



Office of U.S. Foreign Disaster Assistance

DISASTER CASE REPORT

Agency for
International
Development

Washington D.C.
20523

ECUADOR - Bushfire

Date: February 28 - April 9, 1985

Location: Isabela Island, the largest island of the Galapagos Archipelago

No. Dead: None reported

No. Affected: Entire island population of 800

Damage: The small villages of Loja and Esperanza, including 20 buildings, were destroyed; about 4,500 ha. of grassland were burned and 800 ha. of coffee farms, or roughly one quarter of the island's arable land. Loss of habitat affected many endangered species of flora and fauna.

The Disaster

All of the Galapagos Islands were suffering from a prolonged drought in early 1985, which produced an acute fire hazard. Isabela Island had had no substantial rain for eight months when two major fires broke out. On February 28 in Santo Tomas, a small wilderness community of about 150 located southeast of the Cerro Negro Volcano, a farmer lost control of a fire set to clear the undergrowth in one of his fields. The blaze spread quickly over a 40-ha. area, fueled by humus and roots up to two meters deep, but was attacked by local residents and contained within 24 hours. Fires continued to spread underground, however, and erupt in "hot spots", especially when wind gusts arose.

A second fire, probably caused by a careless hunter, erupted a few days later on the southern slopes of the Cerro Negro Volcano, just north of the town of Puerto Villamil. It spread northward, fanning out to cover an 8-kilometer front and burning dry grass, ferns, and low bush in a 4,000-ha. zone within the National Park.

The nature of the terrain, a combination of porous lava rock and dry organic matter interweaving among the lava boulders 60 cm or more below the surface, made it difficult to determine if the fire was completely extinguished. A spot extinguished superficially could continue to burn

ECUADOR - Bushfire

under the surface and the "extinguished" fire could rise again hours or even days later. Thus, constant patrolling of the fire lines was necessary. New outbreaks of fire occurred on the southern slopes of the Cerro Negro Volcano; it was not possible to determine if they were related to the earlier fire believed to have been extinguished. At their height, the fires formed a "J" shape running south from the volcano's highlands and then west, paralleling the coast at a distance of several kilometers; total length was about 30 km. At each of the two locations, six to seven separate fires were burning.

The most famous species of animal affected by the fire was the *Geochelone elephantopsis*, the giant Galapagos tortoise. Isolated colonies of subspecies of these tortoises populate the island, and those living in the fire's path were reduced in number or denied food. By consuming grass lands, the fire also attacked Isabela's reptiles and birds directly and indirectly, as nesting areas were burned out and grazing areas destroyed. Some unique plant varieties were also casualties and others will be threatened in the future as area wildlife search for alternate food sources.

Action Taken by the Government of Ecuador (GOE) and Non-Governmental Organizations

The Governor of Galapagos went to Isabela to take charge and declared a state of emergency for the province. Among the actions he took were the prohibition of liquor sales on Isabela; the conscription of all able-bodied males over 18 on the island, about 200 men, who were subsequently organized into nine crews working nine hours a day to fight the fires; and the evacuation of women and children from the fire zone. He also called on INGALA (the Instituto Nacional de Galapagos), Civil Defense, and the National Park Service for help. However, the GOE lacked one cohesive organization to conduct a large-scale firefighting campaign, and reconnaissance and logistical support was insufficient. Officials underestimated the size and seriousness of the fire, and the Governor lifted the state of emergency prematurely. Firefighting ceased after a brief rainfall on March 4. Unfortunately, the rain did not extinguish the fires but instead lulled people into believing the danger was over.

Radio communication between the fire camp on Isabela and the Darwin Station on Santa Cruz Island, used as a relay base to Quito, was not always possible, and misunderstandings between the different groups involved in the firefighting caused delays and confusion in logistics and transportation of equipment and personnel.

On March 2, the GOE declared a state of disaster and requested assistance, but the next day, the Ecuadorian Civil Defense miscalculated the fire's behavior and declared that no emergency existed. After the rains on March 4, all firefighting personnel went home without completing the fireline. Three days later, the fires rekindled and blazed out of

ECUADOR - Bushfire

control and once again the GOE requested outside assistance and renewed the efforts of its own resources, including the National Park Service, Army Special Forces, PRONAF (the National Forestry Service), and Civil Defense. On March 16, the GOE formally requested UNDR0 to launch an appeal to the international community.

Assistance Provided by the United States Government

On March 3, based on reports received from the chief of the joint command of the Ecuadoran Armed Forces, and a request for assistance from Ecuador's president and Foreign Ministry, the U.S. Ambassador declared that a state of disaster existed. Reports indicated that a major bush fire was burning beyond control by resources available in the country. Funds were immediately allocated by OFDA: the Ambassador's authority of \$25,000 and additional funds for a U.S. Forest Service (USFS) firefighting mission.

Later that same day, however, the GOE withdrew its request for assistance, stating that the fire was under control. This assessment was faulty due to a number of factors including a sudden rainfall that appeared to put out the fire and a lack of coordination and communication among the various groups involved in the firefighting (see description of disaster above). The \$25,000 was cancelled, but \$20,000 had already been spent to mobilize USFS services, which included 87 firefighters and 4.5 MT of gear which were to be flown to the Galapagos from the U.S.

Several days later it was evident once again that several fires were burning out of control. Reports from two AID forestry specialists sent to Isabela Island to assess the situation, as well as another request from the GOE, prompted the U.S. Ambassador to renew his disaster declaration on March 12.

To evaluate the fire situation, recommend appropriate relief supplies, assure proper firefighting techniques and training in the use of firefighting equipment, two USFS experts were sent to the Galapagos, along with equipment, to serve as technical advisors. USFS personnel, GOE agency personnel, and local volunteers worked together to construct firelines. A Peace Corps volunteer trained local conscripts in firefighting techniques and worked with them in containing the fires. Logistical problems plagued the relief effort, partially because Isabela Island has no airstrip and all supplies and personnel to combat the fires had to be airlifted from Quito to Baltra Island and then conveyed by boat to Isabela.

ECUADOR - Bushfire

To assess USG response to the fires and to review with the USAID Mission preparedness activities proposed with the GOE Civil Defense, OFDA's Assistant Director for Latin America and the Caribbean flew to Ecuador and took part in an aerial reconnaissance of the fire. A videotape was made by an AID cameraman.

In April, two fire caches, one on Isabela and one on Santa Cruz, were established using the surplus tools provided by OFDA. Both were under the jurisdiction of the National Park Service.

Summary of USG Assistance

Cost of initial mobilization by USFS.....	\$20,000
Communications equipment.....	\$2,922
Firefighting tools and equipment, including SSB radios (which were returned to OFDA), chainsaws, fire swatters, shovels and rakes, axes, backpack pumps, lanterns, and first aid kits were flown in to Quito in two shipments, each accompanied by a USFS Fire Officer. Cost of this USFS support, including equipment and personnel.....	\$91,650
Debriefing trips to Washington for two USFS personnel.....	\$1,200
	TOTAL
	\$115,792

Assistance Provided by U.S. Voluntary Agencies

None reported

Assistance Provided by the International Community

International Organizations

UNESCO - provided the GOE \$10,000 from the World Heritage Fund for the repair of installations damaged in the National Park.

UNDRO - gave a cash grant of \$20,000 which was used to purchase fuel and materials and provide lodging for firefighting crews.

ECUADOR - Bushfire

Governments

Canada - sent a technician to assess the situation and two planes adapted for water bombing, value not reported.

TOTAL \$30,000