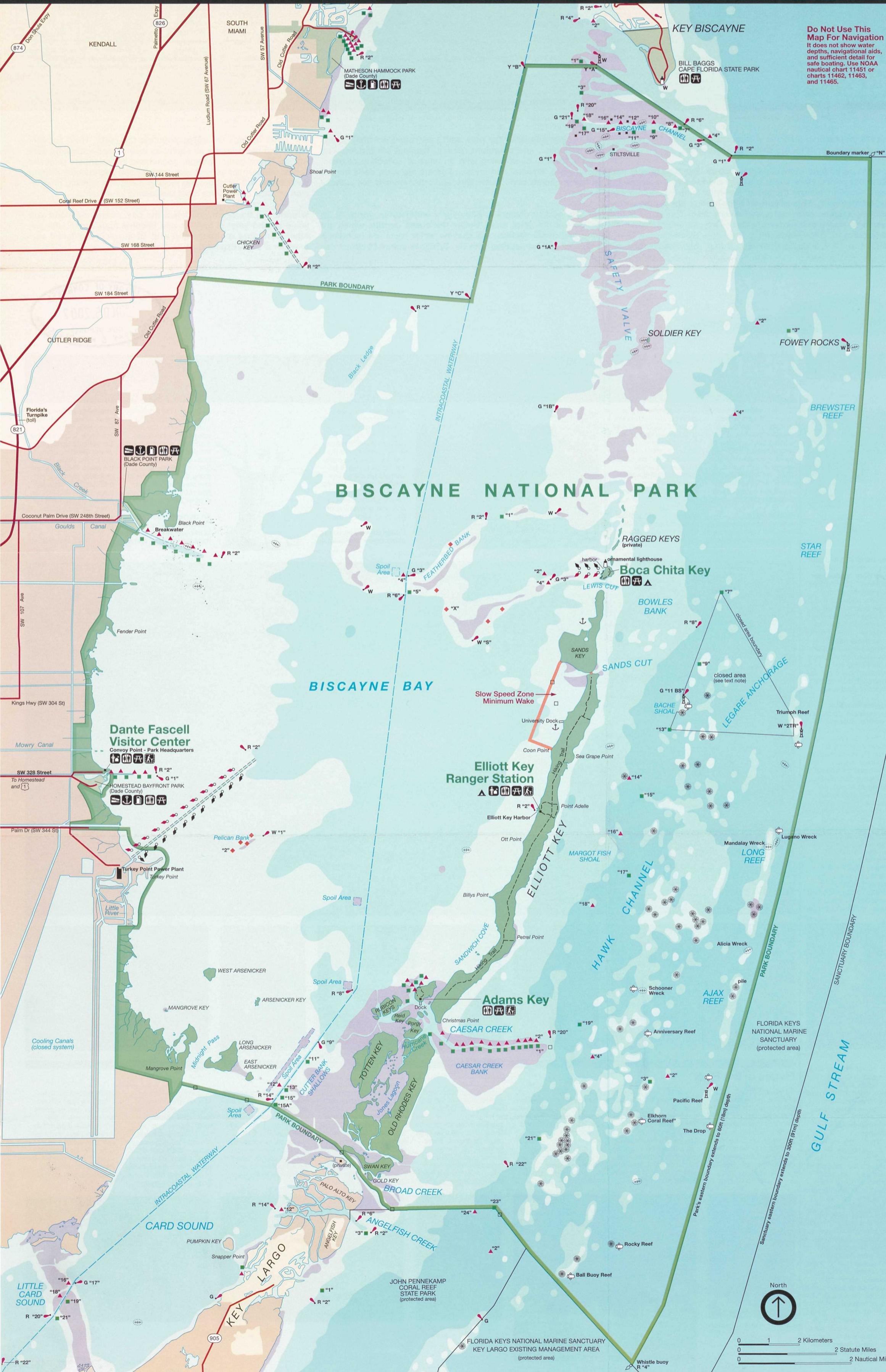
•Be careful wading; coral rock is sharp. •There are no lifeguards; do not swim alone. •Mosquitoes and biting insects are here year-round but are fewest January to April. Use insect repellent. If camping, be sure your tent has bugproof netting. •Wear a waterproof sunscreen.

