GGI-Gardens Newsletter

Issue 10 | October 2022

News, highlights, & opportunities from the botanic garden community

• • • • • • • • • • • • • •

Global Genome Initiative for Gardens is an international partnership dedicated to collecting and preserving genome quality tissues for all species of plants on Earth

• • • • • •

UNITED STATES BOTANIC GARDEN

BGCI

• • • • • •

Contact GGI-Gardens:

Email: mgostel@brit.org, ggi@brit.org /
Online: GGI-Gardens Website /
Twitter: #GGIGardens

ANNOUNCEMENT:

**The call for award applications for the
2023 GGI-Gardens Partnership Award Program
is now open!**

Does your garden hold globally unique taxa in its living collections? Is your garden situated in or near a plant biodiversity hotspot? Were you a former GGI-Gardens Awards partner, but still have unrepresented taxa to sample?

The 2023 GGI-Gardens Partnership Award Program, funded by the United States Botanic Garden, and administered through Botanic Garden Conservation International's (BGCI's) Global Botanic Garden Fund and GGI-Gardens, will provide **up to 6 awards of up to $4,500** in 2023 to support sampling activities from living collections with unique families and genera of vascular plants not yet represented in GGBN biorepositories.

These awards aim to facilitate the collection of unrepresented genome-quality tissues and their deposition into a GGBN-associated biobank. Past recipients have used their awards to fund interns, expand their collections through wild germplasm collection, and build capacity at their institutions by improving their supplies, facilities, and training.

Prospective applicants should use the GGI gap analysis tool to determine which taxa in their collection might qualify. BGCI membership is encouraged but not required. To submit a proposal, visit the application portal.
Applications are due by 15 January 2023, and award notifications can be expected between mid-February and early March.

For any questions about the Award Program, please email ggi@brit.org

Left: BG Vienna staff member collecting tissue samples in the greenhouse
Right: A specimen of *Ryticaryum,* a poorly represented genus in collections , sampled for the project

Botanical Garden of the University of Vienna

The Botanical Garden of the University of Vienna was founded in 1754 as a medicinal garden. Over the centuries, the garden has expanded from 2 hectares to 8 hectares, and in the second half of the 19th century, its first glasshouse was built. Today, over half of the garden's roughly 11,500 cultivated taxa are held in greenhouses. As a university garden, the main uses of the collections are scientific research and academic education, but the garden is also engaged in public education, conservation, and horticulture.

Only one greenhouse, a tropical house, is accessible for the public; the others host the scientific collections, including one of the world's largest collections of *Tillandsia* (Bromeliad family) and *Bulbophyllum* (Orchid family). Other special collections are tuberous aroids and Madagascan taxa, many of them also monocots. The samples for GGI-Gardens were collected exclusively in the greenhouses.

Sampling for GGI-Gardens strengthened the cooperation within the garden's staff and transferred knowledge throughout the organizational structure of the garden, as the garden director, head gardener, curator, and intern worked together to plan and execute the project. Taxa were targeted based on the GGBN gap analysis, rarity in collections or nature, difficulty to reach specimens in situ, and internal special interest. Although their work was interrupted several times due to pandemic lockdowns and restrictions, they managed to sample 191 accessions, representing 188 genera and 54 families. They found that a recent inventory just before sampling, in conjunction with thorough, accurate plant labelling, contributed greatly to their success, and preparing and documenting the samples for submission to GGI-Gardens deepened their knowledge and understanding of their collection.

The Botanical Garden of the University of Vienna (Core Facility Botanischer Garten, Universität Wien) received a GGI-Gardens Partner Award in 2021.

All of the samples they collected are documented in the JACQ virtual herbaria database.

Resources

● ● ● ● ● ●

Some highlights of the 7ᵗʰ GBGC were the announcement of several new public, online resources following the themes of the congress that have been made available to the botanic garden community. We list some of these resources here and encourage you to explore and use them:

Index Seminum:
https://www.bgci.org/resources/bgci-hosted-data-tools/index-seminum/
Gardens seeking to share or acquire seed can use this BGCI database to search for or list seed available for exchange with other institutions.

Climate Assessment Tool:
https://www.bgci.org/resources/bgci-hosted-data-tools/climate-assessment-tool/
By comparing occurrence records and current climate data with projected future temperatures, this tool predicts how suitable a taxon might be for a given location under different climate change scenarios.

