



BOTANIC GARDENS CONSERVATION INTERNATIONAL (BGCI)

A Global Network For Plant Conservation

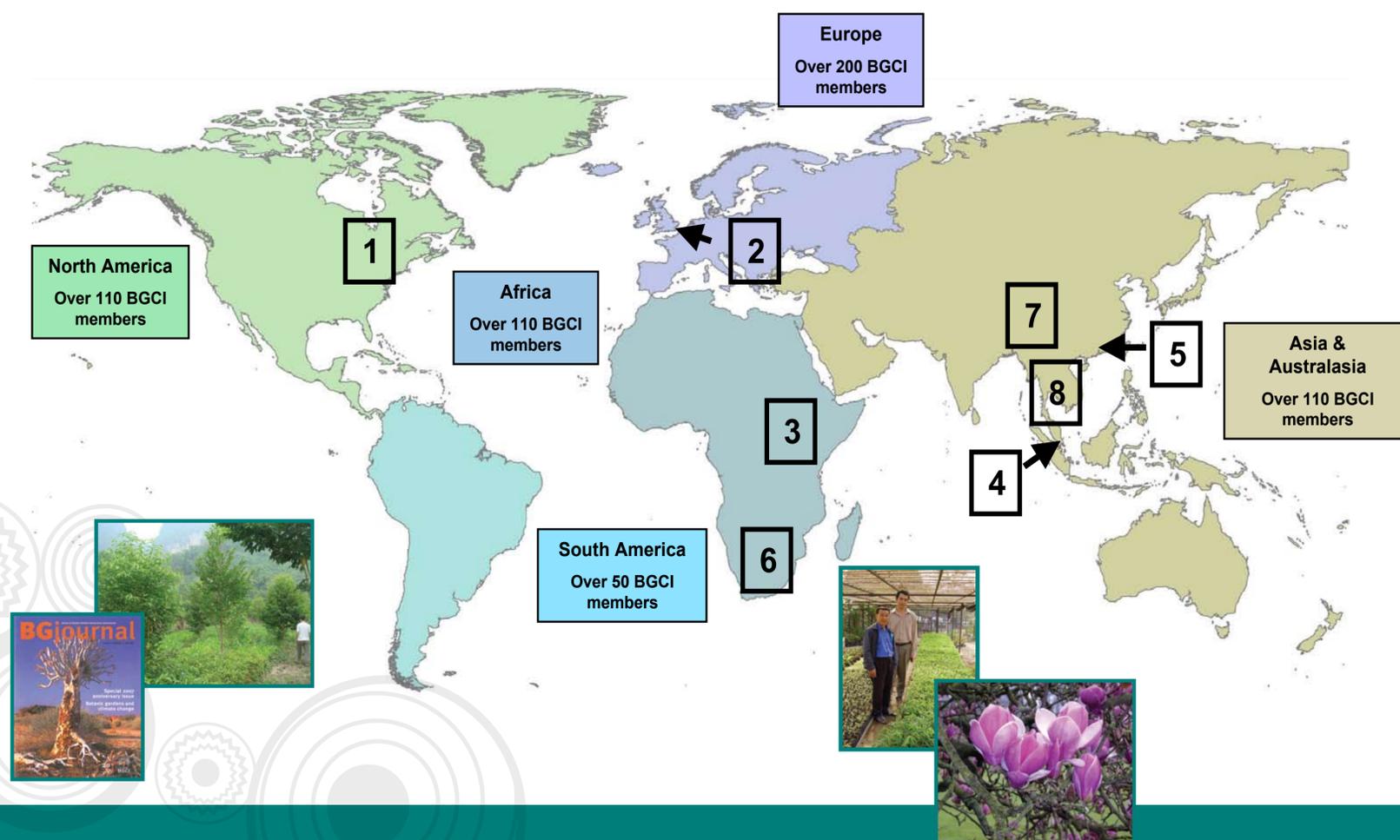
An estimated 400,000 plant species are thought to exist today (we don't yet even know how many species we have!), and over 100,000 of those species are threatened with extinction. This number is expected to climb at an unprecedented rate as global temperatures rise. BGCI and its global network for plant conservation are working to halt this global plant extinction crisis.

1. BGCI's U.S. office at Chicago Botanic Garden
2. BGCI's headquarters at Royal Botanic Gardens, Kew, UK
3. BGCI's Global Strategy for Plant Conservation program officer in Nairobi, Kenya
4. BGCI's Southeast Asia office at Singapore Botanic Garden
5. BGCI's China office at Southern China Botanical Garden

6. Many of the 360 known taxa of aloe are naturally rare, found only in very specific habitats. One species, known as quiver tree (*Aloe dichotoma*), is one of the few species for which the impact of climate change has been intensively studied. The soft branches of this small succulent tree are used by San bushmen in Namibia and South Africa as quivers for their hunting arrows. Southern populations of this species are doing well, but northern populations are dying from recent extreme drought. Overall, climatic conditions are changing so quickly that this long-lived, slow-growing quiver tree is unable to keep up. BGCI is helping to conserve threatened aloe species in East Africa and Madagascar.