For More Information
Biscayne National Park
9700 SW 328 Street
Homestead, FL 33033-5634
305-230-7275
www.nps.gov/bisc

Información en Español Las llamadas locales requieren marcar el código de área (305) más el 230-7275.

Getting to the Park

The main north-south highways approaching Biscayne are Florida's Turnpike and U.S. 1. The most direct route to Convoy Point is via SW 328 St., which intersects with U.S. 1 in Homestead. Driving south on the turnpike, you can reach SW 328 St. by taking Speedway Blvd. (SW 137 Ave.) south, then follow the park's accessible only by boat. See map for boat launch locations.



Do Not Use This Map For Navigation
It does not show water depths, navigational aids, and sufficient detail for safe boating. Use NOAA nautical chart 11451 or charts 11462, 11463, and 11465.

- Map Key to Facilities**
- Ranger station
 - Restrooms
 - Picnic area
 - Boat launch
 - Gas dock
 - Marina
 - Self-guiding trail
 - Primitive campground
 - Popular anchorage

On the Water

The Florida Straits and Biscayne Bay offer great year-round recreation. You can enjoy saltwater fishing in all seasons. Marlin and sailfish are popular catches in the ocean. Snapper and grouper are caught in the bay. Florida fishing licenses required. You must obey regulations on size, number, season, and method of take. You can take stone crabs in season and blue crabs year-round. Lobsters are protected in the bay and tidal creeks but may be taken on the seaward side of the keys in lobster season. Waterskiing is allowed; avoid mooring sites and watch for swimmers and divers.

Closed Area (Legare Anchorage) No stopping, swimming, diving, or snorkeling is allowed. Underwater viewing devices, such as cameras and glass bottom buckets, are prohibited. Do not anchor vessels. Drift fishing and trolling are allowed.

Rules and Safety Tips Navigating the waters of Biscayne can be tricky. Use adequate precautions for your boat trip. Before leaving shore, check the weather forecast, sea conditions, and tides. **Caution:** water depths on nautical charts represent the average depth at low tide. Water levels may be lower or higher. In Biscayne Bay, low and high tides occur later than the times listed in the tide tables for Miami harbor entrance. In the southern part of the bay, low tide occurs as much as 3 1/2 hours later and high tide as much as 2 1/2 hours later.

Presailing Checklist Among the required gear you must take when boating are: a U.S. Coast Guard-approved personal flotation device (PFD) for each passenger, a fire extinguisher, and signaling equipment. Take enough fuel for a round trip. Tell someone where you are going and when you expect to return. After leaving shore, check the weather forecast, sea conditions, and tides. **Caution:** water depths on nautical charts represent the average depth at low tide. Water levels may be lower or higher. In Biscayne Bay, low and high tides occur later than the times listed in the tide tables for Miami harbor entrance. In the southern part of the bay, low tide occurs as much as 3 1/2 hours later and high tide as much as 2 1/2 hours later.

Safety Afloat Stay alert! Watch weather closely. Storms move quickly, bringing rough seas and the danger of lightning. Monitor marine weather radio broadcasts. If a storm breaks, seek the nearest safe harbor. Use caution when boating near shallows or reefs. Striking the bottom with your propeller can kill fragile corals or grassbeds and may damage your propeller or engine cooling system. Look out for manatees; propellers are a leading cause of injury and death for these endangered mammals. Watch for swimmers and divers if nearing moored boats or an area where they might be expected. If a diver's flag is flown, stay 300 feet away. If you leave your boat to swim be sure it is anchored securely. Don't let currents, which are strongest on the outer reefs and in cuts between the keys, carry you or your boat away.

