Global Strategy for Plant Conservation



Conference Programme

The Global Strategy for Plant Conservation International Plant Conservation Conference

12-14th March 2025

Missouri Botanical Garden, St Louis, Missouri

Taking Action Together

Inspiring, guiding and implementing the new Global Strategy for Plant

Conservation

Global Partnership for Plant Conservation (GPPC)

12th to 14th March 2025

Schedule

Day 1 - 12 th March 2025		
Time	Event	
From 0800	Registration	
0900 to 0930	Opening Notes - Peter Wyse Jackson – Co-chair, GPPC & President Emeritus, Missouri Botanical Garden; Lúcia Lohmann – President & Director, Missouri Botanical Garden; Paul Smith – Secretary General, Botanic Gardens Conservation International (BGCI)	
0930 to 1000	Keynote Speaker - Peter Wyse Jackson – Co-chair, GPPC & President Emeritus, Missouri Botanical Garden	
	Title: An introduction to the Global Strategy for Plant Conservation: building on its success for new plant conservation actions into the coming decade.	
	The Global Strategy for Plant Conservation (GSPC) with its 16 outcome-orientated targets was originally adopted by the Convention on Biological Diversity (CBD) in 2002. Through the CBD, countries acknowledged the special importance of plants as the basis of all life on earth and providing the building blocks of all terrestrial ecosystems. The GSPC objectives and targets provided a valuable framework to guide plant conservation worldwide and played a critical role in mobilizing the plant and botanical community at global, regional and national levels to develop new priority plant conservation initiatives. A continued updated GSPC post-2020 will promote a continued focus on plants in national biodiversity strategies and action plans and will provide new impetus for civil society and the non-governmental sector to continue their efforts to safeguard plant diversity and wild habitats.	
	Significant progress was made up to 2020 on the achievement of the objectives and targets of the GSPC. The updated GSPC adopted by the CBD COP 16 in 2024 to include a new set of voluntary complementary actions will ensure that the momentum can be sustained over the coming decade and that the plant conservation community at all relevant national and international levels can collectively contribute to the implementation of the post-2020 Kunming-Montreal Global Biodiversity Framework (GBF).	
	Led by the Global Partnership for Plant Conservation since 2018, work was undertaken to develop a third phase of the GSPC. It was agreed that this should be closely nested within the GBF, through a set of supporting actions identified specifically for plant conservation, which would directly contribute to the attainment of the goals, milestones and targets of the post-2020 global biodiversity framework.	

The updated GSPC also includes enhanced sophistication over the previous two phases where new plant conservation related efforts are proposed. These include actions in plant conservation planning, ecological restoration, climate mitigation and adaptation and urban green infrastructure, in addition to sustaining areas highlighted in the previous GSPC phases, such as in situ and ex situ conservation, conservation of genetic resources, and the management and control of invasive species. These actions for plant conservation will serve to highlight specific focal areas for the plant conservation community and have the potential to bring a wealth of expertise, data and resources into efforts to implement the broader biodiversity agenda.

1000 to 1030 Keynote Speaker - Rachel Hoffman – Head of Global, Plantlife

Title: Cultivating hope in Conservation



Abstract: Back in 2016, the headline of an article in a mainstream newspaper asked if hope had "become the most endangered species in conservation". In a world of increasing instability and turbulence, this question still has relevance and poignancy – probably even more so than 10 years ago. There is no doubt about the scale of the biodiversity crisis and the overwhelming sense of hopelessness this can generate. But we know conservation works, species and habitats can bounce back. This should be celebrated by reframing our messaging, focusing on the successes, and remaining firm in our belief that we are making a difference.

