

ROOTS

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THE HEROES OF BOTANIC GARDENS - VOLUNTEERS



**BOTANIC
GARDENS**
CONSERVATION
INTERNATIONAL

Editors:



Annelies Andringa-Davis
Education and Training Officer



Ane Zabaleta
Education and Training Manager



Liz Smith
Membership & Administration Officer

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Further details available from:

- Botanic Gardens Conservation International, Descanso House, 199 Kew Road, Richmond, Surrey TW9 3BW UK. Tel: +44 (0)20 8332 5953, E-mail: info@bgci.org, www.bgci.org
- BGCI (US) Inc, The Huntington Library, Art Collections and Botanical Gardens, 1151 Oxford Rd, San Marino, CA 91108, USA. Tel: +1 626-405-2100, E-mail: usa@bgci.org Internet: www.bgci.org/usa
- BGCI (China), C/O South China Botanical Garden, CAS, 723 Xingke Rd. Guangzhou, 510650, Guangdong, China Tel: (86)20-85231992, Email: xiangying.wen@bgci.org www.bgci.org/china/
- BGCI (Southeast Asia), Greetha Arumugam BGCI Southeast Asia Botanic Gardens (SEABG) Network Manager BGCI Southeast Asia Office Email: greetha.arumugam@bgci.org
- BGCI (Africa), Kirsty Shaw, BGCI Africa Office, IUCN Eastern and Southern Africa Regional Office (ESARO), P.O. Box 68200 - 00200, Nairobi, Kenya, Tel. +254 (0)725295632 Skype: bgci_kirsty, Email: kirsty.shaw@bgci.org, Internet: www.bgci.org

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FIRST WORD

THE HEROES OF BOTANIC GARDENS – VOLUNTEERS

Annelies
Andringa-Davis
Education and
Training Officer



Volunteers are essential to the operation of all botanical gardens, no matter whether gardens are big or small. Employees alone cannot manage the numerous tasks required, and in smaller gardens, any activities beyond the regular program often rely heavily on, or are entirely carried out by, volunteers. They contribute to education, carry out horticultural tasks, are board members and perform many other tasks as explained by the different authors in this edition.

Volunteering offers a lot of benefits for both volunteer and garden. It provides opportunities to gain new experiences and skills that can enhance your professional career, fosters social connections, boosts self-esteem, offers a sense of purpose, and improves your overall health (Güntert et al, 2022). I would, for example, never had my job as Education and Training Officer if I hadn't served as a board member at a small botanical garden in the Philippines and attended a local SEABG (Southeast Asia Botanic Garden) congress to represent my garden.

It's remarkable how volunteering can boost your health. It enhances your social connections, and a stronger social network leads to better coping strategies for everyday life. Volunteering fosters a sense of belonging, which can alleviate depressive symptoms. It also gives you a sense of purpose, making you feel that your contributions matter. Over time, this can lead to a more positive mood, increased happiness, higher self-esteem, greater life satisfaction, and more successful task completion. These benefits don't appear overnight but develop gradually, with older volunteers often experiencing more significant health benefits than younger ones (Güntert et al, 2022 and Community First Yorkshire, 2024).

Volunteer work should be self-fulfilling for the individual and help the organization. Motivation is crucial, and maintaining it requires thoughtful consideration. Volunteers are more likely to stay engaged when their roles offer a variety of skills, a clear sense of task identity, and significance. They also need to feel they have autonomy in their work. When these elements are part of their role, volunteers are more likely to be happy and motivated.

A volunteer coordinator who fosters that autonomy and is there to provide supervision, support, and development opportunities is invaluable to any garden. It's important to have regular discussions with volunteers about their role, providing feedback, and making sure that relevant and effective communication channels are in place. (Community First Yorkshire, 2024; National Council of Social Service, 2020). Rebecca Hansell, our Communication Officer in BGCI, provides a helpful list of easily implementable strategies for gardens on page 5.



Image by Pexels from Pixabay.



Volunteer Suzanne Pleash at Abingdon High School. (Rhonda Gracie)

Companies increasingly recognize the value of volunteering. In 2022, 65% of US companies provided their staff volunteer time off (360MatchPro, 2024). Naples Botanical Garden (p.7) offers a great example. More than 50 community volunteers from a local store came over to volunteer in their garden simultaneously. Rimbu Dahan in Malaysia has a dedicated program for research volunteers, where students gain a whole new set of skills by volunteering in their garden on page 11.

Volunteers are invaluable, taking on a wide range of tasks, as Colin Khoury et al. show in San Diego Botanical Garden (p.15). In some instances, volunteers have even been the driving force behind the creation of a botanical garden. Araribá BG (p.18) wouldn't exist if it weren't for an enthusiastic group of volunteers who at some point established the garden together. A similar story unfolded at the University of North Florida Botanical Garden where volunteers took over the garden during COVID time and saved it from becoming a turf grass area. You can read all about this on page number 22.

Every garden relies on volunteers to manage their daily operations. The contributions of volunteers to the daily activities of Medellín Botanical Garden (p.26) and University Brunei Darussalam Botanical Research Centre (p.29) illustrate just how much value they bring. The final article of this Roots on p.33 highlights a unique example of volunteers designing programs for diverse target groups. Volunteers of the Gardens by the Bay have been instrumental in developing programs for autistic children and migrant workers.

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Migrant workers watching the virtual tour. (Gardens by the Bay)



Ecology interns Nurul Khaliesah, Nur Hannan Amelin and Nur Dhanisyah on a birdwatching excursion to Genting Highlands. (Bilqis Hijjas)

OPPORTUNITIES FOR ALL! SPREADING THE WORD ABOUT VOLUNTEERING ACCESSIBILITY



Volunteering can be incredibly valuable to both individuals and organisations, but we need to use effective communication tools to ensure that we are reaching diverse audiences. This will then allow us to best utilise their varied skills, knowledge, and viewpoints and create innovative, effective conservation initiatives.

Volunteering was a vital part of my own personal career change in my mid 20s. Myself, and many others, have firsthand experience of the benefits of volunteering. The opportunity to learn new skills, explore different career options, and build my CV and professional networks helped me to find my way into science communication, which would never have been on my radar otherwise. Volunteering has a myriad of benefits to both organisations and individuals. In addition to those mentioned above, volunteering has been seen to improve both mental and physical health, reduce isolation, strengthen communities, build confidence, offer additional skills to the existing workforce, and offer increased workable hours to teams or organisations with low budgets.

There is no dispute of the value that volunteering can offer when done properly. However, there have also been discussions over the years about those who may struggle to take advantage of such opportunities due to accessibility issues. Many of the concerns revolve around the use of unpaid internships or long-term volunteering contracts, which are only accessible to those who can afford to work for free and, therefore, for some there is a barrier to access these career starting opportunities.

In addition to these concerns, there are other groups who would benefit from volunteering (and could offer valuable skills) who have restricted access for other reasons. These groups include those with childcare or caring responsibilities, those who have physical accessibility issues that are not accommodated for within organisations, those with mental health issues or hidden disabilities, or those which have limited means of transportation to commit to volunteering opportunities in remote areas.

Image by Steve Buissonne from Pixabay.

“Volunteering has been seen to improve both mental and physical health, reduce isolation, strengthen communities, build confidence, offer additional skills to the existing workforce, and offer increased work hours to teams or organisations with low budgets.”



These obstacles can be overcome – but we need to get better at communicating the ways in which we are accommodating volunteers from varied backgrounds and with varying needs. Through better communication we can better attract – and retain – more people from diverse backgrounds and life experience, who can gain the practical experience and social benefits of volunteering within our organisations. This will also offer organisations the opportunity to benefit from the new skillsets that these individuals bring and the different viewpoints they can offer.

Some simple ideas that we can all implement to better reach out to and maintain relationships with a diverse range of volunteers include:

- Understanding motivations and what they want out of volunteering
- Training and empowerment for confidence in volunteering roles
- Utilise specific interests and skills
- Personal/Professional development opportunities
- Talk to volunteers, gather feedback, and treat them as part of the team
- Showing appreciation through initiatives such as Awards, Events, Opportunities/Training, Unique experiences, etc.

Using communications to improve access to volunteering overlaps considerably with the tactics used to offer education to a wider audience, and the ever-growing number of digital tools at our disposal are making this easier than ever. Additionally, there is increasingly overlap between science and creative expression which can easily be utilised with the skillsets within volunteer teams.

Some more ways to offer innovative volunteering options to appeal to wider audiences, include:

- **Digital volunteering** where individuals can contribute from home. This can be utilised in various ways, including the digitisation of records or the monitoring of camera trap footage/images.
- **Social media/multi-media** content creators can include video and image content, the researching of trends, or the writing of captions for posts.
- **On site arts and crafts** can be used to host educational workshops or as fundraising for specific projects with organisations.
- **Interviews** with staff/behind-the-scenes can be used on social media, YouTube, or in written form on websites or newsletters to give insight into the inner workings of our organisations.
- **Dedicated projects/fixed-term projects** such as a seasonal project or a short series of videos, which limits the time commitment needed from volunteers.
- **Physical activities/practical jobs on site** such as fixing fences, digging new flower beds, biodiversity monitoring, etc. These activities can utilise skills that volunteers already have.
- **Online lectures/workshops** which offer opportunities for volunteers to share their knowledge, passion, or technical skills to your audiences.
- **Blog writing/vlogging** to showcase different viewpoints and the varied backgrounds and interests of your volunteers.

And more – utilise the unique skills that your volunteers have to offer! Start the conversation and see what skills are already hidden within your organisation.

Getting creative and using technology can help to ensure that our organisations are showcasing different voices that help our work to appeal to a wide audience.

If we put the work in to ensure accessibility, and communicate those efforts effectively to a wide audience, then there is no reason why we cannot create valuable volunteering opportunities that provide enrichment and empowerment for all involved, whilst also strengthening global conservation efforts.



Image by StockSnap from Pixabay,

“Getting creative and using technology can help to ensure that our organisations are showcasing different voices that help our work to appeal to a wide audience.”



Image by StockSnap from Pixabay.

AUTHOR

Rebecca Hansell
Communications Officer
Botanic Gardens Conservation
International
rebecca.hansell@bgci.org



THE HEART OF COMMUNITY

With community groups and employers embracing and encouraging volunteer experiences, Naples Botanical Garden is changing the landscape of traditional volunteerism. We are always looking for new and effective ways to expand our relationships with our local audience; one way to do that is by offering community volunteer projects to groups both large and small. By reaching out to those who live and work here, we are developing connections between Garden and community, one that goes beyond the typical visitor experience. It has been a rewarding and engaging experience for everyone involved.

