

A photograph of a beach with a white sand surface covered in various pieces of plastic and organic debris. In the background, a large, jagged rock formation rises from the water. A white bird with black wings is perched on a log in the shallow water. The sky is blue with scattered white clouds.

Impressions of
Île de la Passion
(Clipperton Atoll)

Essay & photographs by *Alex Rose*

THE MOST NOTICEABLE FEATURE WAS CLIPPERTON ROCK,

the only obvious geological formation on the island.

Sixty hours into our drive, it was obvious that we were all more than ready for the commute to be over. Camera and video gear had all been set up and tested more thoroughly than could possibly be necessary, every white cap on the horizon line looked like a speck of land, and some of us were even resigned to

doing our work. M&Ms were being eaten compulsively, and the meal and presentation schedule was what kept us on track as the hours slowly ticked by, and we still had more than a day left to go. But the reward would be well worth the wait.

We are headed to Clipperton, the most remote atoll in the world. An atoll is a ring-shaped coral reef formed by an extinct seamount or volcano with a lagoon in the centre where the caldera used to be. Clipperton is essentially a halo of land surrounded by coral reefs that encloses a stagnant lagoon overgrown with algae on the surface and transacted by a toxic layer of hydrogen sulphide around 13 metres deep. I was travelling to this atoll as part of the Big Migrations 2: Clipperton 2017 expedition team headed by Canadian explorers, Michel Labrecque and Julie Ouimet.

Michel and Julie are a superb image- and film-making duo; both are scuba instructors, accomplished tech divers, and Fellows of the Explorers Club. EC Flag #93 accompanied us on the expedition, and all images and video acquired were taken under



permit #HC/1485/CAB/BSIRI/MG authorized by the High Commissioner of French Polynesia. This little dot in the Pacific is more than 1,300 kilometres away from San Jose del Cabo, our port of departure. It is even 982 kilometres from the Revillagigedo Archipelago, which by all normal standards, is remote in its own right. We will be stopping in Socorro on our way

home to do some dives with their famous oceanic manta rays, but on the first leg of the trip we were all just anxious to get to Clipperton.

Clipperton has quite a contentious history, especially for an island that is only 12 kilometres in circumference. Its sovereignty had been extensively disputed during the early part of the 1900s, until in 1931, international arbitration declared Clipperton to be a French territory; it is now governed by the High Commissioner of French Polynesia. Clipperton is also known as Île de la Passion (Passion Island) because of its discovery on Good Friday, 3 April 1711 by Frenchmen, Martin de Chassiron, and Michel Du Bocage. The name Clipperton is attributed to English pirate and privateer John Clipperton who is rumoured to have used the island as a base for his shipping raids. Clipperton has been uninhabited since 1945, but in 1906, a guano mining settlement was established there by the British Pacific Island Company in conjunction with the Mexican government. By 1914, about 100 men, women, and children lived on Clipperton, and because of

A brown booby seemingly facing off with one of the many plastic bottles littering the island.



Clipperton is now **HOME TO ONE OF THE LARGEST COLONIES OF MASKED BOOBIES**

in the world with an estimated 35,000 birds.

the lack of fresh water and arable land, they received shipments of provisions from Acapulco every two months. But after the onset of the Mexican Revolution, these supply shipments ceased and the inhabitants quickly began to perish.

Within three years, the population of Clipperton had dwindled to fifteen and was being ruled by the sole-surviving man, Victoriano Álvarez, the self-proclaimed King of Clipperton. This tyrant raped

and terrorized all the women, until he was murdered by one of his victims right before they were rescued by a US Navy gunship in July 1917. The island was briefly occupied by the US during World War II, but no further attempts were made to colonize the atoll permanently.

Because of its colonization by humans, invasive species also infiltrated the island, the most destructive of which were pigs. Their presence was responsible for the

almost complete extirpation of both brown and masked boobies from the island by the 1950s. Ornithologist, Ken Stager, from the Los Angeles County Museum, was appalled by the decimation of Clipperton's birds, and in 1958, took it upon himself to exterminate the pigs from the island. Booby populations rebounded almost immediately, and Clipperton is now home to one of the largest colonies of masked boobies in the world with an estimated 35,000 birds..



A school of grunts traverses the reef.

ÎLE DE LA PASSION IS A RUGGEDLY ENCHANTING PLACE

with a volatile history, a harsh equatorial climate,
and a staggering marine debris problem.

