

Executive Summary

North America's flora is diverse, globally unique, irreplaceable, and invaluable. This plant diversity underpins the ecosystem services that support wildlife diversity as well as human health and well-being, including the provisioning of clean air, water, food, medicine, clothing, and shelter. Unfortunately, this natural wealth is increasingly threatened by the compounding negative effects of habitat loss, invasive species, and climate change. Work to conserve North America's plants, and the ecosystem services they provide, requires an integrated blend of conservation actions. This includes: 1) *in situ* (on-site) conservation to ensure species are protected and able to thrive in their native habitat; and 2) *ex situ* (off-site) conservation to ensure genetically diverse and representative plant material is secured outside of native populations and accessible for research, education, and ultimately reintroduction of species to wild populations if and when needed.

These integrated conservation activities are included in the Global Strategy for Plant Conservation (GSPC), an international agreement adopted by the Parties to the Convention on Biological Diversity (CBD) in 2002 and updated in 2010. The GSPC provides guiding principles and 16 defined targets for global plant conservation actions through 2020. Among these is Target 8: '*75% of threatened plant species in accessible ex situ collections, preferably in the country of origin, and 20% of them included in recovery and restoration programs.*' Botanic Gardens Conservation International (BGCI) is a facilitating agency for the global implementation of Target 8, and recently published European and global assessment reports summarizing progress towards this Target. These reports identified 42% of Europe's threatened plants and only 23% of IUCN Red List species in global *ex situ* collections. In North America, botanical organizations across Canada, Mexico, and the United States make significant but largely unquantified contributions toward Target 8. This lack of information hinders strategic planning and collaborative action to conserve North America's flora. To remedy this, BGCI U.S. partnered with the United States Botanic Garden and the Arnold Arboretum of Harvard University to conduct the North American Collections Assessment and identify, for the first time, which threatened North American species are maintained in *ex situ* collections, and which are not.

We generated a consolidated list of threatened plants in North America and compared it with collections information maintained in BGCI's PlantSearch database, which contains taxa-level information on plants maintained in collections at botanical institutions around the world. Results indicate that, while some capacity for *ex situ* conservation is already in place, North America did not reach the 2010 Target 8 goal (*60% of threatened plant species in accessible collections*) and we have a considerable way to go to reach the updated 2020 GSPC Target 8 of 75%. Based upon data from 230 North American collections, we determined that 39% of the 9,496 North American threatened taxa are maintained in germplasm or living plant collections in North America. However, 45% of these collections are known from only one location, raising significant concerns about their conservation application and long-term viability.

Clearly, there is more work to do. These results are a first step in helping the botanical community prioritize the development of *ex situ* conservation collections for threatened taxa not yet in genetically diverse and representative collections. Additional surveying of institutions unable to participate in this assessment may identify threatened taxa not known to be in collections at this time. And, because our focus was at the taxonomic and not population level, next steps must include finer-grained analyses to understand the conservation value of existing collections. Given these results, we make 10 specific recommendations to North America's botanical community to advance conservation efforts and achieve the GSPC's Target 8 by the 2020 deadline: 1) expand capacity for integrated plant conservation; 2) strengthen networks for collaboration; 3) enhance collections management and curation; 4) share collections data; 5) enhance tools to facilitate data-sharing; 6) improve information on conservation status of threatened species; 7) prioritize the development of genetically diverse and secure collections; 8) use collections to advance research; 9) use collections to advance horticultural knowledge; and 10) use collections to support education and outreach. The tasks will not be easy, but are critical to halting the loss of biodiversity.