On the morning of April 23, 2024, the Garden buzzed with excitement as 14 members of our Horticulture, Operations, Education, and Safety & Security teams assembled in the parking lot. We were preparing for that morning's community volunteer project, the biggest we had ever planned. The parking lot soon filled with 53 employees from Publix Supermarkets, one of our region's largest employers, smiling and ready to work. After a brief welcome from our President & CEO, Donna McGinnis, the Publix crew split up among staff members and descended upon our new Evenstad Horticulture Campus, which was in its final stages of completion and in need of fresh mulch around freshly planted landscaping.

The Publix volunteer day—one of many such events we've hosted in the past few years—is a new and evolving model for the Garden. This is not an isolated example, but only one of the ways we have been able to connect with our local friends as our community volunteer program has blossomed over the past three years.

Above: Volunteers from Publix, a Florida-based supermarket chain. (John Eder)

*"It was a great experience. Ian from Naples Botanical Garden was awesome! He taught us a lot about invasive species, and what is native to Florida. Thanks for allowing us this opportunity."
Risa Wildeman, Clinical Educator for Naples Community Hospital*



Left: Arthrex volunteers working with Conservation staff to prepare plants for beach dune restoration. (Karen Pattison)

We choose to use the term “community volunteers” as opposed to “corporate volunteers” because we include school groups and social groups along with company-related volunteering. We consider them all members of the same larger community, regardless of their affiliation. As these groups started reaching out to us about volunteering for a day, we realized the potential of these connections. For many volunteers, it’s the first time they have been to the Garden, and what better way to experience it than by contributing in such a meaningful way. Some companies have also included community volunteering as an important part of their work culture. Arthrex, a global medical device company with headquarters in Naples, includes volunteerism as one of their benefits, offering employees eight hours of Volunteer Paid Time Off (VPTO) each year, and they have been to the Garden multiple times in small groups (5-7 volunteers) to assist in our native nursery. Our very first volunteer group, Greater Naples Leadership, has also been here many times with 30-40 volunteers each time, completing large-scale projects with our Horticulture and Conservation teams in just a few hours. Greater Naples Leadership President Donna Messer values the shared mission of improving the community as a whole, “We are honored to partner with Naples Botanical Garden as a team and as individual volunteers. The Garden’s work to protect, conserve, educate, and inspire others to be good stewards of the environment aligns closely with GNL’s mission of bettering the community. We are proud to support their efforts!”



Garden staff answer volunteer questions about the morning’s project. (John Eder)



The League Club volunteers prepare family activity packets for Garden visitors. (Karen Pattison)

Left: Students from Champions for Learning assist with repotting. (John Eder)



Left: White Birding Tower. (Courtesy of Naples Botanical Garden)

Traditional vs Community Volunteers

In the past, we relied on a more traditional style of volunteering, one in which single individuals sign up for regular shifts. On any given day we have volunteers working with our Horticulture, Conservation & Natural Resources, and Education & Visitor Experience departments. They work in the display gardens and nurseries and serve as guest-facing ambassadors. These are dedicated people who are happy to adhere to a regular weekly schedule and have skills and institutional knowledge that come only with experience. While this volunteer work is integral to the Garden, we found some limitations. Incoming volunteers do not necessarily want to be assigned a regular schedule; they want to perform a wide variety of tasks, and they enjoy volunteering at multiple organizations in the community to gain new experiences. Our community volunteer program fills those needs and meets our needs as well. These groups provide larger numbers to tackle big projects, and they bring with them enthusiasm for trying something new and exciting. Donna McGinnis, President & CEO of the Garden, recognizes the advantages of non-traditional volunteers, “Community volunteer events offer the opportunity to diversify our volunteer corps to include families, educators, students, and community groups. While they do not volunteer on a typical weekly schedule, they give us their all when they’re here – in between going to school, working, and their next travel adventure.” Another benefit is that for some groups, these are not necessarily one-time opportunities, but the first of many times they will volunteer with us, giving us the opportunity to create long lasting relationships. The good thing is, community volunteering exists alongside, and not at the exclusion of, our traditional volunteers.

Volunteering and Learning

In developing our group volunteer programs, we discovered that hands-on labor was not enough to satisfy our helpers. Although eager to be of service, community volunteers also want to know the why behind their efforts. For this reason, we have added an educational component to their experience. For each event we have a member of our Education & Visitor Experience team working alongside the volunteers to talk about the Garden and its mission, and how their project contributes to our progress. For our mulching projects we talk about the benefits of mulch, aside from the aesthetic value. When repotting plants in the native nursery, we discuss how these plants with their strong roots help to keep soil and sand intact. The volunteers ask thoughtful questions and are sincerely interested in knowing how their efforts are helping the Garden. According to Risa Wildeman, Clinical Educator for Naples Community Hospital Center for Learning and Innovation, “It was a great experience. Ian from Naples Botanical Garden was awesome! He taught us a lot about invasive species and what is native to Florida. Thanks for allowing us this opportunity.”



Volunteers from Naples Community Hospital show their pride and strength. (John Eder)

"Greater Naples Leadership is honored to partner with the Naples Botanical Garden as a team and as individual volunteers. The Garden's work to protect, conserve, educate, and inspire others to be good stewards of the environment aligns closely with GNL's mission of bettering the community. We are proud to support their efforts!"
Donna Messer, President, Greater Naples Leadership



The League Club volunteers prepare WONDER packets for Garden visitors. (Karen Pattison)



A Bright Future

On the Publix workday, the 53 volunteers (literally) dug in, spreading mulch throughout the Horticulture Campus landscaping. The joy in this simple task was evident. Groups of people were laughing, joking, and interacting with the Garden team as they got the job done. Their enthusiasm was contagious. After they left, the Garden staff marveled at all they had accomplished in just a few short hours. We haven't perfected the experience yet; there is no finish line for community volunteering. We will adapt and adjust as we grow because our success has also revealed some challenges: for our community volunteer program to succeed, we must be flexible in terms of scheduling and staffing, while also planning ahead to ensure that opportunities continue to be available for groups of varying sizes. Our ultimate goal is to provide rewarding experiences for community volunteers, and to share our mission and our passion with people with whom we live and work; good people who genuinely want to make a difference. By welcoming our community to the Garden for a morning project, by educating them about the Garden and our efforts, both global and local, we are creating new opportunities for the Garden and for the community. While each project may be done in a day, the advocacy and support gained from these experiences lasts long into the future.

Kapnick Brazilian Garden. (Karen Pattison)

“Community volunteer events offer the opportunity to diversify our volunteer corps to include families, educators, students, and community groups.”
**Donna McGinnis, President & CEO,
Naples Botanical Garden**

AUTHOR

Karen Pattison
Naples Botanical Garden
kpattison@naplesgarden.org
4820 Bashore Drive
Naples, Florida 34112
239.325.1932

LIVING AND LEARNING ACROSS THE DISCIPLINARY DIVIDE

Rimbun Dahan in Selangor, Malaysia, is a family-run arboretum featuring Southeast Asian species. In Malaysia, all university students complete an internship in their field, ranging from two to eight months. Rimbun Dahan has hosted 10 such interns living on site. Their tasks range from helping with horticultural maintenance, to collecting GPS data, website updating, and herbarium work. Because we are also an arts residency, interns must engage with our resident artists, support arts open days, and go on excursions to local arts events, plus pursue their own interests through a personal project. Although hosting interns is labour intensive for our small organisation, we believe that encouraging curiosity and cross-disciplinary knowledge supports holistic understanding among key future leaders of the importance of our natural environment to our way of life.

Rimbun Dahan (RD) is a small family-run arboretum with a collection focused on indigenous Southeast Asian species. Since we started native planting thirty years ago, Rimbun Dahan now provides a habitat for a wide range of biodiversity, including almost a hundred species of butterflies, as well as wild boar, civet cats and otters.

We are also an arts centre, with a residency program for artists which has run for thirty years. We host artists in all disciplines, including painters, composers, dancers and writers. The 14-acre complex features contemporary architecture and several century-old heritage buildings that have been moved to the site, reconstructed and restored.

Into this context, rich in both nature and culture, we welcome a number of university student interns every year, to live and work on site for two to eight months. Thanks to our broad range of projects at Rimbun Dahan, we can incorporate interns from numerous fields, from the arts to the natural sciences. Our last 10 interns have come from ecology, fine arts, dance, mathematics, and horticulture.

Above: Horticulture intern Amirul Arif at a contemporary shadow puppetry performance by visiting French artists at Rimbun Dahan. (Errman Saif)

“There are so many species of native plants in one area. I did read on RD’s website about all the plants but reading it and seeing it in front of me was totally different! It was almost an overwhelming experience.”
Nurul Khaliesah

In the Malaysian education system, schoolchildren must choose at age 15 whether to focus on Arts or Sciences. Persisting parental emphasis on traditionally rewarding careers like becoming a doctor or engineer generally pushes stronger students towards the Science stream. This, coupled with an unimaginative approach to teaching the humanities which continues to emphasize rote learning (even in subjects like Morals), leads to many Malaysian students being siloed in either Arts or Science, and having little understanding of the cross-disciplinary big picture.

Living at Rimbun Dahan tends to be an eye-opener for our young interns, as they encounter a world beyond their usual contexts. All the interns, no matter their original discipline, are required to work in all the tasks carried out across the compound. This includes traditional horticultural tasks like watering, sweeping, pruning, and potting, as well as collecting GPS location data for trees, updating our Hortis database and website, and preparing herbarium specimens. The interns also support the arts residency program by welcoming incoming artists, accompanying excursions to performances and exhibitions, serving as studio hands, guiding public visitors on open days, and hanging exhibitions. Occasionally the interns pitch in for all-hands-on-deck tasks, like clearing fallen trees or making nutmeg cordial.

We also expect our interns to carry out a personal project of their own choice, to feed their curiosity and give them a sense of personal achievement. Although this may seem like a simple assignment in a Western pedagogical context, in Malaysia students are rarely expected to pursue their own interests, engage in imaginative play, or direct their own learning. For some of our interns, this presents the biggest challenge of their internship, but it has proved a valuable exercise in learning how to set goals, the importance of learning by doing, and not being afraid to make mistakes.

Ecology student Danisyah, whose personal project involved sifting soil samples to assess earthworm concentrations, said, "It was the most random task since I had no idea [what I was doing or how I was going to achieve it.] It was challenging but I took it as a fun experience."



