

Redonda resurrection

Restoring an island gem to its former glory

BY JEREMY HOLDEN

Heading due west from Antigua, the helicopter to Redonda Island flew directly towards the lowering sun, which gilded the sea and cast a silver bar of reflection from the horizon to a point beneath us. Ahead, Redonda sat squarely in this gleaming corridor, as if placed there for effect. It would have been possible to extend the treasure metaphor (this being the Caribbean after all) and say the island was set like a jewel in the gilded sea, but in fact the impression I felt was quite the opposite: backlit and shadowed, the island looked more like the dark stump of a dead and broken tooth.



Left: Feral goat on Redonda, one of the largest uninhabited islands in the Eastern Caribbean.

As we circled to land on the flatter western end, the island appeared moribund. From the air it seemed that Redonda was nothing but an ancient crumbling cinder cone, more than half of which had long since fallen into the ocean. The remaining yellowish rock looked fragile and ready to follow. I could see few seabirds (these uninhabited rock islands are usually covered in birds) and not a sign of any greenery. In fact, as I stepped down onto the parched ground and crunched the brittle skeletons of dead herbs, I began to wonder what kind of conservation work could possibly happen here. Surely Redonda's time had passed and this was a hopeless case?

But this first impression denies two powerful elements: firstly the tenacity of nature to heal its wounds and secondly, when done properly, the efficacy of island restoration.

So why Redonda? The first thing to note is that Redonda is not a standalone conservation site, but the latest chapter in a successful

i The black rats on Redonda – over 5,000 of them – are notable for being exceptionally large and highly carnivorous. They are commonly seen in broad daylight, actively hunting native wildlife. Seabirds and lizards are expertly dispatched with a bite to the back of the head.

programme of island restoration that Fauna & Flora International (FFI) is conducting in the Caribbean – focused on saving endemic and Critically Endangered species from extinction. This work first began in the mid 1990s in Antigua and Barbuda, the island nation of which Redonda is a part. Since then, FFI has worked in more than a dozen countries and territories spanning almost the full length of the West Indies.

For most Caribbean islands the story is the same: human settlement, the accidental or deliberate introduction of alien and destructive species, followed by the crash and final melting away of the native ecosystems. In the worst-case scenarios this trend is all but complete, with endemic species now lost forever. The larger, inhabited islands are often too difficult or expensive to restore. Hope lies only in the smaller offshore islands, like Redonda.

First named by Christopher Columbus, who sailed right past it in 1493, this volcanic extrusion sits almost equidistant between Montserrat and the small nation of St Kitts and Nevis. ‘Redonda’ was a curious choice of name – it means rounded, but when looking at the island today it appears long and raked with precipitous cliffs, which from the sea surely appear impregnable. Inaccessibility and lack of any water sources kept the island pristine well into the colonial period. It must have been an almost inviolable fortress, prehistoric, with stunted, hurricane-bent trees, strange cacti, and the air screaming with seabirds.

Right (clockwise from top): **Masked booby, one of three species of booby that nest on the island; Redonda’s black rats kill and eat animals as large as this brown booby chick; huge black rat consuming bait.**



Jeremy Holden/FFI



Jenny Dailtry/FFI



Jeremy Holden/FFI

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But it was the presence of seabirds that led to its downfall. In the 19th Century, phosphates from bird guano were discovered to be a miracle fertiliser as well as a major gunpowder ingredient, and a great guano craze began that caused some of the most seabird-rich islands to be stripped bare. On Redonda alone an astonishing 7,000 tons of guano was mined each year. A small railway was built to transport the precious poop, and a series of winches installed both to bring supplies up from the shore and take the guano down. The remains of this industrial heritage can still be seen on Redonda: rusting flywheels are now evening perches for seabirds, and long seized-up machines still bear the name plates of defunct English factories.

It is hard to imagine the change this period of mining brought to the island, the massive and ugly destruction it must have wrought. But with the outbreak of World War I, the miners left and the island should have eventually returned to its former self. It wasn't to be though. The colonists left a virus in the form of rats and goats that have ensured the impoverishment of the island's fauna and flora continues to this day.

A few days before I visited Redonda I had taken a small boat out to Great Bird Island, off Antigua's northern coast. Accompanying me was Dr Jenny Daltry, FFI's Senior Conservation Biologist, and Sophia Steele, Eastern Caribbean Projects Coordinator. The most distant of a small archipelago of low islands in a shallow, clear sea, Great Bird has become the flagship for island restoration work.



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i The Redonda ground lizard (top) and Redonda tree lizard (above left) are among the island's many endemic species. All of Redonda's reptiles were recently assessed by IUCN as Critically Endangered because of the impact of rats and goats.

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Great Bird remained home to the last population of the Antiguan racer, long since extinct on the mainland. A survey conducted by FFI in 1995 estimated that only 50 of these snakes survived, and many of them were rendered impotent due to wounds from rat attacks. Were it not for the rat eradication work that followed these surveys, the Antiguan racer would now be gone – declared extinct like its cousins the Jamaican, Martinique and Barbados racers. I knew the Antiguan racer had once been described as the ‘rarest snake in the world’ and I certainly did not expect to see one. Yet within an hour Jenny had caught a large clay-coloured adult. Creeping through the thorny tangle of native vegetation, we found two more. Once the rats had been removed, the snakes – plus a suite of other endemic island reptiles – began to flourish. Today on Great Bird alone there are over two hundred healthy snakes. This population now serves as a pool from which snakes can be reintroduced to adjacent rat-free

Above: Helicopter bringing materials to build a corral for goats, most of which face an early death from starvation.