1030 to 1100 **Tea Break**

1100	to
1230	

Session A

Relating the IUCN Assess-Plan-Act Framework to the GSPC

Chaired by Emily Coffey

(Please see hereafter for details on Session B which will be running at the same time as Session A)

Emily Beech – Botanic Gardens Conservation International & IUCN National Red List Working Group

Title: National Red Lists: Lessons learned from Global Tree Assessment for Target 4

Keywords: Assessments, Global Tree Assessment, National Red List, Threatened

Abstract: As Target 4 calls for the halting of "human-induced extinctions by 2030 and to reduce extinction risk, in particular for threatened species", it is imperative to have data on the threat status of species both globally and nationally to be able to track progress towards achieving this target. Although over 25% of the species on the IUCN Red List consist of plant species assessments (the vast majority of which are currently tree species), there are still huge gaps when it comes to knowledge of the conservation status of plants. In addition to global assessments, national red list assessments are vital for setting national targets, raising awareness and taking action nationally. These initiatives are also key in the success of global conservation actions, by providing important information on what is happening on the ground. BGCl's ThreatSearch database contains assessments on global, national and regional levels and shows that there is a much higher taxonomic coverage of plant assessments when considering all levels of assessments. IUCN's National Red List Working Group published guidelines in 2024 to support countries in developing National Red List projects and the National Red List website provides a space to aggregate assessments on a national and regional level.

The Global Tree Assessment is an initiative to assess the conservation status of all the world's tree species for the IUCN Red List. Over the last 10 years, this project has collaborated with countries all over the world to develop, or transfer existing, national assessments for endemic species, but has also used existing National Red List initiatives to support global assessments for non-endemic species.

Here we showcase success in national and global assessments, the need to support National Red List processes as well as highlighting gaps in current Red List assessments for plants.

Monica Carlsen-Krause – Missouri Botanical Garden

Title: Conservation assessments and phylogenomic evaluation of protection status in the tropical plant genus *Heliconia* (Heliconiaceae)

Keywords: Conservation, Endangered, Ex situ, In situ, Phylogenomics

Abstract: Heliconia, a charismatic genus in the monotypic plant family Heliconiaceae, is a primarily tropical taxon with 181 neotropical species and six paleotropical species, which play critical ecological roles in natural habitats and are widely cultivated as ornamentals with significant horticultural value. To date little data on the conservation status of these species have been available, with less than 10% of Heliconia species currently assessed in the IUCN Red List. To conduct the conservation assessments, specimen data were accumulated from herbarium collections world-wide and supplemented with information from the Global Biodiversity Information Facility. Species distributions were mapped, and the extent of occurrence (EOO) was calculated using GeoCAT. The i-Terra layer in GeoCAT was utilized to visualize land-cover vegetation loss resulting from human activities. Using data on distribution, habitat loss, and protected habitat status, we conducted global IUCN conservation assessments following IUCN Red List categories and criteria. We also calculated, using the BGCI-PlantSearch tool, the number of botanical gardens holding ex situ specimens of each species. Finally, phylogenomic patterns were used to evaluate the evolutionary conservation status across the genus. We found that 87 species (47%) of Heliconia are threatened with extinction. Among threatened species, all but one are in five or fewer in-situ protected localities. Most non-threatened species (61%) are in five or more in-situ protected localities. The majority of species maintained in *ex situ* collections (70 of 118 species) are of least conservation concern. Conservation status and protection are not evenly distributed with some evolutionary lineages more threatened and less protected than others. Our results indicate that nearly half of *Heliconia* species are threatened, but that many species are minimally protected through *in situ* and *ex situ* conservation. Forty-five species are considered top priorities for additional protection. Extinction threat also extends to major lineages within the genus.

Silvia Alvarez Clare and Amy Byrne – The Morton Arboretum

Title: Addressing the threat to oaks from assessment to action

Keywords: Red List Assessments, Conservation action planning, Conservation gap analysis, *Ex situ* conservation, *In situ* conservation, *IUCN*