Fine arts intern Nurul Hani Ezzati meeting professional photographer Halim Henry Berbar while on an excursion to Kuala Lumpur's Chinatown. (Syarfa Nabilah)

"As a fine art student I would never have thought that I would be able to learn while being in nature."
Syarfa Nabilah



Above: Ecology intern Nur Danisyah mounting herbarium samples. (Bilqis Hijjas)

Left: Horticulture interns Errman Saif and Amirul Arif repotting Dipterocarp seedlings. (Bilqis Hijjas)



For many of the interns, no matter their background, the most memorable or surprising aspect of their internship was just spending sustained time in green environments. Malaysia had one of the longest out-of-school periods in the world due to the COVID pandemic. Book- or screen-based learning, for a generation of students who spent much of their university life learning remotely, cannot come close to face-to-face encounters with biodiversity. Khaliesah wrote, “There are so many species of native plants in one area. I did read on RD’s website about all the plants but reading it and seeing it in front of me was totally different! It was almost an overwhelming experience.” As Dariel expressed it from his perspective as a painting student, “I was continuously immersed with the rainforest, nature, the sound it makes during the morning and at night... the hues you get in between from dawn to sunset.”

Several of the interns mentioned how memorable it was to spend time tramping about with my mother Angela, the director of the arboretum. At 74 years old, she has formidable stamina and can be seen at all hours pushing wheelbarrows or collecting foliage samples with her galah ((a long bamboo pole with a metal pruner at the end, manually activated by a string)), often trailing a few panting interns in her wake. “For the first few days I was exhausted,” ecology student Khaliesah remembers, “But after a while I got used to it and even found it fun!”

Being able and interested to learn about something outside their fields also came as a surprise. Nabilah said, “As a fine art student I would never have thought that I would be able to learn while being in nature.” Her co-intern Dariel mentioned, “Since RD, whenever I’m in natural terrain filled with trees, I proudly educate my friends about the ‘shyness of trees.’”

Several of the interns also expressed a new-found respect and understanding for people on the other side of the Arts-Science divide. “I got to see the artists doing their artwork and I was so amazed,” remembers ecology student Danisyah, “It was my first time seeing real art being created in front of my eyes.” From the other side, art student Dariel mentioned, “Seeing the conservation team [working on site] showed me that they have the same passion doing something that we love and care about, and I was impressed by how much they enjoy and treasure their work.”

Mathematics intern Thibault Lim explaining his curation of artworks in the gallery at Rimbun Dahan. (Bilqis Hijjas)

“It was my first time seeing real art being created in front of my eyes.”
Nur Danisyah



Horticulture interns Nur Danisyah Mohd, Nurul Khaliesah Anuar and Nur Hannan Amelin Azizan on an excursion to the Tropical Rainforest Conservation & Research Center. (Bilqis Hijjas)



Fine arts intern Dariel Fazree hanging artworks in the gallery at Rimbun Dahan. (Bilqis Hijjas)

Sometimes these eye-openers happened within their own disciplines. Watching a contemporary dance performance led to fine art student Hani Ezzati's epiphany, "I realize art is so much more than colours and shapes." And for the ecology interns, a birdwatching trip to the mountains, which Hannan described as, "not exactly something on my to-do list on a typical weekend," also led to greater insight into their own field. Her co-intern Khaliesah remembers, "It changed my perspective on birds. All the people involved in collecting data from live animals have my utmost respect; it's no joke and requires a lot of patience and attention to detail."

Providing enlightening or potentially life-changing experiences on an individual level is not one of the basic aims of Rimbun Dahan as an organisation. And because we are a small team, we sometimes find the labour-intensive responsibility of hosting interns to be quite onerous. But when faced with persistent cross-disciplinary myopia among those involved in both the arts and the sciences in Malaysia, especially when we as an organisation are deeply entrenched in both camps, we find it necessary to encourage young people to be curious about the world outside their silos. We hope that our interns will go on to be key leaders with a wide perspective on humanity's need for both nature and culture. At the very least, we hope that we can provide just a few people with a more holistic viewpoint to enable them not just to be well-rounded citizens, but to lead more interesting lives.



Rimbun Dahan interns helping with the crowd at Open Day, February 2024. (Bilqis Hijjas)

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AUTHOR

Bilqis Hijjas
Rimbun Dahan
Selangor, Malaysia
bilqis@rimbundahan.org
+6017-310-3769

VOLUNTEERS INSPIRE DECADES OF GROWTH AT SAN DIEGO BOTANIC GARDEN



Celebrating over 50 years as a public garden, San Diego Botanic Garden (SDBG) was founded through grassroots volunteer activism and continues to thrive today in large part because of the contributions of its hundreds of committed volunteers. This article highlights the contributions of three individuals or teams who, through their sustained efforts, have helped this beach town community public garden grow into a modern institution with robust horticultural facilities, thriving educational programs, and impactful science and conservation initiatives.

San Diego Botanic Garden (SDBG) is a 37-acre urban oasis located in Encinitas, California, just north of the City of San Diego. After converting from a private ranch to a County of San Diego Park in the late 1950s, due to the generous wish of Ruth Larabee that her land should become a public space where community members have access to plants as well as to birds and other fauna, a citizen group composed of friends and other nature lovers quickly emerged. By the early 1980s, the Quail Gardens Docent Society had been organized to help take care of the park. These early volunteers were the bedrock of a local community-driven effort to cultivate a botanic garden for the public to enjoy, learn from, and be inspired by. And even as a nonprofit organization took on management of Quail Botanical Gardens a decade later, and as the plants and staff grew and the institutional name evolved over further decades, the Garden's volunteers have remained the foundation of the enthusiasm, creativity, and hard work that have turned a grassroots vision into reality.

Above: SDBG's Hamilton Children's Garden, the largest of such gardens on the west coast of the USA. (SDBG)

These early volunteers were the bedrock of a local community-driven effort to cultivate a botanic garden for the public to enjoy, learn from, and be inspired by.



Left: Canary Island dragon tree (*Dracaena draco* (L.) L.) forest at San Diego Botanic Garden, some of the oldest of the garden's trees. (SDBG)

SDBG's four miles (6.4 km) of trails now offer access to over 5,300 plant taxa, including 300 plants for which SDBG is the only garden maintaining the species. Fifteen gardens represent different regions of the world, 12 are dedicated to thematic demonstration, and the bamboo collection is the largest in North America. Many of the gardens offer expansive views of the Pacific Ocean. Two garden areas conserve native southern maritime chaparral and coastal sage scrub vegetation, little of which persists near the coast in San Diego County. This is a habitat for an incredible diversity of birds and insects as well as reptiles, rabbits, and coyotes. SDBG also has three children's gardens, including its flagship, the one-acre Hamilton Children's Garden, the largest of such gardens on the West Coast of the USA. Alongside its staff, SDBG's hundreds of volunteers throughout its history built, and continue to maintain, these unique green spaces.

In the past decade, SDBG's activities and programs have again made major leaps forward, and in no small part due to its volunteers. Here, as examples of the tremendous contributions of these individuals over its history, including the current 200 active volunteers, we celebrate three individuals or teams who, through their sustained efforts, have helped this beach town community public garden grow into a modern institution with robust horticultural facilities, thriving educational programs, and impactful science and conservation initiatives.

Community engagement and public programs

With the increasing complexity of community engagement activities and public programs that SDBG hosts in a relatively small space, the Garden relies heavily on talented and committed volunteers who can assist at the drop of a hat. Cheryl Rehome has consistently been one of these volunteers, filling roles as diverse as garden ambassador, welcome ambassador, donor parties' host, education steward, gift shop manager, bartender, holiday events worker, and children's activities coordinator. After her career as a teacher in public education, Cheryl started volunteering in 2018 and became a docent in 2019. She was recognized as Volunteer of the Month in November 2021 and has more recently taken on a leadership role as Vice Chair of the Volunteer Committee. Known for her willingness to engage in new experiences, Cheryl has embraced opportunities to contribute to the success of activities as diverse as the Science, Art, and Play in Garden Spaces (SAPLinGS) program, where she has actively engaged families in nature-based art and science activities, as well as school group tours, our annual holiday extravaganza "Lightscape", and Access Afternoons, a program focused on garden accessibility. She encourages her fellow volunteers to similarly try different roles.

We celebrate three individuals or teams who, through their sustained efforts, have helped this beach town community public garden grow into a modern institution with robust horticultural facilities, thriving educational programs, and impactful science and conservation initiatives.



View of the Pacific Ocean from desert gardens at the San Diego Botanic Garden. (SDBG)



Cheryl Rehome serving as a host for one of San Diego Botanic Garden's many events. (SDBG)



Infrastructure, facilities, and events

A thriving garden always needs new infrastructure, and repair for degrading facilities, and this can amount to a major expense. A dynamic team of a dozen volunteers, led by Bill Rawlings, calling themselves the Garden Gnomes, have become experts in creatively acquiring materials and then building or fixing many dozens of items every year. Recently they have become essential to the construction of world-class horticultural displays, such as our “Savage Gardens” and “World of Orchids” events. This group of volunteers, also called the “Special Ops” team, can tackle just about any task, and do it with a smile. Their handiness, paired with countless hours contributed, have resulted in completed projects as varied as construction and structural maintenance of a bridge for an indoor bog, Gift Shop and Membership desks, to propagation tables and shade structures in the nursery. They paint, they build, they brainstorm, they draw blueprints, and their skill and enthusiasm know no bounds.

Plant collections management

As SDBG’s plant collections have grown and incorporated more unique and threatened plants, record keeping and mapping of the garden beds and the plants that grow in them has become ever more essential. The Garden actively participates in several conservation networks, including the Global Conservation Consortium for Oak and the parallel consortium for Cycads. Researchers and other colleagues around the world also regularly request seeds and other plant tissues from these collections.

JoLynn Morice, over the past seven years, has brought her expertise in computer programming, data management, and Geographic Information Systems (GIS) to the Garden, enabling SDBG to better track and monitor its 11,800 accessions of more than 5,300 plant taxa growing throughout the 37-acre landscape. As a relatively small garden with a limited curatorial staffing, this volunteer expertise has been pivotal. JoLynn started volunteering in 2017, offering to help map the plant collection. She had some experience with ArcGIS and was eager to learn more while working with two other volunteers at that time. That fall semester, she obtained a certificate in ArcGIS from a local college to further expand her skills. She soon became the core GIS and mapping volunteer at SDBG. Today, she continues to map SDBG’s expanding plant collections and works with the horticulture department to improve and maintain the grounds.

SDBG’s evolution over the past five decades has been tremendous, but we are far from done. The grassroots vision of an urban oasis that inspires people and greens the planet will continue. Within the Garden, there are many plans to help make its 37 acres even more accessible, enjoyable, and educational for all. Further afield, SDBG is expanding its collaborations with local, state, and national agencies and governments, community and nonprofit organizations, academic institutions, industry partners, and Tribal communities to fulfill our mission to “create, share, and apply plant wisdom in our world.” What is certain is that SDBG’s dedicated volunteers will continue to be central to success.

