



THE NEW YORK BOTANICAL GARDEN

BACKGROUND:
The New York Botanical Garden's Scientists
Plant Collecting and Conservation in Cuba

Scientists at The New York Botanical Garden have studied the plants of Cuba for more than a century. Tens of thousands of specimens have been collected by Botanical Garden staff and their Cuban colleagues on several dozen expeditions over the years. These specimens are available for study in Cuban herbaria and in the Garden's William and Lynda Steere Herbarium and, increasingly, through its online version, the C.V. Starr Virtual Herbarium.

The most recent Cuban expedition was undertaken within the context of the Garden's Caribbean Biodiversity Program by three staff scientists (Drs. William Buck, Fabián Michelangeli, and Wayt Thomas) and five Cuban counterparts in October 2009. This nearly two-week trip explored the spectacular mountainous eastern end of the island and resulted in about 550 plant specimens collected, of which a number represented important new distribution records or even species new to science.

Garden scientists in partnership with Cuban scientists are using data from these new collections, along with that from tens of thousands of previously collected specimens, to assess the degree of threat that Cuban plants are under from habitat destruction, invasive species, tourism, agriculture, and climate change. This is being done by performing sophisticated analyses of species' distributions, using locality data from these specimens along with data on soils, rainfall, topography, protected areas, and so on in the Garden's Geographic Information Systems Laboratory.

The design for this conservation project was developed using data from 70 selected endemic species in the borage and princess flower plant families. The analysis revealed that more than 40% of the species studied were not represented at all in any protected natural area in Cuba; if this statistic is representative for Cuban plants generally, then the threat status of plants on the island is high and conservation action is urgently needed before unprotected habitats are destroyed.

The next step in this conservation project entails the systematic assessment of threat levels for all of Cuba's some 7,000 species of vascular plants, about half of which are thought to be endemic to the island—an extraordinarily high percentage and one of the reasons that Cuba is considered a Biodiversity Hotspot. The project will require more field expeditions to fill in knowledge gaps.

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