

Protecting Myanmar's rich plant biodiversity is major goal of new NYBG program

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Myanmar's diverse habitats and large number of locally restricted plant species make the country a major biodiversity hotspot, but the country's flora is very poorly understood. The New York Botanical Garden's new Myanmar program is aimed at filling this fundamental research gap. Credit: Photo by Kate Armstrong, Ph.D./The New York Botanical Garden

As Myanmar emerges from decades of upheaval and isolation, The New York Botanical Garden has launched an ambitious conservation and training program to document the country's remarkably rich plant life, build the country's capacity to carry out plant research, and promote the sustainable use of its forests.

Myanmar is a major biodiversity hotspot, with diverse habitats boasting a wide range of plant species that are likely found nowhere else, yet it has probably the most poorly studied flora in the Northern Hemisphere. The country's scientific infrastructure—the human and institutional resources needed for significant research—has suffered from decades of neglect. As a result, conservation efforts in Myanmar are hindered by a lack of basic information.

To address this fundamental problem, the Botanical Garden is undertaking a two-phase project designed to inform future conservation and [natural resource](#) management efforts. In the first phase, now under way, Garden scientists are establishing collaborations with national and regional institutions, providing training for young botanists, collecting preliminary data about Myanmar's flora, and documenting natural resource usage in key areas. That phase, which will last a year, will guide the design of the second phase, envisioned as a major, multiyear program to implement a plant conservation and capacity-building initiative.

The first phase of the Myanmar program—Laying the Groundwork for Plant Conservation and Forest Resource Management in Myanmar—is supported by a one-year, \$200,000 grant from The Leona M. and Harry B. Helmsley Charitable Trust.

"As Myanmar opens up for business, tourism, and research, the country is at a pivotal moment for biodiversity conservation," said Gregory Long, Chief Executive Officer and The William C. Steere Sr. President of the Garden. "The Garden has decades of experience in exploring difficult and poorly understood habitats and helping countries build critical scientific capacity. We are very grateful to the Helmsley Charitable Trust for its generous support for this effort to help Myanmar document the diversity of its plant life and develop the human resources and institutional tools it needs to preserve that diversity."

Myanmar Program's Goals Address Present and Future Needs for Conservation

The Garden's Myanmar program will tackle three major needs: it will create an accurate, accessible baseline of botanical data to empower informed conservation and management decisions, develop the capacity of Myanmar botanists to document their country's flora, and engage local communities in the conservation and sustainable use of their

[forest resources.](#)



As part of the new Myanmar program, scientists from The New York Botanical Garden will journey to the country's remote forests to document the flora and work with local communities to develop sustainable uses of forest resources. Credit: Photo by Kate Armstrong, Ph.D./The New York Botanical Garden

"The Helmsley Charitable Trust is very pleased to support The New York Botanical Garden's efforts in Myanmar as part of a holistic strategy to conserve biodiversity and the sustainable use of natural resources for the benefit of wildlife and the well-being of local communities," said Dr. Bob Cook, Conservation Program Director at the Helmsley Charitable Trust.

Of all tropical Asia, the flora of Myanmar is the least documented, and existing plant collections are scattered, incomplete, and unstudied. As a first

step toward adequate documentation of the flora, Garden scientists are conducting field work in two areas—Htamanthi Wildlife Sanctuary in the north (part of a forest complex that hosts the largest remaining tracts of virgin forest in mainland Southeast Asia) and Tanintharyi Nature Reserve in the south. These two preserves represent contrasting major habitats and floristic areas.

Efforts to assess botanical diversity in Myanmar are hindered by a severe lack of human and institutional resources. Although the Myanmar Forest Department and university staff members are strongly interested in botanical research and its implications for forest management, few have received adequate training. Also, the nation's herbaria—collections of preserved plant specimens that are critical to any large-scale conservation endeavor—are small and have fallen into disrepair. Garden scientists will carry out training in the field and in herbaria, involving Forest Department personnel, young botanists, and university students who will gain hands-on experience in specimen collection, data recording, and the identification of major plant families and genera.

It is also important to engage [local communities](#) in the conservation and sustainable use of Myanmar's forest resources. Population growth, logging, intensification of agriculture, and rapid industrialization pose dangerous threats to the country's forest ecosystems, upon which the majority of the population depends for food, shelter, and medicine. Commercial demand for specific forest resources is pushing communities toward a destructive cycle of short-term gains, leading to over-exploitation of resources. Garden scientists will partner with communities to help ensure their natural resource use is sustainable by identifying economically important plant resources, collecting baseline data on density and yield, and developing management plans for sustainable resource use.

Myanmar Program Builds on Garden Model of Conserving Threatened Floras

The Garden's Myanmar program builds on a model established more than 20 years ago in the Brazilian state of Acre to document highly diverse but unknown and heavily threatened floras. Efforts

there have led to the expansion of protected areas, inventories, and contributed to a checklist of the greater oversight of the management of the region's country's plants.

timber resources, and conservation of endemic plant species. This model is now being used successfully in various places in the New World tropics and Southeast Asia.

Provided by The New York Botanical Garden

"It's an integrated approach that considers human and institutional resources as much as it does natural resources," said Douglas C. Daly, Ph.D., Director of the Garden's Institute of Systematic Botany and B. A. Krukoff Curator of Amazonian Botany, who will lead the Myanmar program.

"Myanmar is the extreme case of a flora that is almost completely unknown, but because the country is opening up after a long period of isolation, it doesn't make sense to do just botanical exploration."

Dr. Daly has three decades of experience working in the world's tropical forests. He specializes in the ecologically important Burseraceae (frankincense and myrrh family) and has focused much of his work in Acre, where he has cataloged the flora and studied non-timber forest products to help diversify the regional forest economy. He is currently supporting scientists in Vietnam, Madagascar, and Brazil in documenting and protecting their plant diversity.

Joining him in the Myanmar program are Charles M. Peters, Ph.D., Kate E. Tode Curator of Botany in the Garden's Institute of Economic Botany, and Kate Armstrong, Ph.D., a Garden postdoctoral fellow.

Dr. Peters, a forester and plant ecologist, is a leading authority on the sustainable management of tropical forests, particularly through community management methods. His protocol for the sustainable use of tropical forest resources has been implemented in more than 30 conservation projects worldwide. He has led community forestry projects in Myanmar since 2005.

Dr. Armstrong, whose research focuses on the flora of Southeast Asia, has worked extensively on similar projects in this region, most notably in Laos, where she trained local botanists in field and herbarium techniques, conducted botanical

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