Garden Gnomes. (SDBG)



JoLynn in the garden. (SDBG)

With the increasing complexity of community engagement activities and public programs that SDBG hosts in a relatively small space, the Garden relies heavily on talented and committed volunteers who can assist at the drop of a hat.

AUTHORS

Colin K. Khoury,
Jill Gardner,
Felise Buckheart,
Jeremy Bugarchich,
Caren Clayton,
Brandi Eide,
Sarah Morgan

San Diego Botanic Garden,
300 Quail Gardens Dr., Encinitas,
CA 92024 USA
Corresponding author: Colin K.
Khoury, ckhoury@sdbgarden.org

A BOTANICAL GARDEN FOUNDED BY VOLUNTEERS



We often think of botanical gardens as age-old institutions, either public or private, with technical departments and bureaucratic frameworks. But what if you were told about a botanical garden emerging through volunteer work? The Araribá Botanical Garden in Brazil turns this notion on its head. Born from the volunteer initiative at Sítio Duas Cachoeiras, this model highlights the fervour and zest individuals have for nature. Volunteers pitch in with their time and expertise, aiding in biodiversity conservation and environmental education. This approach forges meaningful bonds between communities and the natural world, underscoring the role of volunteerism in biodiversity preservation.

The history of the Araribá Botanical Garden (JBA) began long before it became an official institution, eventually culminating in its dedication to ecological conservation, restoration, and environmental education. Volunteer activities were already underway in 1985. Guaraci began to manage the landscape around him, focusing on planting food crops and removing cattle on a property owned by Guaraci M. Diniz Jr's family, a farm in the municipality of Amparo in the rural area called Sítio Duas Cachoeiras. During this period, the government planned a large project to build water dams in Amparo, a city in the countryside of São Paulo, Brazil. This project was set to take place in a priority ecological conservation area, with no consideration for environmental concerns, and very close to the current JBA. Concerned about the impact of these works, a group of volunteers from the local community came together to protest and try to stop this construction.

Above: Fieldwork volunteers.
(Guaraci M. Diniz Jr.)

“They are involved in everything, from helping promoting activities, forming new benchmarks for the institution's management, searching for sources of funding, to major maintenance and planting activities”



Left: Volunteers enjoying themselves. (Guaraci M. Diniz Jr.)

After all this mobilisation -a story that deserves to be told in a separate chapter- the group continued to meet and during this process some people became interested in the project and joined, resulting into the first group of volunteers. More people became involved in the project, making it possible to organise new activities.

Sítio Duas Cachoeiras has always been a hotbed of pioneering initiatives, such as developing the first rural hostel in Brazil, the first organic farm in the region, and the site of the first courses in Brazil on agroforestry systems, given by Ernst Götsch. Nature itself began to recover in this area, attracting "its volunteers" as well, such as some wild animals including the jacuguacu (*Penelope obscura*) and paca (*Cuniculus paca*), as well as other microorganisms. The place became a refuge for both nature and people, and the quality improved after soil recovery and ecological restoration.

Many of the children who joined environmental education programmes later returned as interns as part of their university courses and then as volunteers, forming the technical group together with the volunteers who were already part of the institution.

Examples worth mentioning. Volunteers who were becoming discouraged and were abandoning their academic education due to the reality of destructive agricultural practices in the business world found new inspiration after spending some time as volunteers at Sítio Duas Cachoeiras. After experiencing best practices for integration and harmony with nature, they realized these methods could be applied to their own projects. They resumed their studies in their respective fields and now form part of the technical group of the NGO GAEA (Grupo de Ações e Estudos Ambientais), the managing institution of JB Araribá.

Other volunteers were stimulated and inspired by the activities involving use of medicinal plants and the possibility of developing products for use by the community, others rescuing bees and promoting the continuity of pollination, as well as developing medicinal bee products and food products. Currently, all these volunteers take part in the JBA's Voluntary Conservation programme, earmarking a percentage of the sales value of the products for conservation and ecological restoration actions.

However, challenges such as raising funds for the day-to-day maintenance of the green areas are constant. Periodic evaluations of our management plan have shown that volunteer participation is essential for the garden's sustainability. They are involved in everything, from helping promoting activities, forming new benchmarks for the institution's management, searching for sources of funding, to major maintenance



Training of volunteers in environmental education. (Guaraci M. Diniz Jr.)

“This direct interaction enriches the educational experience and strengthens the bond between the community and the Botanical Garden.”

“Many of the children who joined environmental education programmes, later returned as interns as part of their university courses and then as volunteers, forming the technical group together with the volunteers who were already part of the institution.”



Volunteers working in land use planning. (Guaraci M. Diniz Jr.)



and planting activities, and organising joint efforts by volunteers and friends of the botanical garden, where everyone participates in whatever way they can with the coordination of more experienced volunteers.

About ten years ago the group of volunteers got together to think about a new structure that would represent, unify and consolidate all the activities and initiatives developed by the NGO GAEA and Sítio Duas Cachoeiras. The Araribá Botanical Garden (JBA) was established from this movement of volunteers, serving as a culmination of 40 years of dedicated work. It honours the participatory process, the shared experiences, and the empowerment of the volunteers who have journeyed together through this history.

The Araribá Botanical Garden, with its roots deep in Sítio Duas Cachoeiras, has been an example of how dedication and volunteer work can turn a vision into reality.

What makes JBA volunteers special is their dedication and diversity. They come from different backgrounds and bring a wealth of knowledge and skills. This diversity allows the garden to offer a wide range of activities and programmes catering to different needs.

Volunteers are the backbone of the JBA. Without them, many of the activities and programmes would not be possible. They not only contribute their time and effort, but they also bring new ideas and perspectives, continually enriching the garden. From the onset, volunteers have played a crucial role, from drawing up the action plan to implementing educational and conservation activities. This collaborative approach has not only strengthened the local community but has also created a sustainable management model.

Volunteers can get involved in any activity they wish. They have responsibilities for activities and deliverables within their role, as well as active participation in the decision-making process and the organisation's strategic planning. This direct interaction enriches the educational experience and strengthens the bond between the community and the Botanical Garden.

Debora Agatha is an agricultural engineer who did an internship as a volunteer and after completing his degree is now developing course activities, training and educational itineraries on medicinal plants and essential oils. Tania Rebello visited as a journalist one day 26 years ago to write an article for the press. She was very interested in the initiative and later returned periodically as a volunteer for general activities. Currently, she is responsible for the communication plans and writes the news item about the garden as a volunteer journalist.

Fieldwork volunteers. (Guaraci M. Diniz Jr.)



Biologist returning as volunteer. (Guaraci M. Diniz Jr.)

“They come from different backgrounds and bring a wealth of knowledge and skills. This diversity allows the garden offer a wide range of activities and programmes, catering to different needs.”



Fieldwork volunteers. (Guaraci M. Diniz Jr.)

So how can people get more involved in activities?

- People get involved and identify with stories - Invite people to learn about your organisation's history and, better still, write that story together.
- People are engaged when they believe in the mission and cause - People need to understand the problems, but they also need to see themselves as part of the solution.
- People believe in the idea when the institution "walks the talk" - when they witness and understand the reasons behind the best conservation, restoration, and livelihood practices being implemented. People feel part of something when they are integrated, respected and valued. They feel they belong to the Botanical Garden.

And to do this you will have to

- a) create a welcoming and inclusive environment: Make sure everyone feels welcome and valued.
- b) offer learning opportunities: Volunteers are more likely to get involved if they can learn something new.
- c) recognise and celebrate volunteers' contributions: Small gestures of recognition can make a big difference.
- d) communicate the mission and objectives clearly: Volunteers want to know that they are contributing to something meaningful.

There's a song in Brazilian popular music that says "When we like it, of course we take care of it". For people to take care of something, they need to understand it and feel connected to it. This philosophy guides the actions and activities at the Araribá Botanical Garden.



"... "when we like it, of course we take care of it". For people to take care of something, they need to understand it and feel connected to it."

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AUTHORS

Guaraci M. Diniz Jr.
General Manager
Araribá Botanical Garden
projetos@gaea.org.br

Luiz H. R. Baqueiro
Biologist / Project Manager
GAEA (Environmental Studies
and Action Group)
biodiversidade@gaea.org.br



BLOSSOMING RESILIENCE: HOW UNF VOLUNTEERS TRANSFORMED A CAMPUS AMIDST CRISIS

In October 2020, The University of North Florida’s Grounds Department faced a 50% staffing shortage. They urgently sought volunteers to transform the campus into a Botanical Garden. Within 12 hours, six dedicated volunteers – practicing social distancing – began renovating weedy landscape beds and curating new displays. Their efforts saved an overgrown native wildflower field management converted back to turf. Now, ten garden displays proudly hold the prestigious Florida-Friendly Landscaping Gold certification. These volunteers contribute to maintenance, education, tours, and outreach, ensuring the garden thrives and promotes sustainable practices. The program has grown from 2,800 annual volunteer hours to 9,000 hours.

In October 2020, the University of North Florida (UNF) encountered a significant challenge. During a global pandemic, the university's grounds department experienced a 50% staffing shortage, risking the campus goal of becoming a botanical garden. With sixteen unfilled positions, the grounds crew could not maintain over 100 acres of carefully designed landscapes and more than 1,400 acres at an acceptable appearance level. Management asked the grounds department to reduce the number of landscape beds and convert many gardens to turf. Refusing to let all the efforts in achieving botanical garden status go to waste, UNF Horticulturist and volunteer Rhonda Gracie reached out to Larry Figart, Urban Forestry Agent at the local extension services office to propose creating a volunteer program. However, their involvement would not count towards any volunteer extension service hours. What followed was a remarkable demonstration of community spirit and dedication amid a global pandemic.

Above: Setzer Family Healing Garden with native bee patch and sculptures by unf art department students. (Rhonda Gracie)



Volunteers Jan Holder, Diana Openbrier and Joyce Busgalia. (Rhonda Gracie)



Left: Fairy Garden workshop.
(Rhonda Gracie)

Their rapid and efficient efforts were crucial in rescuing several endangered garden beds, including an overgrown native wildflower field.



Bright Future Teen volunteers at the Edge: enhancing new native pollinator habitat.
(Rhonda Gracie)

Within twelve hours of the call for assistance to help UNF develop a first-class botanical garden, six dedicated garden volunteers promptly responded. They quickly rallied their fellow gardening enthusiasts to join them in making a difference while adhering to social distancing guidelines. Their rapid and efficient efforts were crucial in rescuing several endangered garden beds, including an overgrown native wildflower field. This immediate action revitalized UNF's botanical garden mission and progress. Ever since then, the volunteers have taken on more responsibilities. Besides looking after the gardens, they also help with conservation, educational outreach, and guided tours. In the first year, the program had 2,800 volunteer hours. But thanks to the volunteers' passion and the growing recognition of the garden's importance, this number has shot up to 9,000 annual volunteer hours amounting to 153 volunteers so far. This increase in volunteerism shows how dedicated the community is to the garden's success and how much they want to keep helping it grow.