Abstract: Effective species conservation action requires a baseline level of information on why a species is threatened in order to mitigate the impacts causing the species decline. As described in the State of the World's Plants and Fungi Report 2023, 77% of undescribed plant species are predicted to be threatened with extinction. In order to tackle this extinction crisis, we need to prioritize the assessment of plant species conservation statuses to then identify conservation actions to effectively save a species. In-depth assessments, like the IUCN Red List and conservation gap analyses are critical to the conservation of species. These assessments provide the priority information in order to plan for and act on species conservation. Taking a step by step approach, following the IUCN Conservation Cycle, from assessments, to planning and then to action is something The Morton Arboretum has been a leader in for the world's oak species. Ultimately, the Arboretum's oak conservation efforts have greatly aligned with and contributed to Target 4 of the GSPC. They assessed and will continue to assess the world's estimated 430 oak species on the IUCN Red List, and conducted several conservation gap analyses. In addition, the Arboretum has created conservation recovery plans for priority, threatened oak species. Finally, through research and on the ground conservation projects, the genetic diversity of priority, threatened oaks has been assessed and effectively conserved through in situ and ex situ conservation programs. The Morton Arboretum will continue to make great strides in conserving the world's oak species and other threatened tree taxa, overall contributing to the targets of the GSPC.

(Online Presentation)

Ryan Hills – Botanic Gardens Conservation International

Title: Identifying potential Alliance for Zero Extinction (AZE) tree species on a global scale

Keywords: Alliance for Zero Extinction Assessments, Conservation, Key Biodiversity Areas

Abstract: Some of the Earth's most threatened species are restricted to just a single site, making these sites globally irreplaceable from a biodiversity conservation viewpoint. These species are in urgent need of conservation in order to prevent global extinction. These sites are

irreplaceable and require safeguarding. Alliance for Zero Extinction (AZE) was established to identify, effectively conserve and safeguard the most important sites for preventing global species extinctions. AZE sites are a subsection of Key Biodiversity Areas (KBAs).

Currently, only 73 tree species have been identified using the AZE criteria and incorporated into the KBA database. The Global Tree Assessment, assessing the extinction risk of the world's tree species, has enabled trees to be incorporated into KBA and AZE sites. Here we present a methodology to utilize data from the IUCN Red List to identify potential AZE species for trees. This methodology has now identified 3,723 tree species as potential AZE species across the world, representing at least 6% of described tree species. The methodology can be applied and adapted to any taxa on the IUCN Red List. This analysis serves as a prioritization mechanism for identifying species in urgent need of conservation action to prevent extinctions. The species identified can feed into national KBA identification efforts and contributes to target 1 and 3 of the Global Biodiversity Framework.

Amy Byrne – The Morton Arboretum and **Yvette Harvey-Brown** – Botanic Gardens Conservation International

Title: Conservation planning: outlining collaborative strategies to save plants from extinction

Keywords: Conservation action planning, *Ex situ* conservation, *In situ* conservation, One plan approach, IUCN

Abstract: By 2021, the world's ~60,000 tree species were assessed on the IUCN Red List. This large effort to prioritize tree species included identifying species threats across its native range, and understanding which threats are having the biggest impact. Understanding this is critical to conservationists, who need to know what is threatened and why to prioritize their limited resources to implement strategic actions to save a species. Taking a step-by-step approach, following the IUCN Conservation Cycle, from assessments, to planning and then to action is the conservation model being increasingly used. However, many are uncertain about how to move from the assessment phase into conservation action. Therefore, conservation action planning is a necessary step to bring together partners across sectors to strategize and develop prescriptive methods that will effectively mitigate the species-identified threats and challenges long-term. Following the IUCN SSC Conservation Planning Specialist Group (CPSG) principles and design, Botanic Gardens Conservation International, the Global Conservation Consortia and their host institutions catalysed a momentous movement towards plant conservation action planning. These organizations formed a close partnership with CPSG, becoming trained in the action planning facilitation process and taking their skills learned throughout the CPSG course to apply them to plant conservation planning workshops. Thus, more conservation action plans have been developed for hundreds of priority threatened plant species around the world. With increasing reach and awareness of plant conservation planning over the past couple of years, more organizations have become involved. There is a growing interest and opportunity to maximize our efforts to create collaborative plans amongst groups to save the world's plant species.

