



text YD BAR-NESS

# SEAMOUNT AND SANCTUARY

When volcanoes flourish

Iago Anndt

◀ | The beautiful Martin Point on Christmas Island

ON the far side of an oceanic abyss from Jakarta, only 300 kilometres south of Java, lies a curious island named after a holiday. In this strange place, mangroves form upland forests, hidden caves shelter uniquely evolved creatures, and crabs march across the landscape like an unstoppable tsunami.

Sixty million years ago, the uppermost rocks of a volcano breached the waves of the ocean. Surrounded by sea cliffs and coral reefs, Christmas Island is perched on the summit of a 5,000-metre tall seamount, of which all but the last few dozen metres is submerged. Over the last 20 millions years, coral reefs have found a stable footing on the volcano, and their dead bodies have turned into the dissolving rock known as limestone. Since then, the volcano has heaved upwards again, and now the plateau of Christmas Island reaches 361 metres above the water. Rainwater has dripped through the limestone to form a complex of caves, and where soil has slowly accumulated on the uplands, a biologically unique rainforest has developed.

Christmas Island is an Australian territory in the Indian Ocean. British sailors made the first recorded human landfall in 1688, and a phosphate mining operation was begun in 1888 from the harbour at Flying Fish Cove. Home to a small community of fewer than two thousand people, Christmas Island is now less known for its pure deposits of phosphate minerals, and more for the curious elements of biodiversity that can be found there.

To many, Christmas Island is synonymous with crabs. Early in the October wet season, the population of red crabs (*Gecarcoidea natalis*) annually migrates from their rainforest burrows and limestone crevices towards the ocean. Thirty million of these crabs are estimated to live on the island, and when they are on the march, they form an endless stream of moving crustacea. While they are not dangerous to humans, this event is a surreal and unique zoological phenomenon.

▶ | A major resident at Flying Fish Cove, the main settlement on Christmas Island



## INFO

### GETTING THERE

Fly to the sunny shores of Christmas Island from Perth, Cocos Islands, or directly from Southeast Asia. Available flight services include Christmas Island Air and Virgin Australia. If you prefer to go by sea, then feel free to enjoy a relaxing cruise aboard the *Athena* or *Pacific Sun*. Obtain a visa before embarking on your journey or ask your travel agent to assist you in the process.

### FUN FACTS

Christmas Island was given its name by Captain William Mynors of the East India Ship Company vessel, the *Royal Mary*, on his arrival on Christmas Day, December 25, 1643. The island is now home to a diverse population of different cultural backgrounds, the various native tongues and cultures influencing Christmas Island's own culture, which can be seen by their range of ethnic festivals all year round.



Justin Gilligan



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Tiger Vardiyeva



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Andrew Scott



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Igor Armit



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GITA

1 | A red-footed booby mingles with the famous red residents

2 | A diver at Thundercliff Cave: Christmas Island is a dream destination for divers with the plethora of sea life around the island

3 | The unique-looking brown booby: It is no wonder photographers and bird-watchers flock to the island

4 | The yellow crazy ant is wreaking ecological havoc on Christmas Island

5 | The world-famous red crabs at the blowholes: Seeing them is an experience unlike any other



Justin Gilligan

**OTHER ATTRACTIONS**

Snorkelling and scuba diving are the hot topics on the to-do list of Christmas Island. With beautiful and abundant coral reefs surrounding the island, take a plunge into the deep blue and don't forget to check out the popular "Flying Fish Cove". Visit "The Grotto" – a mini cave with mixed sea and fresh water pool and the perfect place for a dip on a hot sunny day, or a romantic candlelight spot at night. "The Grotto" is just five minutes drive from Settlement. Can't get enough of the water? Then journey to the "Blowholes" approximately 45 minutes from Settlement, located on the Western side of the island. These rock formations that hiss and spurt water from the ocean are definitely a sight to behold.

Surrounded by a narrow tropical reef at the deepest point in the Indian Ocean, the waters of Christmas Island support a rich array of marine life, including hundreds of species of tropical fish, dolphins, whale sharks, manta rays as well as a variety of coral. Spinner dolphins are frequently sighted in inshore waters.

The reef is home to pelagic species such as tuna, barracuda, rainbow runners and swordfishes, not forgetting approximately 575 species of reef fish (angelfishes, moray eels, surgeon fishes, etc).

Over 88 species of reef building corals are present in the waters with the blue coral being the most common. Other invertebrate creatures like sponges have also been found, as well as five species of clownfish sea anemones. Crustaceans are present both on land and in the sea at Christmas Island, such as the banded coral shrimp (water) and the Christmas Island red crab (land).

For bird enthusiasts, Christmas Island is home to a diverse range of bird species, including the Christmas Island thrush, a tropical bird endemic to the island. Be prepared to spot species highlights such as, the Abbotts booby and the Christmas Island frigatebird. A bird-watching holiday accommodation is also offered to visitors who come for this purpose alone.

The crabs may not always have been so abundant. The decline and extinction of the Maclear's rat (*Rattus macleari*) since European arrival may have released the crabs from a major predator. However, the introduction of the African yellow crazy ant (*Anoplolepis gracilipes*) in the early 1900s has brought a new predator to the island. These ants form linked, allied, supercolonies, and as they aggressively colonise the landscape, they have accounted for millions of the iconic crabs.

Another unique natural feature of the island is the upland forest of mangroves. Worldwide, mangrove trees form critically important coastal forests in the saltwater shallows. But on Christmas Island, a small stand of mangroves (*Bruguiera spp.*) grows at a freshwater spring 30 metres above the sea level. This grove contains perhaps the most massive specimens of mangroves in the world, and may be a relic of an interglacial period when the sea levels were higher – more than 100,000 years ago.

Inside the island, the limestone caves are dark and quiet places. Some are impossible to reach from the surface, but they are tidally connected to the saline ocean waters. In these caves, a unique fauna exists. At least 12 species of cave animals are found nowhere else on Earth. Isolated by oceanic distance, the intricate complexities of dissolved limestone, and the inhospitable mixture of darkness and water, these caves are important natural laboratories for evolutionary biologists.

The island, of course, has been impacted tremendously by human activity. Besides the introduction of invasive plants and animals, the natural activity of Christmas Island has also been altered by phosphate mining, construction for tourism and residential purposes, and rainforest clearing. A proposal in 2001 for a spaceport to launch satellites into orbit has yet to see fruition. It remains to be seen how the unique biodiversity of Christmas Island will fare in the days and years to come. **AG**

**YD Bar-Ness** is an outreach ecologist based in Fremantle, Western Australia, on a long-term quest searching for the Kalpavriksh, the Wish-Fulfilling Tree of ancient Indian myth. He hasn't found it yet, but will make sure to tell you when he does. As a scientist, he specialises in climbing trees to explore the canopy biodiversity, and as a conservationist, he seeks to use geography and photography to create environmental education materials. [treeoctopus.net](http://treeoctopus.net)