The volunteers' impact goes beyond just making the campus look better. They've converted over five acres of grass into new living museums. Volunteer Steve Davies wrote, "It is amazing to see the seamless integration of the academic content percolating inside the buildings with the surrounding gardens and walkways so that the learning experience is amplified and nurtured as students pass through (and loiter) in the outdoor spaces." Notable exhibits include The Edge, a one-acre native garden at the forest's edge, International Palm Glade, The Setzer Family Healing adjacent to Brooks College of Health, and Bioswale next to Engineering, which was co-designed with Kelly Tesiero, a volunteer and owner of The Elegant Garden. Kelly also has provided Gracie with guidance throughout this journey. She introduced Gracie to volunteer Tosha Gaines, who helped her turn her garden plan and pitch deck into a success, resulting in over \$600K in donations.



UNF butterflygarden FFL certificate, with left to right Nancy Travers, Rhonda Gracie and Joyce Buscalgia. (Rhonda Gracie)



Gracie switched from traditional landscape maintenance to the nine Florida-Friendly Landscaping (FFL) principles to improve maintenance efficiency. This change aimed to reduce task times, costs, and resources while focusing on using native and FFL plants, water conservation, reducing chemical inputs, and attracting wildlife, which is essential for maintaining Florida's unique ecosystems. For instance, we utilized oak leaves as mulch, adopted chop-and-drop pruning and trimming practices, and left a mowing buffer at the water's edge. This approach boosted beneficial insects and songbird populations while improving plant health. As a result of these efforts, the garden received ten gold certifications. These certificates showcase and educate and educate the public on implementing these principles at home without facing issues with their Home Owners Associations.

Saturday Volunteer Work Day with Diana Openbrier demonstrating living fungus in the field using a microscope. (Rhonda Gracie)

Educational programs have become a cornerstone of our volunteer activities. Marty Gottlieb, one of our founding volunteers, played a key role in ensuring that our master gardeners receive Continuing Education credit when they work at the UNF Botanical Garden. Volunteers host events, give guided tours, run special workshops on topics such as Florida-Friendly Landscaping (FFL), work to restore our native hooded pitcher plant habitat with our environmental students, eliminate invasive species with the wetland club, and promote the importance of native bees that earned UNF recognition as a Bee Campus USA. These efforts, led by our dedicated volunteers, have significantly enhanced the garden's educational value, and brought people closer to nature, making us all proud of our collective accomplishments.

Our team of volunteers is a tapestry of dedication and resilience, with individuals bringing their unique strengths and stories to our program. Diana Openbrier, our "gardenian" angel, continues to inspire us with her unwavering commitment, even in the face of a life-altering health diagnosis. Diana provides and prepares lunch for our Saturday volunteer group and makes teas, jellies, and cookies for our tour guests throughout the year using ingredients from the garden, helping promote the garden's edible ornamental bounty. Like many of our other volunteers who have gone through unexpected life-altering events, Diana understands nature is medicine and the therapeutic value of being in nature and communing with fellow volunteers. Joyce Buscaglia's return from retirement to support our growing volunteer program exemplifies the spirit of dedication and selflessness that defines our team. Joyce works five days a week and volunteers on Saturdays in the garden with her husband, Larry Austin, to ensure the program continues to grow and run smoothly.



Mayors Youth at Work Program volunteers Keenan Jackson and Xavier Lawrence, assembling an aroid display. (Rhonda Gracie)

The diverse nature of our volunteer team, including retirees, master gardeners, tree stewards, garden enthusiasts, adults with disabilities, and our campus students, faculty, and staff, embodies the essence of community and collaboration. Everyone's unique background and skills contribute to the success of our program, fostering a sense of belonging and purpose. Through the efforts of volunteers like Susan Plesha, we have introduced the High School Bright Futures Program for 9th to 12th-grade students looking to complete their service hour requirements, which provides valuable life skills to teenagers, further enriching our diverse community.

Our volunteer program is not just a supplement to the grounds team's efforts but a vital component of UNF's Botanical Garden. The garden's existence and success are indebted to our dedicated volunteers. Their contributions ensure the garden remains a vibrant, educational, and inspiring space for all visitors. Attracting and retaining volunteers is crucial for the continued success and growth of the garden, and we value each one.

To promote the garden and engage with potential volunteers, we offer free tours to local garden groups, extension service offices, high school teachers, counselors, schools, and agencies that provide on-the-job training services for individuals with disabilities. Consequently, our program has successfully recruited several new team members with intellectual development disabilities and facilitated their meaningful employment opportunities elsewhere."

Our experience has shown us the value of adaptability and understanding people's strengths. We align volunteers with tasks they enjoy ensuring they feel fulfilled. Volunteers receive an orientation tour and training, along with tools and equipment. We also provide refreshments and food to create a friendly atmosphere. Joyce provides weekly updates to improve communication and recognize achievements for the week. We host a spring thank-you breakfast and a fall potluck BBQ and distribute garden swag like volunteer shirts, socks, and other tchotchkes.

Today, thanks to our dedicated staff and volunteers, UNF is a registered botanical garden. Ten of our curated displays boast the prestigious FFL Gold certification. The design principles, plant selection, and maintenance combine to create a wonderful meditative experience while supporting UNF's academic mission.



The flyer features a top photograph of two young women in blue UNF shirts standing in a garden. Below the photo, the title "Bright Futures Teen Volunteer Program" is prominently displayed. The flyer is divided into several sections: "PROGRAM BENEFITS" with a list of five bullet points; "NEED COMMUNITY SERVICE HOURS?" with a recycling symbol icon and text explaining how the program counts towards requirements; "HOURS THAT FIT YOUR SCHEDULE" with a leaf icon and text detailing the weekly schedule; and "CONTACT US" with a yellow background. At the bottom, there is a contact information box for Rhonda Gracie, Horticulturist, including her address, phone number, and email. The UNF Botanical Garden logo is also present.

Bright Futures Teen Volunteer Program.

AUTHOR

Rhonda Gracie
University of North Florida,
Physical Facilities,
Grounds Department Botanical
Garden Horticulturist

1 UNF Drive, Bldg./ 64, rm 1005,
Jacksonville, FL 32224
rhonda.gracie@unf.edu

CELEBRATING THE DIVERSITY AND DEDICATION OF THE VOLUNTEERS AT THE BOTANICAL GARDEN OF MEDELLÍN



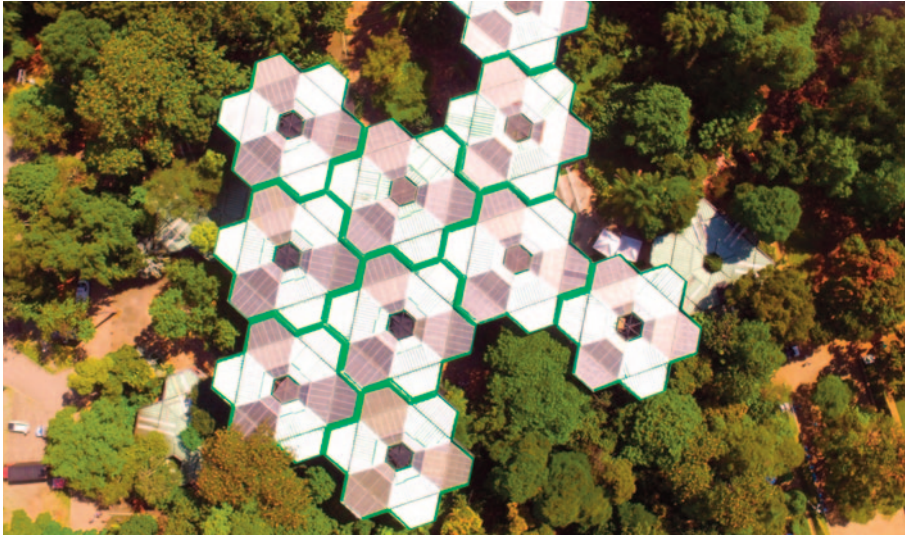
Volunteers are vital at our Botanical Garden of Medellín (BGM), offering skills and diverse expertise from horticulture to computer sciences. Our volunteer team, comprising multiple nationalities, supports activities like the plant production nursery and butterfly house, guiding educational tours in various languages, and developing landscaping projects in our living plant collections. Local enthusiasts and botanists contribute by processing, mounting, identifying, and curating the over 100,000 specimens in our herbarium. Inspired by Colombia's beauty and biodiversity, volunteers find the BGM an ideal place to learn and apply their skills. Highlighting these dedicated individuals will underscore their fundamental role in our garden's success.

Left: Volunteers at the entrance of the Scientific Building at Medellín Botanical Garden. (Maria Jose Zuluaga)

As one of Colombia's oldest and most inspiring botanical gardens, the Botanical Garden of Medellín (BGM) plays a leading role in the conservation, education, and research of tropical plants. BGM maintains a living collection of 1,200 taxa, including aroids, bromeliads, cycads, orchids, palms, and representative species of the seasonally dry tropical forest and the humid tropical forest. The Herbarium JAUM, one of the largest herbaria in Colombia, preserves over 100,000 specimens. BGM spans 13.2 hectares of gardens with greenhouses, a modern pavilion, and a central lake. BGM is primarily funded through its projects and fundraising opportunities, employs over 400 staff, and has around six volunteers yearly. With over two million visitors annually, BGM can improve knowledge and positive attitudes towards plant conservation of the local community, especially children. Since 2015, BGM has been a member of BGCI, contributing to the challenge of securing plant diversity for the well-being of humankind and the planet. We recently obtained accreditation in the interactive community of arboreta (ArbNet) to support the everyday purposes of public gardens.



Carlos Orozco, educator at the Botanical Garden of Medellín teaching a horticulture workshop. (Jardín Botánico de Medellín)



Left: A view over the Orquideorama, a structure for social events and exhibitions. (Maria Jose Zuluaga)

This paper aims to highlight the vital role of volunteers at the Botanical Garden of Medellín, detailing their contributions, responsibilities, and impact on the garden's operations.

Our volunteer program is less than three years old, but we have had the opportunity to receive varied contributions from both Colombian and foreign volunteers. Volunteers sign an agreement for six months which can be renewed. No minimum number of hours is required; it generally starts with 4 hours per week.