All of this history gave us a lot to think about during our three-and-a-half day commute to Clipperton. We finally arrived after 86 hours of smooth sailing on a surprisingly calm sea, and anchored on the southwestern side of the island in about 60 metres of water. Upon our approach to the atoll, the most noticeable features were Clipperton Rock, the only obvious geological formation on the island, and the massive breakers hurling themselves onto the beach with a frequency and force that already looked daunting for a landing. But for now, we were focused on getting in the water.

When we back rolled into the ocean, I was immediately surprised by how warm the water was. Thirty-one degrees Celsius at the surface according to my computer. My first thought while descending through the blue was that the coral cover would probably be sparse and that whatever was there would likely be bleached from temperatures this high. It turned out that my assumption was completely incorrect. We reached the reef at around 15 metres, and were greeted by a large school of black

durgon gliding over huge, round, coral heads. I had never seen formations quite like this before. It was a city of coral boulders as far as the eye could see, all accompanied by groups of brilliant red soldierfish, and highlighted by purple coralline algae around the bases. Shelves of Porites coral also dominated the landscape, providing shelter for juvenile groupers and perches for coral hawkfish. A school of grunts swam through my frame, soon to be followed by a train of trevally, and a curious leather bass hovered in front of my dome port. Sixty minutes flew by, and before I knew it we were already doing our safety stop in the blue warmth of Clipperton's waters. Our second dive was nearby, and presented us with a similar landscape. This time, I paid more attention to the fish species and saw three varieties that are endemic to Clipperton: the Clipperton Angelfish (*Holacanthus limbaughii*), the Clipperton Gregory (*Stegastes baldwini*), and the Clipperton Fanged Blenny (*Ophioblennius clippertonensis*). Despite the natural beauty of the underwater world, I could not help but notice the extensive amount of monofilament from long lines wrapped around the reef.



My dive buddy, Berna Tural, photographing a frenzied group of leather bass.

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After two dives, it was time to head to land the next morning. Our team of 18 would be landing in several smaller groups, and two French scientists studying the effects of invasive rat species on Clipperton's ecosystem and conducting topometric measurements of the island would be in the first group along with expedition leaders Michel and Julie. Watching the inflatable rib carrying five people and many thousands of dollars of gear plow through the waves to get to the beach was a bit nerve-wracking, but the landing was successful and all the equipment made it onto the island safely. Turquoise waters crashing onto a gleaming white beach of crushed coral and sand, punctuated by green palm trees and hundreds of birds in flight, all with a dramatic cloud-swept sky in the background looked like paradise at first glance. But upon closer inspection, a much more flawed landscape came into focus. One that bears the ugly human fingerprint that has yet to leave any natural habitat on Earth untouched. PLASTIC!

There is no doubt that we currently live in the Anthropocene, a period of geological history defined and shaped by the activities of man, and plastic is our calling card. We dump about 8 million tons of it into our world ocean annually, and it is estimated that if we stay on our current trajectory, there will be a larger volume of plastic than fish in the ocean by mid-century. I know these statistics well,



Juan and Sean removing long lines from the reef.

but never have I been hit so profoundly by their illustration than when I took my first steps onto the most remote atoll in the world, and could not move my feet without stepping on plastic.

Humans have not thrown plastic refuse directly onto Clipperton Island, but by improperly disposing of it, and indulging in the single-use plastic bonanza in which we currently find ourselves, we might as well have done exactly that. And I am not talking about just the expected plastic bottles and stray flip-flops. This plastic ranged from refrigerators to razors, from trinkets

to toothbrushes, from medical waste to micro plastics. Every shape, size, colour, and variety of plastic you can think of, all represented on one island that has not been inhabited since before the plastic revolution even seriously took off during WWII.

Two of our Clipperton Big Migrations team members, Meaghan Sorce and Sean Rothwell, came on the expedition with the express purpose of evaluating the marine debris on the island. While it was no real surprise that we found plastic on the atoll, the volume and variety were shocking. The study they conducted

consisted of sampling six transect lines, each five metres wide and 30 metres long, and then measuring and categorizing the marine debris found in each transect. We collected 7,116 pieces of debris from the island with a total weight of 94 kilograms.

The most common identifiable item on the island was bottle caps, and 2,089 of them were collected in 900 square meters. “While standing on the beaches of Clipperton, we watched as more and more plastic floated ashore,” Meaghan

said. “This sight made it clear that simply cleaning this island would not solve the problem. The plastic pollution crisis can only end if we start choosing more environmentally friendly alternatives, instead of cheap and disposable plastics.”



The plastic collected from one transect fills four IKEA bags.

