

## ABC Special Report

# Socorro Island: Fire and Brimstone in the Mexican Pacific



**B**etween 500,000 and one million years ago, two thousand fathoms below the surface of the Pacific Ocean and 400 miles off the coast of Mexico, the first indication of the genesis of a new volcanic island spewed out of Earth's crust. Somewhere on the west flank of the East Pacific Rise and south of the Rivera Fracture Zone, a gush of bright golden-red magma broke through the deep sea floor. This lava in turn super-heated the surrounding water, causing it to surge upward, bursting with bubbling, sulphurous gasses. Torpedoing up through the fathoms, the hot water column finally broke surface, but as its vapors were swept away on the warm Pleistocene breeze, the celebration of a momentous birth would have been lost on the few startled flying fish that may have been its only witnesses. That tiny spot on the surface of a prehistoric sea now lies 3,000 feet beneath the peak of Mount Evermann, deep in the volcanic heart of what has since become Socorro Island. Following its creation, the evolution of Socorro's unique ecosystem continued undisturbed for some five thousand centuries. Sadly, humans would wreak havoc on the island's distinctive biodiversity in just one hundred and fifty years.



*ABC's Mike Parr reports on an attempt to restore a bird species that became extinct in the wild...*

**By dawn of our second day at sea, the mist-clad peak of Socorro Island was already visible from the bridge of the grey-hulled Mexican naval supply vessel, the Zapoteco. As we approached the shoreline, a few Townsend's Shearwaters were scared up from the sea ahead of the boat, and a lone Red-billed Tropicbird flapped past, trailing its super-sized white tail-streamers. After the ship's crew expertly negotiated the difficult mooring procedure in the shallow, rocky bay that doubles as a harbor, we landed and began to explore the island.**

The first definitive ornithological studies on Socorro had taken place some 140 years earlier in 1865, when the American ornithologist and painter, Andrew Jackson Grayson, the "Audubon of the West", and his son, Ned, visited the island.

At the time of Grayson's expedition, Socorro was the ornithological version of a backyard of untrodden snow waiting to be explored. In total, Grayson found ten endemic avian taxa breeding on the island, five of which merited full species status, and two of which were named after him.

Since Grayson's time, much of the southern part of the island has been decimated by the ravages of the thousand or so introduced sheep that range freely throughout its scrub and forests. Feral cats, introduced by Mexican fishermen in the early 1970s, have become skilled at hunting the island's birds; and severe erosion, a side effect of over-grazing, threatens to destabilize the soil cover and destroy the island's coral reefs through sediment runoff.

As for Grayson's birds, one, an endemic subspecies of the Elf Owl, has been lost forever; another, the Socorro Dove, is now extinct in the wild; and two others, Townsend's Shearwater and Socorro Mockingbird, are among the world's most endangered species. As a result, Socorro is considered one of the highest priority sites in the Americas by the Alliance for Zero Extinction.

New invaders have arrived though, and the songs of the Northern Mockingbirds that first appeared in the 1970s now resonate throughout much of the southern part of the island. Mourning Doves too occupy open areas in southern Socorro. Whether or not these species were deliberately introduced we will likely never know, but it seems plausible that they invaded naturally, taking advantage of vegetation recently rendered more suitable for them by over-grazing.

In the 1920s, several of the endemic Socorro Doves were taken to the mainland by E. W. Gifford of the University of California, and aviculturalists were successful in breeding them in captivity. These birds would later provide a lifeline for the species, which by 1978 could no longer be found on the island; the last definite sighting being in 1972. The reason for the dove's extinction in the wild is uncertain, but it likely resulted from a combination of habitat loss caused by sheep grazing, hunting, and possibly cat predation.

In 1988, Dr. Hartmut S. Walter of the University of California in Los Angeles, and Dr. Luis Baptista of the California Academy of Natural Sciences, visited Socorro, and soon after, launched a project to restore its ecosystems and reintroduce the Socorro Dove to the wild. Consultations with a range of scientists and conservationists in Mexico, the U.S., and Germany followed, and as a result, Dr. Baptista founded the Island Endemics Institute to spearhead conservation on the island.

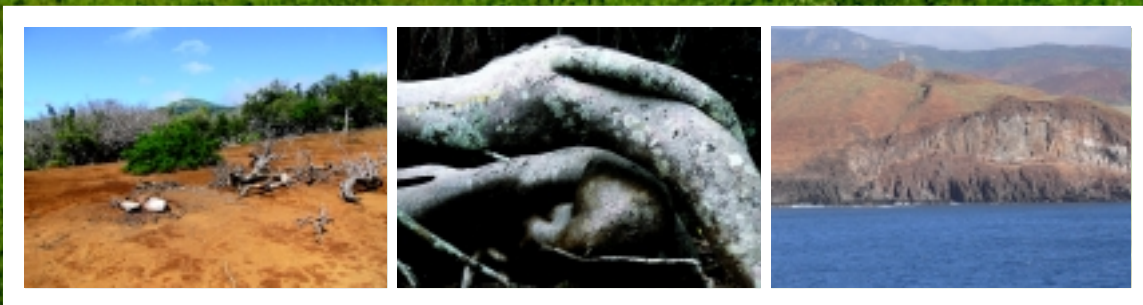


In recognition of the archipelago's biological importance and to help counter the threats to its biodiversity, the Mexican government subsequently declared the Revillagigedo Biosphere Reserve (which includes Socorro) in 1994. But in 2000, tragedy struck when Dr. Baptista died at the age of 58, throwing the shadow of doubt across the entire dove reintroduction project's future, and leaving a huge void in the hearts of his family, friends, and the North American ornithological community.

Today, ABC supports the Island Endemics Institute and the Mexican Navy in their efforts to fulfill Luis Baptista's dream of returning the Socorro Dove to the wild.

In January 2004, I represented ABC on an international expedition to Socorro, hosted by the Mexican Navy and coordinated by Juan Martínez Gómez, the leader of the Mexican arm of the Island Endemics Institute. Our goals: assess progress with aviaries that will house the reintroduced doves when they arrive on

Socorro from Germany's Frankfurt Zoo, and support a University of California-Sacramento study to assess any risk posed to the doves by avian diseases on the island. The study was jointly funded by ABC and Conservation International, with logistical support from the Universidad Nacional Autónoma de México, and Frank Carlos Camacho of the Puebla-based zoological park Africam Safari.



Previous page: expedition members traverse what remains of Mount Evermann's crater. Photo: Mike Parr/ABC. Top: Socorro Doves are larger and darker brown than Mourning Doves, with brown, not whitish under-tail coverts. Photo: Dr. Hartmut S. Walter/ UCLA. Bottom and background: scenes from Socorro Island: Mike Parr/ABC.