Volunteers at BGM contribute significantly to strategic areas of the garden. They are involved in various activities, including:

- **Herbarium Support:** Volunteers are needed throughout the year to help document the biodiversity of Colombian flora through handling, organizing, and photographing plant specimens.
- **Nursery and Living Collections Maintenance:** Volunteers support horticultural work in the production nursery and living collections, performing tasks such as weeding, transplanting, soil fertilization, cleaning the nursery, raking, watering, filling bags, and seed processing as directed by supervisors.
- **Research Support:** Volunteers assist in research projects related to basic and applied research on flora, conservation in action, and urban resilience. This volunteering includes activities at the Botanical Garden of Medellín and the Centello Natural Reserve in Jardín, Antioquia.
- **Education:** Volunteers with expertise in outreach, horticulture, or conservation can provide a lecture and strengthen the mission processes.
- **Butterfly house:** Volunteers assist with butterfly breeding, research on their diet and behaviour, and identification of arthropods. They also study the interactions between plants, butterflies, and pathogenic fungi on host plants.

Being a volunteer at BGM includes participating in training processes, broadening the BGM's network of contacts, and expanding possibilities in research and process improvement by networking with people from different backgrounds. A typical day as a volunteer involves various activities, from working in the herbarium to assisting with nursery maintenance and supporting research projects. Volunteers help during events like the annual botanical symposium and the City Nature Challenge, which have been crucial in raising public awareness about biodiversity and conservation. In addition, volunteers have also contributed to our conservation efforts. They have assisted in collecting information on endangered species at herbarium collections, providing valuable data that informs our conservation strategies. Furthermore, they have joint field trips where we recognise and document endangered species in their natural habitats.



A view of the educational trail of prehistoric plants "Alvaro Cogollo Pacheco". (Jardín Botánico de Medellín)

The Botanical Garden of Medellín benefits immensely from the dedication and efforts of its volunteers.

Detailed information about the volunteer process is available on the Medellín Botanical Garden's website <https://www.botanicomedellin.org/>.



Gypsyn Quiroz, volunteer in the plant nursery. (Maria Jose Zuluaga)



BGM volunteers are integrated into the garden's education programs, contributing to the development and, in some cases, delivery of educational content. We had a volunteer who gave a workshop on horticulture to the staff of the Botanical Garden. They play a critical role in enhancing the educational outcomes for visitors and students, often bringing unique skills and perspectives to the programs.

BGM volunteers are special due to their dedication, unique skills, and significant contributions to the garden. They support the garden's operations, maintenance, and educational programs, playing a critical role in the success of these initiatives. Based on successful practices at BGM, attracting and retaining volunteers involves offering meaningful opportunities, training and development, and recognizing their contributions.

Conclusion: We have a long way to go to expand our offerings to volunteers, but their unique experiences significantly contribute to our work. We will have to enhance our volunteer program by providing specialized training, growth opportunities, and better recognition. Improving communication and community engagement will further amplify their valuable contributions.

The Botanical Garden of Medellín benefits immensely from the dedication and efforts of its volunteers. Their involvement is crucial to the garden's operations and conservation initiatives. Volunteering at BGM offers a unique and enriching experience, contributing to personal growth as well as the garden's mission.

BGM volunteers are integrated into the garden's education programs, contributing to the development and, in some cases, delivery of educational content. They have an important role in enhancing the educational outcomes for visitors and students, often bringing unique skills and perspectives to the programs.

Volunteers at BGM are special due to their dedication, unique skills, and significant contributions. They support the garden's operations, maintenance, and educational programs, playing a critical role in the success of these initiatives. Based on successful practices at BGM, attracting and retaining volunteers involves offering meaningful opportunities, training and development, and recognizing their contributions.

The Botanical Garden of Medellín benefits immensely from the dedication and efforts of its volunteers. Their involvement is crucial to the garden's operations, and conservation initiatives. Volunteering at BGM offers a unique and enriching experience, contributing to personal growth and the garden's mission.



Above: Sebastián Tobón, volunteer in the Butterfly house. (María Jose Zuluaga)

Above left: Juan Pablo Tobón with a group at the JAUM Herbarium. (Jardín Botánico de Medellín)



Isabella Quiroz, volunteer at the JAUM Herbarium. (María Jose Zuluaga)

AUTHORS

Ana María Benavides*
German Restrepo
Marcela Pérez

Botanical Garden of Medellín,
anamaria.benavides@jbotanico.org

NURTURING FUTURE BOTANISTS: VOLUNTEER IMPACT AT UBD BOTANICAL RESEARCH CENTRE



The Universiti Brunei Darussalam Botanical Research Centre (UBD BRC) is Brunei Darussalam's first botanic garden. As a young botanic garden, the UBD BRC has engaged many volunteers for its research, conservation, and education activities. Our volunteers help with fieldwork on flora diversity and ecological research, contribute to conservation activities, and assist with educational visits, training workshops, and guided tours of the garden's living collections. Volunteers also help design educational materials and create engaging content for our social media platforms. In turn, volunteers gain knowledge and experience and acquire skills that nurture future biodiversity researchers.

Introduction

The Universiti Brunei Darussalam Botanical Research Centre (UBD BRC), established in 2013 and officially inaugurated in 2018, proudly stands as Brunei Darussalam's first botanic garden. Managed by the Institute for Biodiversity and Environmental Research (IBER), UBD BRC plays a crucial role in preserving Brunei's rich biodiversity, serving as a living repository for the country's native plant species. Nestled in one of the rarest forest types, the UBD BRC is uniquely situated in Bornean lowland heath forest, locally known as Kerangas forest, and the living collections of the botanic garden are carefully curated to highlight Kerangas flora.

Above: Student volunteers helping set up a forest plot to investigate tree diversity at the UBD BRC research area. (UBD BRC)

"Volunteering offered experiences and knowledge that were beyond my university education"

Leon Liu Zhaoqing,
UBD BRC volunteer



Above: UBD BRC volunteer, Nurun, taking students on an informative guided tour of the garden. (UBD BRC)

Left: A volunteer, Nurin, interacting with primary school students during an educational programme at the UBD BRC. (UBD BRC)

As a small and young botanic garden, the UBD BRC started to engage and involve volunteers early on, realizing that volunteers are critical to our garden's development. Averaging around 30 volunteers yearly, our volunteers are often students from Universiti Brunei Darussalam who are interested in plant science but have increasingly involved other students with diverse backgrounds as well as members of the community. Our volunteers invest valuable time, energy, and ideas to provide essential support in our fieldwork and educational activities, enhancing our research capabilities and public outreach. Their participation is key to achieving the garden's mission of protecting and sharing knowledge about tropical plants, as well as realizing its vision of becoming a center of excellence in botanical research, education, and conservation.

Hands-on Conservation and Research

UBD BRC is a bustling centre for botanical research and conservation. Working with our team, the UBD BRC volunteers experience firsthand fieldwork in the pristine tropical forests of Brunei Darussalam. This opportunity for exciting adventures into our forests and encountering unique biodiversity is often the most attractive aspect of working with the UBD BRC for our volunteers. During these fieldwork outings, we train our volunteers in plant collection techniques, and they help us to collect plants, seeds, and seedlings with a special focus on rare, endemic, and endangered plants, such as *Rubroshorea albida*, *Cotylelobium burckii*, *Agathis borneensis* and *Dipterocarpus borneensis*, for the UBD BRC's *ex situ* conservation efforts. Planting these collections into our nurseries and garden gives volunteers a sense of fulfilment as they personally help to expand our living collections. Some even discover they have incredibly green thumbs!

Working with key stakeholders and partners, the UBD BRC also offers dedicated conservation activities such as relocating species from their natural habitats and tree planting programs. These activities often attract volunteers from our partner agencies and have led to activities such as relocation of *Nepenthes* species from threatened habitats to our garden, and the planting of high conservation value tree species in degraded areas. During these activities, volunteers help with preparation of the sites and plants, as well as long-term monitoring of their growth and survival. Nurul Hazlina, Botanist at the UBD BRC notes: "Despite challenges such as replicating natural habitats and securing long-term support, working with volunteers for these activities has led to closer engagement with our partners and has allowed us to raise awareness of the importance of these conservation activities".

"Working with the research team at UBD BRC has been transformative." Wadina, UBD BRC volunteer



Seed sowing of native tree species collected from the forest, was carried out by UBD BRC volunteers inside the shade house. (UBD BRC)



Enriching Educational Outreach and Engagement

The involvement of volunteers in our educational program often brings new and innovative ideas, resulting in a more engaging and relevant approach for the younger generations. Educational outreach and engagement are fundamental to the UBD BRC and volunteers play a pivotal role in these efforts. Our volunteers help with educational visits and guided tours of the garden's living collections. Their enthusiasm and passion shines through as they deliver informative explanations that highlight the ecological, medicinal, and ethnobotanical importance and unique features of various plant species, such as carnivorous plants from the *Nepenthes* family, the medicinal plants *Eurycoma longifolia* and *Morinda citrifolia*, and forest trees, *Gymnostoma nobile* and *Calophyllum inophyllum*. These tours offer visitors a closer look at the garden's diverse flora and the role that plants play in the ecosystem and our daily lives.

Training workshops offered by the UBD BRC are also supported by our volunteers. Our workshops provide hands-on experience in nurturing and growing different plant species, share skills in preparation of herbarium specimens and botanical art, and teach everyday practices that encourage sustainable living. Volunteers often assist us with running these workshops, and they too end up learning valuable knowledge and skills!

Creating Engaging Educational Content

In today's fast paced world, creating engaging educational content is essential for connecting the public with nature. To connect with the public, UBD BRC volunteers help design educational materials such as posters, flyers, and structured programs. They also help us manage UBD BRC's social media platforms like Instagram and Facebook, engaging a broader audience through regular updates, interactive content, and visual storytelling. Events like Fern Appreciation Day and UBD Plantastique Day are particularly popular, boosting engagement and raising awareness about the garden's diverse flora and conservation efforts.



Above: Leo Dancert, from the School of Industrial Biology, France helping to collect seeds during fieldwork. (UBD BRC)

Above left: Mu'az Ilyas, a UBD BRC volunteer, facilitated the treasure hunt activity during an educational school visit to the garden. (UBD BRC)

Below left: Volunteers planting flowering plants around the UBD BRC garden. (UBD BRC)

Below: Volunteers assisting with specimen identification at Brunei National Herbarium. (UBD BRC)





Join Us and Make a Difference

Volunteering at UBD BRC offers significant benefits, providing valuable knowledge and experience while fostering future biodiversity researchers. Volunteers gain practical skills and field experience, enhancing their career prospects in botany and environmental science. Many volunteers move into key positions within the field, thanks to the hands-on experience and professional development opportunities at UBD BRC.

Wadina shares, "Working with the research team at UBD BRC has been transformative. As a geology student, the hands-on research in local forests has deepened my understanding and appreciation for them. Despite the challenges, each task was rewarding, pushing me beyond my comfort zone and preparing me for the workforce. The supportive and passionate team at the Institute for Biodiversity and Environmental Research has truly inspired me."

