THE MARINE EXTENSION - THE GREAT FIRE

GÜNTHER RECK, 1984-88

When Günther Reck arrived with his wife and children to take up his post as Director, he had long been familiar with the Darwin Station and the problems of Galapagos conservation. He had begun as a tourist guide and then served for years with the National Institute of Fisheries, in which capacity he had collaborated with the CDRS and the University of Guayaquil in schemes to study and protect the resources of the Galapagos waters. It was therefore most appropriate that he should be in charge of the Darwin Station during the discussions leading up to the creation of a marine reserve.

This long-sought development was finally decreed by President Léon Febres-Cordero in 1986, 20 years after the recommendations in the Grimwood-Snow report and long after the more detailed proposals of Wellington, Robinson and the authors of the Master Plan; but when the decree was promulgated it went far beyond their most optimistic demands. The "Galapagos Marine Resources Reserve" is to include the entire interior waters of the archipelago surrounded by a further zone 15 nautical miles wide, measured from the extreme limits the islands, a total of 30,000 square miles (80,000 square kilometres). Progress had been slow because of the difficulty in reconciling the various local and national interests involved, which fell under the jurisdiction of different ministries responsible for the law of the sea, defense, fisheries, tourism and development. The reserve was to be administered by a Commission representing these interests, presided over by the Minister of Agriculture, who was already responsible for the Galapagos National Park. The Commission was authorized "to seek the assistance and collaboration of the Charles Darwin Research Station and such national and international organizations as it considers necessary". Much negotiation was still needed before detailed administrative plans could be finalized. Advice was sought from the Great Barrier Reef National Park in Australia and from the Woods Hole Oceanographic Institution and the National Oceanic and Atmospheric Administration in the U.S.A.

The importance of extending legal protection to the sea as well as to the land area can scarcely be exaggerated. The Galapagos are situated at the confluence of the great Eastern Pacific currents and their waters are of unique scientific interest. Quite apart from the direct dependence on the sea of much of the wildlife - including nesting seabirds, marine iguanas, sea lions and fur seals - the Galapagos marine resources may prove to be at least as significant scientifically as the better researched terrestrial resources. The waters are still in a nearly pristine state but the increasing danger of pollution from the discharge of waste by cruise ships and the growing human settlements is obvious, as is the frequence with which ships are wrecked on the archipelago's notoriously dangerous shores. *(Notice de Galápagos, No. 44).* These are threats for the future. Meanwhile recent research has discovered gratifying numbers of sperm whales in the Galapagos Grounds off the west coast of Isabela, where they were virtually eliminated by whalers in the 19th century.

The *El Niño* period of extraordinarily heavy rainfall was followed by two years of drought. Fire broke out in the Darwin Station's administration building and, while it was possible to prevent it spreading to the other buildings, lack of water and appliances thwarted all efforts to save the office and most of its valuable contents. Thanks to the generosity of Swedish supporters, most of the damage was made good in a relatively short time.

A much bigger fire, started outside the National Park by farmers, swept across the desiccated vegetation of the Sierra Negra volcano on Isabela Island. It lasted from February to July 1985 and attracted world-wide publicity, including much imaginative misinformation. The local residents, armed forces from the mainland, fire-fighting bodies from Canada and the U.S.A. gallantly joined the National Park Service in the appalling heat. They checked the spread of the conflagration by encircling it with a firebreak 40 kilometres long, but it was months before the belated rains finally extinguished the last of the fires. The giant tortoises and other better known Galapagos species were never in real

danger but some 175 square kilometres of wilderness, still barely explored botanically, were devastated. Monitoring of the damage to the vegetation and the life that depends on it began immediatley but it will be years before the effects can be measured and half a century before some species of trees can again grow to their full size. *(Noticias de Galápagos 42, 46).*

With Marcia Wilson in charge of herpetology at the Research Station, two decades of captive breeding of reptiles was showing encouraging results. Much had been achieved by trial and error in this pioneering endeavour, but now experiments were being conducted by the GNPS and the CDRS in a more rigourously scientific manner. The staff of the two organisations, advised by Howard and Heidi Snell, compared hatching results obtained at different temperatures and humidities, and also monitored the relative success rates in rearing small tortoises on a cement floor inside the centre with those obtained on a soil surface in the open air. It had recently been discovered that the sex of tortoises is determined by the temperature at which the eggs are incubated, so it became possible, by controlling the temperatures in the incubators, to produce a higher proportion of females to males and thus to speed up the eventual repopulation of the Galapagos by the giant tortoises (galápagos) that gave the islands their name. In 1988, the 1000th captive-bred tortoise was released on its ancestral island, and there were signs that the oldest of these would soon start reproducing in the wild. It was not to be expected that, in the harsh Galapagos conditions, hatching and rearing success in the wild would be as high as at the Station, but it was evident that the re-establishment of most of the once abundant races of giant tortoises was well under way.

Perhaps the most striking success was the preservation of the Española (Hood) Island race *(Geochelone elephantopus hoodensis),* of which only a few elderly survivors remained when the Darwin Station was inaugurated. By 1988, Espanola had a youthful population of over 200 tortoises, all of them captive-bred. Apart from the Arabian Oryx and Père David's Deer, this is the only known case of a wild population derived entirely from captive-bred animals. *(Noticias de Galápagos 25, 44, 45).*

Controlled experiments with hatching and rearing land iguanas likewise produced highly encouraging results; indeed over-crowding in the rearing pens became a serious problem. In the wild, only 10% of hatchlings survive their first year but, with the introduction of electric incubators and a new substrate, the rearing centre achieved a survival rate 4 - 6 times higher than in nature. Twelve years after the rescue operation began, the future of all three of the endangered populations of land iguanas (whether they are distinct sub-species or species is uncertain) seemed secure. There were still problems in protecting the young animals after they had been released in their traditional colonial areas and this was notably the case with the "Seymour-Baltra" population. As Baltra Island had become an active military and tourist air base and was not included in the National Park, the problems of re-introducing

The Vice-President of Ecuador, Blasco Peñaherrera Padilla, introducing his son to a giant tortoise under the watchful eye of Günther Reck, Director of the CDRS