Map Key to Water Features and Landmarks

Water Depths	Shallows and Reefs	Channel Markers (entering from seaward)	Other Aids and Landmarks
0-6 feet (0-1.8 meters)	Shoal or spoil area	Red starboard daymarker (even numbered)	Light
6-12 feet (1.8-3.6 meters)	Coral reef near water surface	Green port daymarker (odd numbered)	Danger Shoal
Over 12 feet (Over 3.6 meters)	Coral reefs also lie deeper below water surface	Starboard buoy	Wreck
		Port buoy	Mooring buoy
		Other buoy	Lighthouse
		Daymarker	Tower

Boating Markers and Flags
Know these common buoys, signs, and flags. They are essential to safe navigation.

Channel Markers (entering from seaward)

Port (odd numbered) Lights flash green	Starboard (even numbered) Lights flash red	Diver's Flag
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Regulatory Markers

Keep out	Danger	Speed Limit (No wake-5mph)
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Storm Warning Flags
For up-to-date weather forecasts, phone (305) 229-4522 or monitor marine radio reports on VHF channels 1, 2, or 3. Channel 16 broadcasts special weather warnings.

Small craft advisory (20-38 mph winds)	Gale (39-54 mph winds)
Storm or whole gale (55-73 mph winds)	Hurricane (74 mph winds or higher)

On the Keys

The keys can be reached only by boat. Developed recreation areas and services are limited to a few islands. Boat fuel, supplies, and food are not sold on any island but are available at mainland marinas. Only Elliott Key has drinking water.

Elliott Key Boat docks are located at Elliott Key Harbor and at University Dock. A campground with picnic tables and grills operates on a first-come, first-served basis. Drinking water, restrooms, and showers are nearby. Popular overnight anchorage sites are offshore. The island has a self-guiding nature trail.

Adams Key A free boat dock, a picnic area, restrooms, and a nature trail are available for day use.

Boca Chita Key A cleared seawall, picnic area, hiking trail, and restrooms are available. A campground with grills and tables operates on a first-come, first-served basis. An ornamental lighthouse is open intermittently.

Sands Key Overnight anchorage sites are located offshore.

Rules and Safety Tips The entire park is a wildlife refuge, but the Arsenicker Keys are particularly important as a bird nesting area; do not disturb these keys. West Arsenicker Key, Arsenicker Key, and the islands in Sandwich Cove are closed to the public. Pack out all trash on the keys. Some private property still exists on the keys; please respect owners' rights. A few tropical plants can cause painful itching; do not touch any plants that you don't recognize as harmless.

Fees There is a \$15 per night overnight dockage fee at Boca Chita Key and Elliott Key harbors, which includes a \$10 camping fee. Group campsites are \$25.

Pets Leashed pets are permitted only in the developed areas of Elliott Key and Convoy Point.

On the Reefs

Reef exploring is best on calm, sunny days. Both the outer reefs, along the park's eastern boundary, and the patch reefs, closer to shore, offer good snorkeling and diving. Strong currents can occur on the outer reefs. Unless you are experienced, we recommend that you stay on calmer patch reefs. Reef guidebooks are sold at Dante Fascell Visitor Center. Mooring buoys are available on some of the patch reefs. Check with a ranger for buoy locations and for information.

Protecting Yourself and Safety Tips Whenever you visit the reefs, exercise caution.

All snorkelers and divers must display the standard diver's flag to warn boaters of their presence. Be aware of other boats in your area; propellers have injured divers. Never swim alone—always have another person stay on board.

Reef animals generally will not harm you if you leave them alone. It is good practice not to touch anything, even if it looks harmless. Coral can cause deep, slow-healing cuts. Attacks by barracuda or sharks rarely occur, but both are considered dangerous and should be watched carefully. Ask a ranger about hazards before you venture out.

Protecting the Reef Remember: a coral reef is alive. If your boat hits a reef, it will damage your boat—and scar the fragile reef and kill coral animals. When boating near patch reefs, watch for the many coral heads very close to the surface. Anchors also can damage reefs: anchor in a nearby sandy bottom or use a mooring buoy. Standing or sitting on coral or grasping it can cause injury, too. Avoid disturbing any reef inhabitant. Resist the temptation to take home a natural souvenir—this is illegal and it diminishes the beauty of the reef. Cultural artifacts are also protected; do not deface or remove them.