Right: Antigua’s Great Bird Island paints a graphic picture of how restoration could transform Redonda.



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i Redonda is an Important Bird Area, with globally significant seabird colonies. Eight species still nest here, including Antigua’s national bird, the magnificent frigatebird (see photo, opposite page) but colony sizes have shrunk due to heavy predation by rats and the loss of suitable nesting trees.

islands, while monthly monitoring of the islands ensures that any returning rats will quickly be detected.

The plan for Redonda is the same – remove the invasive mammals and allow the natural order to return. It is probably too late for the Antiguan burrowing owl and the Redonda skink, which is almost certainly extinct, but the endemic pygmy geckos, tree lizards and liquorice-black ground lizards should thrive. And populations of the ground-nesting seabirds that are currently brutalised by rat attacks should soar, as should numbers of an endemic beetle that is found exclusively in booby nests on Redonda. Tree lizards and tree-nesting frigatebirds, which have seen virtually every last shred of shrubbery devoured by the goats and rats, should also enjoy a renaissance.

However, on Redonda, removing the invasive species is even harder than it was on Great Bird. The presence of a long-established herd of goats complicates things. An old Spanish breed that has spent at least a century and a half on Redonda, these compact, long-horned goats are severely malnourished due to the shortage of vegetation, but can get into perilously steep parts of the island where no human can follow. Raids by fishermen have made the goats wary of people, and they are skittish and difficult to approach.

While some conservationists called for the herd to be culled to save the island, the goats are a breed of cultural – and potentially genetic – value to the nation. The decision was made to remove the animals alive and maintain the breed in secure government-approved facilities on Antigua. The island's recovery cannot begin until the goats are removed.

i Regional forums in 2009 and 2015 identified Redonda as the top priority seabird island for restoration because of the catastrophic impacts of rats and goats, and its excellent prospects of lasting success.

Main photo: **Sunlit Turk's cap cactus, one of the few native species to have withstood the assaults of Redonda's alien rats and goats.**

Below: **Red-footed booby bringing nesting material to Redonda.**

Not only are the goats eating every available piece of greenery and stopping any natural succession, they are also a food source for the many black rats that inhabit the island; one dead goat can feed the rats for days.

Initially, water seemed to hold the key to trapping the goats. A corral was built and water troughs installed with the full expectation that the goats would visit it readily. This initiative coincided with a rare period of rain and suddenly the island turned green. On my second visit three weeks later, as we banked over the island, I was surprised to see that a green baize of herbaceous plants had replaced the dun-coloured desert. For the goats this was as good as it gets, and the corral and its precious water were totally ignored.

While a flame-coloured super moon blazed in the sky, I talked late into the night with Peter Haverson, who is leading the goat capture initiative, on how this was best achieved: nets, snares, tranquillisers?

Once the greenery began to die back, the corrals and water troughs could be used again. But in the meantime, a change of tactics was clearly needed. After I had gone Peter would resume the task of catching the goats, this time using



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a variety of experimental and improvised methods, including snaring, foothold traps and a net gun.

In tandem with ongoing attempts to capture and relocate the goats, preparations to eradicate the enormous black rat population were already under way as I left Redonda. It will be fascinating to record how the island ecosystem returns to its former glory, what plant species will emerge, and how well the bird populations will thrive once their eggs and chicks are safe from marauding rats.

In the world of conservation, feeling any sense of hope is becoming increasingly rare and fleeting. And yet as I left for the mainland I felt both hope and a sense of excitement at what will result on Redonda. I plan to return in future years (possibly by boat, if the masses of seabirds have rendered helicopter landings too dangerous) and to see the towering island not as a decaying fang, as I did previously, but as an emerald so green it fits neatly into a treasure metaphor.

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WHAT HAPPENED NEXT...

FFI is pleased to report that, since this article was written, good progress has been made with the operation to remove invasive alien mammals from Redonda. The last known rat died in March 2017, while the starving feral goats have been captured successfully and handed over to the Veterinary and Livestock Division on Antigua. Together with our partners, we are now monitoring the island's wildlife, and have already detected early signs of recovery, including the welcome arrival of several species of land birds and the first bat from neighbouring islands. We are also working towards designating Redonda and the surrounding sea as a protected area.

The Redonda Restoration Programme is a joint initiative of FFI, the Government of Antigua & Barbuda, Environmental Awareness Group, British Mountaineering Council, Island Conservation and Wildlife Management International Ltd, with funding from the UK government's Darwin Initiative, National Fish & Wildlife Foundation, Global Wildlife Conservation, Taurus Foundation, Betty Liebert Foundation and support from Syngenta Crop Protection AG and Caribbean Helicopters Ltd.

i FFI has successfully removed invasive rats from 24 Caribbean islands to date, and native wildlife has rebounded quickly. For example, only four years after we removed black rats from Dog Island in Anguilla, the bird populations had more than doubled and lizard populations increased sixfold.