1100 to 1230

Session B

Action 3: Important Plant Areas

Chaired by Damian Wrigley

(Please see above for details on Session A which will be running at the same time as Session B)

(Symposium)

Rachel Hoffmann - Plantlife, Raquel Negrao - Royal Botanic Gardens, Kew

Title: Spatial Planning for Plants: An introduction to Important Plant Areas (IPAs) for effective plant conservation

Keywords: Area-based conservation, Protected areas, IPAs, OECMs, AZEs, Conservation planning

Abstract: Complementary Plant Action 1 focuses on spatial planning and management processes for plant conservation. Important Plant Areas (IPAs) are a leading area-based conservation approach for plants and fungi, guided by globally consistent criteria. IPA identification has been conducted, or is underway, in over 60 countries, often driving botanical data collection and integration of plants and fungi into statutory and community-based conservation initiatives.

This session will provide an introduction (or, in some cases, a refresher) to IPAs, a historical perspective, why we should be using them and guiding participants through the tried and tested framework for identifying sites. We see this as being particularly timely as the global application of IPAs expands and new national programs are launched in biodiversity-rich countries. Effective and equitable IPA networks have the potential to advance multiple GBF and GSPC targets, including the 30x30 conservation area goal, plant-inclusive spatial planning, species-level conservation actions, and the sustainable use and equitable sharing of benefits from plant biodiversity.

We will also cover how IPAs can potentially feed into other spatial planning frameworks such as Key Biodiversity Areas, with great potential for both frameworks to be applied together, supporting plant conservation specifically.

The session will wrap up with a focus on the need to consider species- and site-based management and conservation plans once the areas have been identified, as many plant actions are already being delivered on IPAs but many more need to be implemented at scale and pace.

- An overview of IPAs, approach and criteria;
- IPAs and other spatial planning mechanisms;
- Planning and action (showcasing examples).

(Online Presentation)

Laura Kor – King's College London; Royal Botanic Gardens, Kew; Durrell Institute of Conservation and Ecology, University of Kent

Title: Towards effective spatial planning for plants: lessons from a global evaluation of Important Plant Areas (IPAs)

Keywords: Spatial planning, Area-based conservation, Protected areas, IPAs, Tropical Important Plant Areas

Abstract: Area-based approaches are central to biodiversity conservation, as reinforced by the Kunming-Montreal Global Biodiversity Framework (GBF). The Important Plant Areas (IPA) programme was established to identify and protect the world's best sites for plant conservation and has supported targets of the Global Strategy for Plant Conservation (GSPC) since its adoption in 2002. Over 20 years since IPA guidelines were introduced, this study undertook a comprehensive global review to ask: (1) Where and how has the IPA framework been applied? (2) To what extent has identification resulted in plant conservation outcomes? (3) How are IPAs perceived by botanists worldwide? And (4) What are the key opportunities and challenges for IPAs to achieve conservation outcomes?

A systematic review of over 140 IPA-related publications was conducted alongside semi-structured interviews with 47 practitioners with IPA experience. While most publications focused on the development of guidance or the application of identification criteria, 64% of participants were aware of the IPAs that have been incorporated into conservation designations or other in-country conservation processes. Perceptions of IPAs were generally positive, with the guidelines seen to provide a unifying global focus for plant conservation while allowing for flexibility and inclusivity. However, opinions were divided regarding their effectiveness in engaging diverse stakeholders and incorporating traditional ecological knowledge.

This presentation will highlight key recommendations which emerged from the evaluation, their integration into the Global IPA Network, and the role of IPAs in achieving the new GSPC's plant conservation actions. These findings are particularly relevant as the application of IPAs expands to support the GBF's 2030 targets for reducing threats to biodiversity, contribute to multiple actions of the latest GSPC, and guide national initiatives in biodiversity-rich tropical regions.

