

Case Study: Cocos Island National Park

Read the case study below. Use the Case Studies Comparison worksheet to record important information about the Marine Protected Area (MPA). As you read, think about how the two MPAs are similar to or different from one another.

Cocos Island National Park is remote and pristine. It is located in the Pacific Ocean, 550 kilometers (340 miles) from Costa Rica.

Cocos Island is sometimes called the “Little Galápagos.” It has high biodiversity. It contains 235 plant species, 400 insect species, five species of reptiles, and 100 species of birds. Its waters have three species of sea turtles, 50 species of mollusks, more than 30 species of coral, 60 species of crustaceans, and 250 species of fish. Some of those fish include yellowfin tuna, whitetip and hammerhead sharks, whale sharks, sailfish, and giant manta rays. Among the marine mammals found at Cocos Island National Park are humpback whales, sea lions, and bottlenose dolphins.

Dinosaurs are not Native to Cocos Island

Michael Crichton set his novel *Jurassic Park* on the fictional “Isla Nublar” (Cloudy Island), in the Pacific Ocean west of Costa Rica. Cocos Island is the only island in the area with cloud rain forests. It was likely the inspiration for Isla Nublar. Although people have introduced non-native species such as pigs to Cocos Island, no one has introduced a velociraptor to the ecosystem. Yet.

The diversity of marine life is the result of climate, exposure to diverse ocean currents, and geology. The region has many caves, tunnels, and reefs. The climate is tropical and wet, and the island receives more than six meters (20 feet) of rainfall every year.

Cocos Island was used by pirates to stash treasure from the 1600s through the 1800s. Pirates and other visitors had a lasting, detrimental effect on the environment. They introduced non-native species, both accidentally and on purpose. Plants such as coffee and animals such as pigs, rats, and goats have harmed the island’s native species and delicate habitats.

In the 19th and 20th centuries, overfishing was a big threat to the ocean surrounding Cocos Island. Demand was especially high for tuna and shark fin soup, a delicacy in many Asian countries.

How Cocos Island Became a Marine Protected Area

Cocos Island was made a national park by Costa Rica in 1978. It was established as an official marine protected area in 1982, and was expanded in 2011. The new MPA called Seamounts Marine Management Area, covers nearly 10,000 square kilometers (3,860 square miles). Cocos Island National Park is managed by Costa Rica’s National Ministry for Energy and the Environment. The park was declared a UNESCO World Heritage Site in 1997. The site was expanded to include the marine area in 2002.

Case Study: Cocos Island National Park, continued

The Goals of the Cocos Island National Park

Cocos Island National Park is a marine reserve. This means it has strict limitations on how people can interact with it. It takes about 30 hours to reach the island from mainland Costa Rica, and tourists and scientists are not allowed to camp or stay overnight. In fact, they can only come ashore with approval from park rangers.

No one is allowed to take any organism or artifact from the park. Fishing and hunting are not allowed, and people are barred from looking for fossils or buried treasure. (Remember, Cocos Island was used by pirates, although there is no reliable evidence for any buried treasure.)

Environmental Goals

Despite these restrictions, conservationists face several challenges in protecting Cocos Island National Park. Illegal fishing, also known as poaching, is the largest threat to the habitats of the MPA.

Sharks are poached, often to supply the main ingredient for shark fin soup. Large tuna are also poached in the reserve's waters.

Another fish subject to illegal fishing is the dorado. Dorado, also known as Mahi-mahi, is a large fish native to the waters surrounding Cocos Island.

Although almost all fishing is prohibited, small boats still routinely catch hundreds of the fish illegally within the boundaries of the MPA. The bycatch of dorado fishing can be dolphins and sea turtles.

A lack of funding has hindered protection efforts. The MPA is too large and too remote for the Costa Rican Coast Guard to patrol all the time. The government of Costa Rica has even been accused of doing little to stop illegal activities.

The Habitat of Cocos Island and the Uses of the Marine Protected Area

Cocos Island National Park promotes research and technical studies of the area, as well as recreational use. The Cocos Island MPA protects the environment, and the economy, of Costa Rica.

Cocos and Keeling

Cocos Island should not be confused with the Cocos Islands. The Cocos Islands, also known as the Keeling Islands, are a string of coral reefs and atolls in the Indian Ocean. They are a territory of Australia. The Cocos Islands are almost exactly on the other side of the globe from Cocos Island, located in the Pacific Ocean far off the coast of Costa Rica.

Case Study: Cocos Island National Park, continued

Scientific Use

National Geographic Fellow Enric Sala, National Geographic Explorer-in-Residence Sylvia Earle, and a team of marine scientists visited Cocos Island in September 2009 to document the marine ecosystems there.

Sala and Earle visited the MPA as part of the Pristine Seas expedition. Pristine Seas is an exploration, research, and conservation project that aims to find, survey, and help protect the last healthy, undisturbed places in the ocean.

The waters around Cocos Island are some of the most shark-rich in the world. Pristine Seas divers routinely swam with whitetip sharks, whale sharks, and hammerhead sharks. Scientists monitored shark behavior, documenting how they hunted for food such as mackerel.

The Pristine Seas expedition also studied the unexplored Gemelas Seamounts. This underwater mountain range is now part of the Cocos Island MPA. The marine biologists discovered that while the Gemelas Seamounts are full of organisms like sponges, corals, and sea stars, larger fish such as grouper are less abundant than they are in the nearby MPA.

Recreational Use

Recreational activities are also promoted by the Cocos Island MPA. Ecotourism is a major industry in Costa Rica, a developing country where most people work in the service industry. The service industry includes restaurants, hotels, resorts, and spas, as well as fishing, boating, and sightseeing businesses.

Adventure sporting, such as zip-lining, scuba diving, and bungee jumping, is a growing industry in Costa Rica.

Cocos Island is renowned for its scuba diving. The Costa Rican waters are usually warm and clear. The variety of sharks, dolphins, rays, and other marine life make it an ideal destination for divers and snorkelers. Cocos Island's coral reefs are host to an array of brightly colored fish and crustaceans. The number of sharks makes it a popular destination for adventure sports vacations.