Lim Jenn Qi adds, "Beyond learning plant names and their uses, I developed a personal appreciation for them. Being in the forest, getting to know plants up close, made them feel like cherished friends rather than just objects of study."

Leon Liu Zhaoqing notes, "Volunteering offered experiences and knowledge that were beyond my university education, like sample collection in the forest. Brunei is a paradise for plant studies, and this opportunity allowed me to connect with diverse people and customs, enriching my academic and personal growth."

Get Involved

We invite passionate individuals to join the UBD BRC as volunteers and contribute to our vital work in botanical research and conservation. Gain hands-on experience, develop valuable skills, and make a meaningful impact on preserving Brunei's unique plant life. Follow us on Instagram @ubd.botanicalgarden and visit our website brc.iber.ubd.edu.bn for updates, opportunities, and more information. Ready to contribute? Reach out to us at office.brc@ubd.edu.bn. Your participation can help us achieve our goals and make a difference in Brunei's efforts in protecting our biodiversity.

Post-relocation monitoring of *Nepenthes rafflesiana* at Berakas Forest Reserve by volunteers to assess mortality and growth of the pitcher plants. (UBD BRC)

"Beyond learning plant names and their uses, I developed a personal appreciation for them. Being in the forest, getting to know plants up close, made them feel like cherished friends rather than just objects of study."

Lim Jenn Qi, UBD BRC volunteer

AUTHORS

Nurul Hazlina Zaini,
Mohammad Amiruddin Ruslan,
Soon Boon Yu,
Associate Professor
Dr Rahayu Sukmaria Sukri*

Universiti Brunei Darussalam
Botanical Research Centre
Institute for Biodiversity and
Environmental Research,
Universiti Brunei Darussalam

*Email address:
rahayu.sukri@ubd.edu.bn

CULTIVATING COMMUNITY: FLOURISHING HEART OF GARDENS BY THE BAY

Gardens by the Bay, a national garden in Singapore, harnesses the power of a dedicated volunteer programme to cultivate a thriving community hub that promotes social cohesion, mental wellness, and inclusivity. This is part of its objective to be a People’s Garden – a verdant space where people from all walks of life can gather and bond amidst greenery.

Nestled in the heart of downtown Singapore, a lush oasis stands against the backdrop of concrete skyscrapers. Gardens by the Bay is a horticultural show garden, located just minutes away from the city centre. Standing on 101 hectares of reclaimed land, the Gardens was first conceptualised in 2005 as part of the government’s ‘City in a Garden’ vision. The nation’s founding Prime Minister, Mr Lee Kuan Yew, saw greenery as a social leveller, and believed it was important for all Singaporeans to have access to green spaces.

Since its opening in 2012, Gardens by the Bay (the Gardens) has welcomed over 100 million local and international visitors. The Gardens showcases over 1.5 million fascinating plants from across the globe. With its themed gardens, cooled conservatories, innovative architecture as well as event and dining spaces, it is regarded as one of Asia’s foremost garden destinations.

Beyond a premier horticultural attraction, the Gardens aims to be a People’s Garden - a space for the entire community to not just enjoy and forge connections, but also play a part in caring for. This is aptly embodied by the Gardens’ pool of volunteers, who provide support through initiatives such as:



Above: Seniors from a nursing home enjoying their visit to the Gardens. (Gardens by the Bay)

Top: Gardens by the Bay, a national garden in Singapore. (Gardens by the Bay)



Left: A Garden Chaperon volunteer conducting a tour. (Gardens by the Bay)

- **Citizen Horticulturists and Indoor Horticulturists:** Maintaining greenery in the Gardens' outdoor areas and cooled conservatories
- **Garden Chaperons:** Conducting guided tours
- **Service Ambassadors:** Manning the information counter at the Gardens' entrance and attending to visitor enquiries

Together with the team of staff at the Gardens, these dedicated individuals play a key role in cultivating a world of gardens for all to own, enjoy and cherish.

A Space for All to Reap Nature's Benefits

Since 2012, Gardens by the Bay's volunteer programme has brought together over a thousand individuals from varied backgrounds. These include retirees, teachers, engineers, migrant workers, youths, individuals with special needs, and many others – all of whom share a passion for the Gardens and a desire to serve the community. From the Service Ambassadors that greet visitors when they arrive, to the Garden Chaperons that enthral visitors with their knowledge of greenery, volunteers play a key role in engaging directly with the community, helping them form lasting memories and a deeper connection to the Gardens. On any given day, visitors from all walks of life can be spotted enjoying the Gardens' offerings.

The Gardens enlist volunteers in conducting programmes that encourage mindfulness, relaxation, and emotional well-being. To date, over 200,000 beneficiaries including underprivileged families and individuals with special needs have benefited from such wellness programmes like therapeutic horticulture sessions and guided tours. These tours provide beneficiaries the opportunity to get up close with plants from diverse habitats like the Mediterranean, the South African savannahs, and arid deserts. Volunteers at the Gardens also regularly conduct programmes for wheelchair-bound senior citizens from nursing homes. These programmes, which typically consist of a simple hands-on activity (such as building a terrarium) and a tour of the cooled conservatories, aim to enable these seniors to enjoy the therapeutic benefits of nature.

In addition to leisure and learning, the Gardens aims to be a space that supports mental well-being. The recent COVID-19 pandemic highlighted the importance of green spaces on mental health. When safe distancing measures were in place, many were required to stay home and limit social interactions. At the Gardens, these restrictions meant that volunteering activities had to be curtailed. But a group of volunteers were determined to reach out to communities that had to remain in facilities away from their own homes. These included senior citizens in nursing homes and migrant workers living in dormitories.

Below: A volunteer assisting a participant from a nursing home in building a sand art terrarium. (Gardens by the Bay)



Beyond a premier horticultural attraction, the Gardens aims to be a People's Garden – a space for the entire community to not just enjoy and forge connections, but also play a part in caring for.

From the Service Ambassadors that greet visitors when they arrive, to the Garden Chaperons that enthral visitors with their knowledge of greenery, volunteers play a key role in engaging directly with the community, helping them form lasting memories and a deeper connection to the Gardens.



Migrant workers watching the virtual tour. (Gardens by the Bay)



Siew Luan conducting an educational demonstration during a Quiet Morning session. (Gardens by the Bay)

Over 200,000 beneficiaries including underprivileged families and individuals with special needs have benefited from such wellness programmes like therapeutic horticulture sessions and guided tours.

The volunteers conducted series of virtual tours of the Gardens using platforms like Zoom and Facebook Live, which were made more engaging and educational with the inclusion of interactive quizzes. Through their efforts, they provided much-needed interaction for over 800 beneficiaries.

Their actions also sparked the interest of a new volunteer, Hossine Md Mukul. Mukul, a migrant worker from Bangladesh, was inspired to give back after participating in a virtual tour during the pandemic. Now, he leads tours in Bengali for his fellow migrant workers.

Embracing Inclusivity

Inclusivity is another core value at the Gardens, and volunteers are key in making it a reality. Volunteer Poon Siew Luan, a retired child psychologist, has been partnering the Gardens and St Andrew's Mission School, a local school for children with autism, to design a "Quiet Morning" programme at the Flower Dome, one of the Gardens' cooled conservatories. The Flower Dome, which hosts the Gardens' signature floral displays, is typically teeming with people on any given weekend. But on the last Saturday of alternate months, its doors open an hour earlier for children with autism and their families. The music and announcements typically played over the speakers are also switched off, to provide a sensory-friendly setting.

Siew Luan's experience working with special needs children guides her approach in designing programmes and engaging visitors. One of her suggestions was to incorporate interactive booths featuring plants with unique textures and smells, which the children can explore at their own pace. This has been well-received, with one parent of a participant saying: "The activities are specially catered to the children, and I can see that they are excited when they get hands-on opportunities to touch and feel the plants."

Next Steps

The Gardens hope to take further strides in reaching out to people of all abilities, so they too can experience the garden and benefit from nature's therapeutic effects. Upcoming efforts include engaging other community partners, such as those supporting the visually impaired and deaf community. Through these partnerships, we hope to empower our volunteers to engage these groups more effectively and design more specialised programmes. These collaborations will only help us extend our reach and impact, but also help us build an inclusive space for all.

At Gardens by the Bay, we are deeply grateful to our dedicated volunteers, whose unwavering commitment and passion are the lifeblood of our community engagement efforts. They are the at the core of what makes a People's Garden, and together, we can foster a greener, more inclusive, and well-connected future for our communities.

AUTHORS

Gerald Teo
Deputy Director (Memberships & Volunteers)
Programming
Gardens by the Bay
gerald.teo@gardensbythebay.com.sg

Tan Sin Yee
Senior Manager (Memberships)
Programming
Gardens by the Bay
tan.sin.yee@gardensbythebay.com.sg

Lesley Chng
Manager (Volunteers)
Programming
Gardens by the Bay
Lesley.chng@gardensbythebay.com.sg

Gardens by the Bay
18 Marina Gardens Drive
Singapore 018953



Quiet Morning in the Flower Dome. (Gardens by the Bay)

RESOURCES

1. Refine your volunteer strategy

For botanic gardens looking to develop or refine their volunteer strategy, these toolkits can be valuable resources for drafting or revising your volunteer policy.

- a. The Guide to Involving, Supporting and Celebrating Volunteers (https://www.communityfirstyorkshire.org.uk/wp-content/uploads/2024/05/Volunteer_Management_toolkit.pdf) explains how to work with volunteers, in 5 easy steps from “Plan to involve volunteers” to “Value and recognise volunteer contributions” and share their best practices on welcoming and supporting volunteers.
- b. The Building Your Volunteer Management Framework for Stronger Volunteerism Outcomes (<https://file.go.gov.sg/volmgtoolkitver2.pdf>) helps organisations to organize practices to attract, keep and manage volunteers and is based on the six stages of the volunteer management framework.

2. Botanic Gardens with extensive information for volunteers

Some botanic gardens have devoted a large part of their website to information for volunteers. Have a look at the volunteer page of the United States Botanic Garden (<https://www.usbg.gov/about-us/become-us-botanic-garden-volunteer>) who also has a FAQ section for volunteers, Denver Botanic Gardens (<https://www.botanicgardens.org/join-give/volunteer>) and Botanic Gardens of Sydney (<https://www.botanicgardens.org.au/get-involved/volunteer>) to get some ideas for the volunteer section on your garden's website.