7. Over half of the world's magnolia species are threatened with extinction. BGCI is working with Kunming Botanic Gardens to save and restore *Magnolia phanerophlebia*, a threatened species with only 200 trees left in the wild.

8. The valuable, fragrant wood of *Aquilaria* trees has been used for centuries in traditional ceremonies (as incense) and medicinal practices. Nine species are now threatened with extinction, and BGCI is working with communities in Cambodia to develop local plantations of *Aquilaria* to conserve the species and as a source of local income.



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A Changing Climate for Cactus Conservation



BGCI
Plants for the Planet

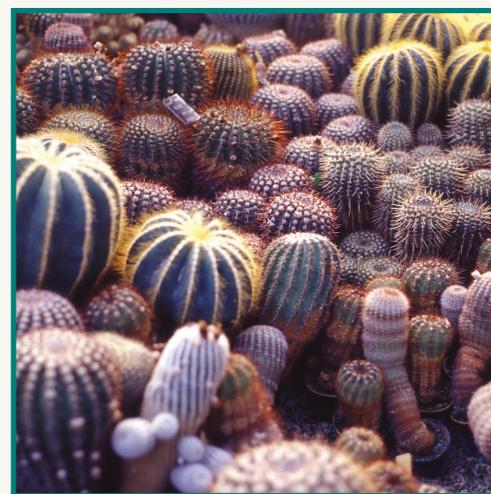
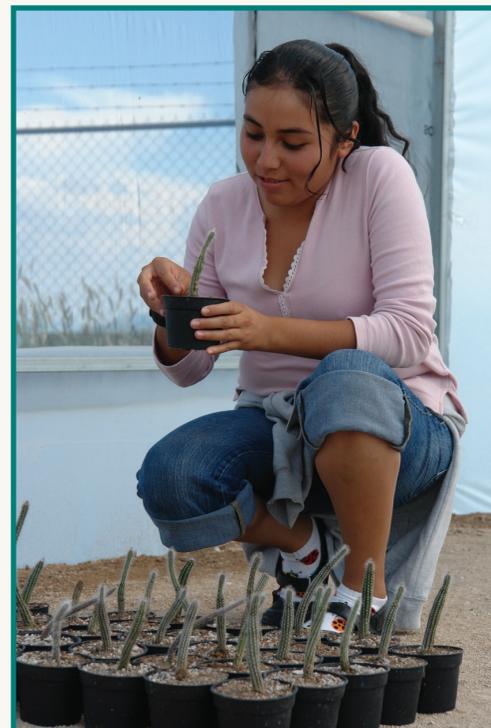
• The prickly but lovable Cactus family contains over 1,400 species that are found only in North and South America. Cacti provide important services to wildlife and humans alike—they are a key source of food and shelter, and their deep roots and drought tolerance help limit soil erosion. Unfortunately, today over 1 in 3 species is threatened with extinction.

• To address the illegal harvesting of wild plants, a major threat, BGCI worked with Mexico's Cadereyta Regional Botanic Garden and its local communities to grow and sell threatened cacti species, limiting collection pressure on wild populations while creating a source of income for the community.



• Even as successful solutions are found, a single new threat has emerged requiring collective action on a global scale. Over the next century, a changing climate will

• lead to higher temperatures and lower rainfall in many of the habitats that cacti call home, such as Mexico's Tehuacan-Cuicatlán Biosphere Reserve. Extensive research into regional climate change has become an urgent call to action: drastic declines in population size are predicted for nearly all species of cactus, with as many as 50% extinct by 2100.



In this changing climate, BGCI and its global network are working at a local, national, regional and global scale to conserve the world's increasingly threatened plant species. More details are available in BGCI's recently-released report on *Plants and Climate Change* and at www.bgci.org.

An Ancient Survivor: The Wollemi Pine



: Before its discovery by David Noble in 1994 in a
: remote area of the Blue Mountains of Australia,
: the Wollemi pine (*Wollemia nobilis*) had been
: known only by fossils left behind millions of
: years ago, such as those in Arizona's Petrified
: Forest National Park. When dinosaurs became
: extinct some 65 million years ago, all members
: of the ancient Araucariaceae family in the
: northern hemisphere joined them. Today, 41
: species of this ancient conifer family can still be found growing in the wild, although
: half of them are now threatened with extinction due largely to human-caused activities
: like habitat destruction.