BGCI's PlantShare:
https://www.bgci.org/resources/bgci-databases/plantshare/
This resource utilizes BGCI's PlantSearch and GardenSearch tools and helps facilitate the responsible exchange of plant material throughout the botanical community.

The Third Edition of the Guidelines for Plant Germplasm Conservation in Australia; published by the Australian Network for Plant Conservation:
https://www.anpc.asn.au/wp-content/uploads/2021/09/GermplasmGuidelinesThirdEdition_FINAL_210902.pdf Though written specifically for the Australian flora, many of the strategies and tools outlined in this document are applicable and relevant for any conservation practitioner interested in
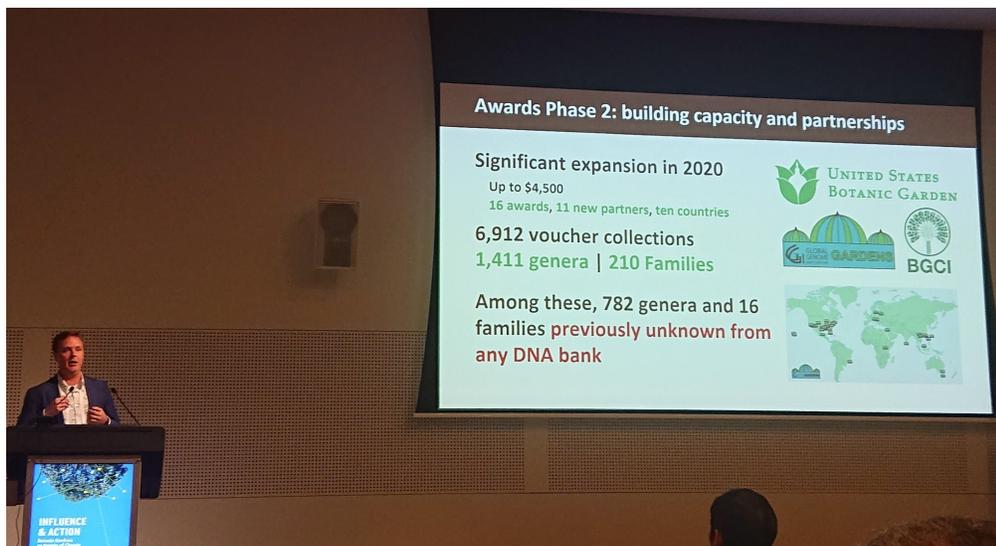
Dr. Gostel presenting at the GBGC's "The Power of Conservation Partnerships" symposium

GGI-Gardens attends 7th Global Botanic Gardens Congress

Between 25–29 September 2022 GGI-Gardens Director, Dr. Morgan Gostel, participated in the 7th Global Botanic Gardens Congress in Melbourne, Australia. This year the Congress followed the theme Influence and Action: Botanic Gardens as Agents of Change and included more than 500 participants from the international botanic garden community. The conference themes highlighted global conversations regarding the role of botanic gardens in plant conservation, adapation to climate change, engagement and education, and achievements for more livable cities and adapting to a post-COVID world.

Dr. Gostel presented as part of a symposium with the United States Botanic Garden, Botanic Gardens Conservation International, US, and Morton Arboretum, entitled "The Power of Conservation Partnerships". This symposium highlighted a number of impactful plant conservation partnerships and Dr. Gostel highlighted the growth and successes of the GGI-Gardens Awards program. This year, GGI-Gardens was able to highlight some of the key results of the 2021 GGI-Gardens Awards Program, which included 16 partner awards and resulted in the collection of more than 7,000 scientific vouchers, representing more than 200 families (>50%) and ca. 1,500 genera (10%) of global vascular plants. Among these, 565 genera and 11 families were previously not known from any DNA biobank.

During his presentation, Dr. Gostel also highlighted a few partner gardens, and summarized some key takeaways from the experience and success of the GGI- Gardens program:
1) Living collections in botanic gardens are uniquely positioned to support critical genomic sequencing needs in the midst of the biodiversity crisis,
2) Partnerships allow organizations and the networks to which they belong to achieve cross-cutting goals that would otherwise not be feasible,
3) Capacity building is an adaptive and iterative process that facilitates exchange of ideas and resources in support of mutually beneficial goals, and
4) Partnerships often lead to unexpected surprises that can open new doors and lead to discovery of broad significance.

You can read more conclusions from the 7ᵗʰ GBGC here: https://www.bgci.org/wp/wp-content/uploads/2022/10/7GBGC-Final-Conclusions-2.pdf