As mentioned earlier, the marine debris was not limited to land. We recovered three kilometres of long line, including 18 hooks and 43 fasteners, over the course of 17 dives, as well as a huge, ghost fishing net we dragged up from 15 metres. We collected as much as we could reasonably carry while underwater, and this represented only a tiny portion of what we saw. Some of the long lines were obviously older, and had been heavily colonized by corals and coralline algae, and we avoided taking those lines because it appeared that we would do more damage to the reef by removing them than if we left them. We focused on taking the line that looked newer, so as to reduce our overall impact on the habitat.



Our dive team attached and inflated their safety sausages to bring the ghost fishing net to the surface.

One of our objectives while in Clipperton, was to tag sharks; data collected will be used to contribute to studies evaluating residency patterns, extent of use, and site fidelity of sharks.



The team catching and tagging a juvenile silver tip shark.

Two of our other objectives while in Clipperton, were to tag sharks and explore the lagoon with a ROV (Remotely Operated Vehicle). We were privileged to have world-renowned shark expert and conservationist, Dr. Mauricio Hoyos, with us to lead the shark tagging. We were able to tag five sharks, all juvenile Galapagos and Silver Tips, while anchored in Clipperton's waters, and collected tissue samples, and took size and weight measurements for each of them as well. The data will be used to contribute to studies evaluating residency patterns, extent

of use, and site fidelity of sharks at Clipperton Atoll. Then while on land, we used a Deep Trekker ROV to dive into the lagoon and explore beneath the layer of toxic hydrogen sulphide. These conditions are unsafe for divers so we were grateful to have a piece of equipment capable of travelling where we could not. It appeared that conditions in the lagoon were hostile to most life other than the thick matt of algae thriving on the surface.

After four days of diving around Clipperton, and two days exploring the island, we were far from ready to leave, but it was time to begin the long trek back to Mexico. At least we had Revillagigedo to look forward to on our way home. But something kept nagging at me. I could not put my finger on it at first. The seas were mild, our extremely diverse international team had meshed famously, all primary

objectives had been met, and amazing images and video had been captured by all; the expedition had been a complete success, yet I was discontented. I soon realized that the scale of the marine

debris problem had been so pervasive and overwhelming that I had been left feeling a bit helpless. Issues this large and global make it difficult to imagine how a single person can possibly make a



Clipperton 2017 - Big Migrations 2: TEC Flag # 93 Michel Labrecque (FI'16) and Julie Ouimet (FI'16) — Expedition Leaders.

THE PLASTIC POLLUTION CRISIS CAN ONLY END

if we start choosing more environmentally friendly alternatives, instead of cheap and disposable plastics.



Boobies casually sit on piles of spent shells leftover from the US occupation of Clipperton during WWII.

OUR ADDICTION TO PLASTIC

has gone far enough, and it is our responsibility as stewards of this planet to make educated lifestyle choices that avoid contributing to plastic pollution.

positive difference, but that is exactly why we must persist. We cannot allow ourselves to become numb and apathetic to the problems. It is our duty as conscientious citizens of Earth to set the best of examples for those around us in an effort to expand our impact. Reject single use plastics whenever possible, avoid plastic bags, dispose of and recycle your garbage properly, buy a reusable coffee mug, and opt for your own straw and utensils in place of the disposable ones.

Plastic pollution is a huge problem, but it is also an opportunity to make a monumental difference. Even the tiniest of actions when taken by many people can create purposeful change, and we hope that the images, footage, and stories generated from this expedition to Clipperton Atoll impact others the same way we were affected. Our addiction to plastic has gone far enough, and it is our responsibility as stewards of this planet to make educated lifestyle choices that avoid contributing to plastic pollution.

Clipperton Atoll is a ruggedly enchanting place with a volatile history, a harsh equatorial climate, and a staggering marine debris problem. The story of its natural beauty marred by the many harmful by-products of human progress is one that must inspire ways to preserve and protect the more remote parts of our planet. Inaccessibility has not kept it safe from anthropogenic pollution, but through exploration, research, and outreach, we can start to change that narrative to reflect a cleaner and more sustainable future. ○

* *This Big Migrations expedition on the Nautilus Under Sea was sponsored by Oris Swiss Watches, Ikatere, École Pratique des Hautes Études, ICF, Exploring by the Seat of your Pants, Nanuk/Plasticase, Bare, Stream2Sea, Nightsea, Deep Trekker, and Publicité Rivard.*



Meaghan Sorce sorting through plastic from the island on the deck of the Nautilus Under Sea.