

The Endangered Plant Kingdom and Global Rescue Actions

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Human-driven destruction of the habitats leads us on the brink of a global biological disaster that could rival anything in evolutionary history. There are about 300,000 species of living plants on Earth, and it is estimated that one in 4 will be gone or on the way to extinction in the next 50 years and that 2 in 3 may be gone by the end of this century, if we do not take action now. Tropical plants are especially under enormous threat and disappearing at an alarming rate.

Conservation strategies designed to protect plants have been taken place at local and international levels in recent decades. However, tropical plants with the richest diversity are mainly neglected, since it is difficult and costly to meet their heat and humidity requirements in developed temperate countries. A conventional way to conserve plants is keeping them at low temperature and low humidity, e.g., the Millennium Seed Bank Project by the Royal Botanic Garden (Kew), the Germplasm Bank of wild Species (Kunming Institute of Botany, Chinese Academy of Sciences), and the Norwegian Svalbard Global Seed Vault. This approach is difficult for tropical plants, since their seeds are not able to tolerate freezing.

The Dr. Cecilia Koo Botanic Conservation Center, located in southern Taiwan, was established in 2007 with the mission: to conserve the tropical and subtropical plants, in order to sustain the richest biodiversity on Earth. The center is generously supported by a private foundation. It focuses on the ex situ preservation of living plants, and now houses 10,750 species and varieties of plants flourishing in 7 greenhouses with 10,000 square meters. The center has targeted 15 kinds of plants as major conservation targets, including Araceae, Asclepiadaceae, Begoniaceae, Bromeliaceae, Gesneriaceae, Heliconiaceae, Marantaceae, Musaceae, Orchidaceae, Palmae, Pteridophyte, Rutaceae, Succulents, Theaceae, and Zingiberaceae. The goal is to conserve 30,000 species and varieties over the next 20 years.