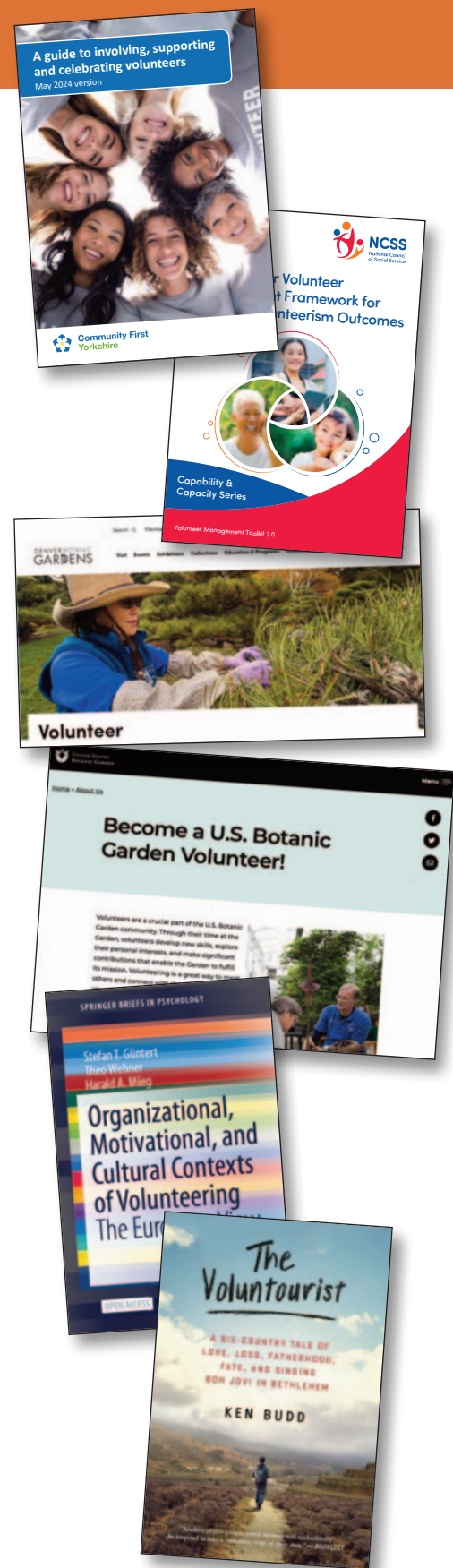
3. Understanding volunteering

This open access book offers insights into understanding voluntary work, designing volunteer tasks while respecting boundaries and provides practical advice on the organization of volunteer work. Free to download as PDF or EPUB (<https://link.springer.com/book/10.1007/978-3-030-92817-9>).
Güntert, S.T., Wehner T., and H. Mieg (2022) Organizational, Motivational, and Cultural Contexts of Volunteering: The European View. Springer.

4. The Voluntourist

Ken Budd *The voluntourist: A six-country tale of love, loss, fatherhood, fate, and singing Bon Jovi in Bethlehem*. William Morrow paperbacks, 2012.

This memoir follows the author on a journey driven by a desire – a feeling many of us share- to do something good in this world. His path takes him to six different countries where he volunteers in various capacities. Starting in New Orleans after hurricane Katrina, he also studies climate change in Ecuador and assists children with special needs in China.



CONTRIBUTE TO THE NEXT ISSUE OF ROOTS

The next issue of *Roots* will focus on the powerful synergy between art, conservation and education. We invite you to share how art can inspire conservation and shape educational experiences. Do you have examples of how artistic expression has been used to raise awareness for conservation or enhance learning experiences? Have you utilized art to address environmental challenges? Are you working on a project that demonstrates how creativity in art can drive awareness and action in conservation and education in your botanic garden? Whether through visual arts, performances or digital media, we would like to feature your innovative projects that showcase the meaningful impact of art in your garden's conservation and education projects.

To contribute, please send a 100-word abstract to annelies.andringa-davis@bgci.org by January 17.



CALL TO HOST THE 12TH INTERNATIONAL CONGRESS ON EDUCATION IN BOTANIC GARDENS

BGCI is inviting botanic gardens or arboreta interested in hosting the 12th International Congress on Education in Botanic Gardens (ICEBG) in 2028 to submit their pre-proposals.

Botanic gardens or arboreta interested in hosting the 2028 Congress should submit a pre-proposal in the form of a presentation with no more than ten slides, to the Director of Operations of BGCI (jake.clifford@bgci.org) by 4 November 2024. Please refer to the below guidelines for details on what to include in the pre-proposal:

https://www.bgci.org/wp/wp-content/uploads/2024/08/BGCI_Education_Congress_guidelines-2024.pdf

Short-listed candidates will be notified by the 6th of December 2024.

We look forward to reviewing your pre-proposals and to partnering with a host that will help make the 12th ICEBG a memorable event!

GLOBAL LEARNING AND OUTREACH NETWORK FOR BOTANIC EDUCATORS (GLOBE)



GLOBE

Global Learning and Outreach network for Botanic Educators

Are you working in the education team of a botanic garden?

Join our newly launched Global Learning and Outreach network for Botanic Educators (GLOBE) on LinkedIn. We created this network to encourage collaboration, exchange best practices, and inspire innovation in botanic garden education and public engagement. If you want to share a resource like a new toolkit you have come across, an interesting article you have read, have a webinar date to share, or want to highlight a successful educational activity from your garden, please feel free to post it here. Or simply join as a member to access useful information others are sharing. Please invite your network as well.

www.linkedin.com/groups/14490570/



BGCI'S ONLINE TRAINING PLATFORM

BGCI's online training provides online training courses for BGCI members and other interested individuals. The platform allows the creation of a range of interactive content with resources designed to complement BGCI's existing face-to-face training courses, projects and publications. Current courses include an Introduction to Interpretation, an Introduction to Evaluation and an Introduction to Science Communication, as well as a suite of foundation courses for botanic garden management called Botanic Garden Basics.

Visit www.training.bgci.org

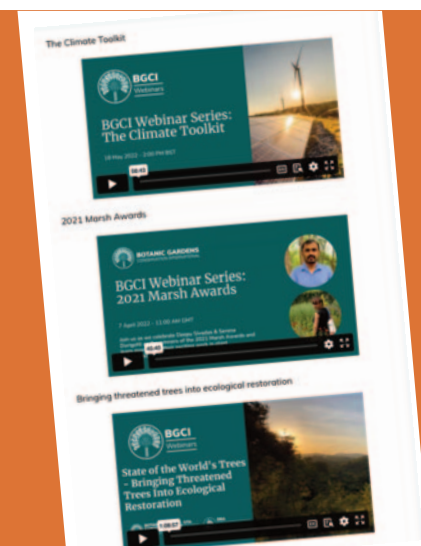


BGCI WEBINARS

BGCI is pleased to host the BGCI Webinar Series. This Series shares knowledge, ideas, and updates with BGCI and its Members, Partners, Donors, and Supporters around the world.

The webinars cover a range of subjects aligning with our strategy and BGCI projects, this includes events on red listing, forest restoration, policy and education. All webinars are recorded.

Please visit www.bgci.org/our-work/sharing-knowledge-and-resources/bgci-webinars/ for more information and to view past webinars, like the recent technical review on illegal plant trade.





**BOTANIC
GARDENS**
CONSERVATION
INTERNATIONAL

Descanso House, 199 Kew Road,
Richmond, Surrey, TW9 3BW, U.K.
Tel: +44 (0)20 8332 5953
E-mail: info@bgci.org
Internet: www.bgci.org
https://twitter.com/bgci

Design: John Morgan
www.seascapedesign.co.uk

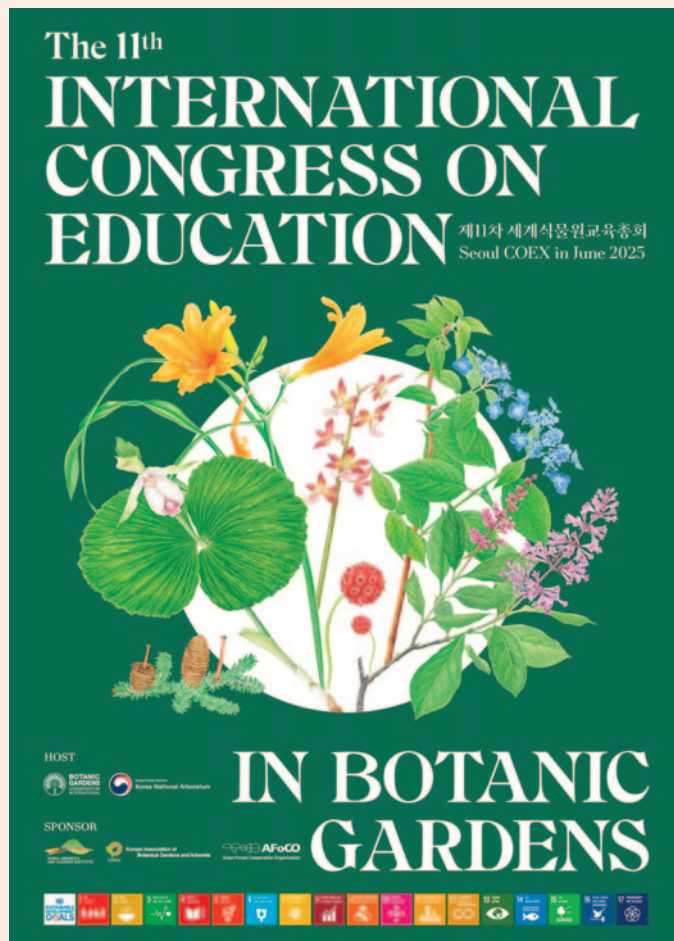
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ROOTS

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11TH INTERNATIONAL CONGRESS ON EDUCATION IN BOTANIC GARDENS (ICEBG)

Registration and the call for abstracts and workshops is now open!



BGCI's International Congresses on Education in Botanic Gardens bring together practitioners, teachers, curators, researchers, and academics to discuss new advances in education relevant to botanic gardens. These congresses are represented by botanic gardens from across the globe and are always an inspiring and informative event that provide opportunities to share ideas, meet old and new friends and discuss future priorities for education in botanic gardens.

Registration process: Visit the registration page → Fill in your information → Select your registration options (BGCI member/ non-member/ Student, Congress dinner, Optional tours) → Complete your payment → Check your registration status under the "My Page" tab.

Abstract & Workshop proposal submission process: Register for the congress → Fill out the provided form. → Submit your abstract/ workshop proposal → Check the status of your submission under the "My Page" tab.

Please visit the official website at icebg2025korea.com to stay updated on the latest information for the Congress. We hope to see you in Seoul in June 2025!



Save the date!

When	9-13th of June 2025 (with a Welcome Day on the 8th of June).
Where	Seoul, South Korea. COEX Exhibition Hall.
Host	Korea National Arboretum (KNA).
Theme	'Education for change: Botanic Garden's role in addressing global challenges.