: To protect the single known *Wollemia* population and provide a safety net against
: extinction, Botanic Gardens Trust in Sydney (a member of BGCI's global network)
: collaborated with other conservation and horticultural organizations to propagate
: this rare conifer and make it available to a global community. A true success story,
: thousands of plants are now in cultivation around the globe, including here at the
: U.S. Botanic Garden.

: These living fossils have survived multiple ice ages, but the world's current
: unprecedented climate changes, including extreme events like floods and droughts,
: are happening with increasing frequency and intensity. Already threatened by our
: activities, will these unique trees survive the further stresses of our rapidly changing climate? BGCI and
: its global network are working to ensure that these plants survive into the future for the benefit of people
: and the planet.



Monkey puzzle trees in Chile: ancient relatives of the Wollemi pine

The Changing Tide of Plant Conservation Plants of the Florida Keys



The Florida Keys are made up of over 1,700 islands, stretching over 100 miles from the southern tip of Florida to Key West. Boasting the only tropical climate in the continental U.S., these islands are home to many unique plant species in the United States. Among them is *Guaiaacum sanctum*, also known as lignum vitae (Latin for “wood of life”). This slow-growing tree is prized for its extremely hard wood, beautiful blue flowers, and medicinal uses. It once grew throughout the Caribbean but is now endangered nearly everywhere due to habitat destruction and centuries of over-harvesting.



The Florida Keys as seen by satellite.
CREDIT: NASA

Such rare plants are now on the front lines of a battle to survive a rapidly changing climate. Over the last 100 years, temperature and sea level have

been slowly rising around the world. In the Florida Keys, sea level rose 8 inches during the previous century and is predicted to rise 18-20 inches over the next 100 years. The retreat of plants from the creeping salt water of the rising ocean has been documented in the Florida Keys for over a decade.



Red areas depict land that would be affected by a 1 meter (3.3 feet) rise in sea level. CREDIT: NASA

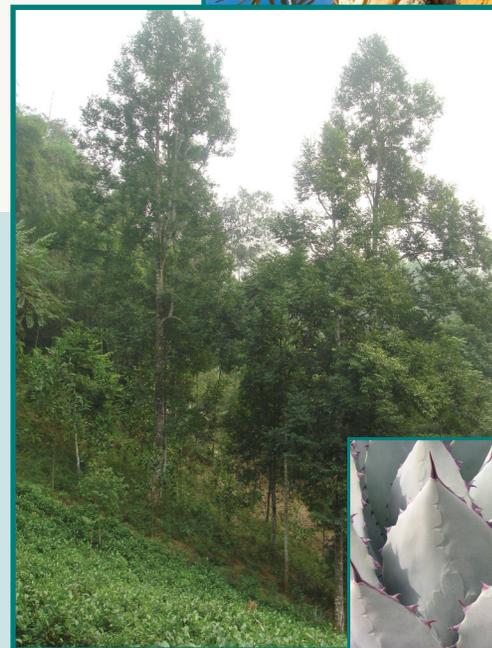
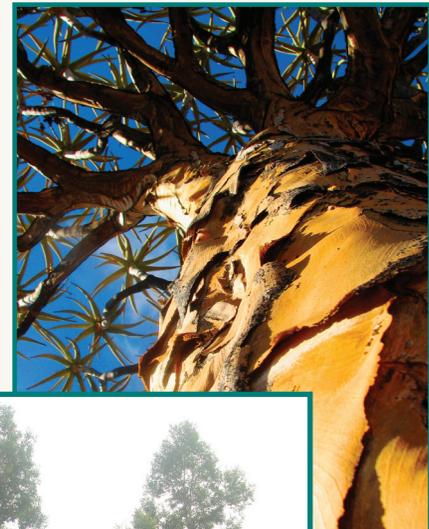
In addition to feeling the squeeze, the Florida Keys are experiencing hurricanes with increasing frequency and severity. Already vulnerable, species face increased risks from ravaging winds and storm surge. In the Florida Keys and around the world, the need for the expertise and facilities of botanic gardens has never been greater.

Saving Plants for a Changing Planet



One of the many important services plants provide is the removal and sequestration of carbon from the atmosphere. Research has shown that highly diverse habitats (such as a prairie) are much better at storing carbon than those with very few species (such as a typical suburban yard).

BGCI and its global network of botanic gardens join governments, businesses and individuals to help mitigate future changes to our climate by conserving and restoring diverse habitats around the world.



You can help by:

- 1) **Tracking changes caused by the changing climate in your own back yard.** Visit Project BudBurst at www.budburst.org for further details.
- 2) **Visiting your local botanic garden** to witness the beauty and diversity and value of plants firsthand.
- 3) **Becoming an advocate** for plants and habitat preservation because they cannot speak for themselves.
- 4) **Growing more native plants and perennials, supporting pollinators, and maintaining less lawn.**