(Online Presentation)

Charlotte Couch – Royal Botanic Gardens, Kew

Title: The role of IPAs in planning for species recovery: a case study from Guinea

Keywords: IPAs, Threatened plants, Community collaboration

Abstract: Guinea has one of the richest and most diverse floras in West Africa. The recently published taxonomically verified vascular plant checklist of Guinea lists 3499 taxa which is an increase of about 1000 since Lisowski's flora account was published in 2009. To date 1352 plant species have been assessed for the IUCN red list, many through a Darwin Initiative project to

identify IPAs in Guinea. This has resulted in 300 threatened plant species which accounts for 8.5% of the flora, it has 81 endemic species including 6 monotypic genera.

From 2016 to 2019, a Darwin Initiative funded project identified and documented 22 IPAs and nine threatened habitats which were published in 2019. Following the identification of the IPAs in Guinea, the government agreed to put them into legislation, though the mechanism for this was unknown. Guinea has a high rural population; therefore, effective protection of IPAs in Guinea cannot be done without the collaboration of the surrounding communities. This involves building awareness of the reasons why these areas should be protected both within the communities, local schools and the local government departments. In addition, we need to promote nature-based revenue generating activities that promote conservation of threatened species.

We currently work with 12 communities in Guinée Forestière and Guinée Maritime around six IPAs to raise tree saplings of threatened trees and socioeconomic species to reinforce populations of these species and enable better access to useful species should access become restricted in the future. The eventual aim is for these plant nurseries to become a business supplying reforestation projects with indigenous species, phasing out the use of exotic species. Additionally, we support market gardening activities, improved cookstove installation to reduce firewood consumption and agroforestry initiatives to reduce the impact on TIPAs and encourage protection of these areas long-term.

1230 to 1400 Lunch

1400 to 1530

Workshop 1

Data tools and tracking progress for the GSPC

(Please see hereafter for details on Session C which will be running at the same time as Workshop 1)

Presenter(s): Emily Beech & Megan Barstow – Botanical Gardens Conservation International (BGCI), **Rachel Hoffmann** – Plantlife & **Emily Coffey** – Atlanta Botanical Garden.

Abstract: BGCI's data tools continue to evolve as we work to meet the needs of the global plant conservation community and the challenges facing plants. Many of BGCI data tools supported reporting on the GSPC 2010-2020 and the Aichi targets. In this workshop, we will introduce BGCI's data tools and how they remain essential to tracking progress to the new GSPC Complementary Actions. We will also introduce the Plantlife toolkit and Atlanta Botanical Garden's GAMMA application.

The workshop will include a brief demonstration of BGCI's data tools and link them to their relevant complementary action. There will also be a brief period for other groups to present their tools. Following this demonstration, there will be time for workshop attendees to ask questions and provide time with facilitators to explore the data tools and identify how they or their organization can contribute and use these tools for their work on the GSPC. There will also be time for feedback and suggestions on potential developments to the tools.

This workshop will demonstrate the importance of contributing to these tools, for both large and small institutions, for conservation prioritisation, planning and action. By contributing to these tools an organisation's work will also provide information on the implementation and progress of the new GSPC actions and consequently contribute to reporting for the wider Global Biodiversity Framework.

These data tools include:

- BGCl's GardenSearch GSPC Actions 2, 4a, 11, 21c
- BGCI's PlantSearch GSPC Actions 2, 4b, c, 9
- BGCI's GlobalTree Portal GSPC Actions 4b, e
- BGCl's ThreatSearch GSPC Actions 4a, c
- Plantlife Toolkit
- Atlanta Botanical Garden's GAMMA

1400 to 1530

Session C

Partnerships and collaboration for Plant Conservation (Objectives 2/3) Chaired by Murphy Westwood

(Please see above for details on Workshop 1 which will be running at the same time as Session C)

(Discussion Group)

Convenor: Tim Johnson – Native Plant Trust

Participants: Mark Richardson – BGCI-US, Emily Coffey – Atlanta Botanical Garden, Southeastern Center for Conservation, Kate Santos – Longwood Gardens & Ari Novy – San Diego Botanic Garden

Title: First, do no harm: Exploring how an incomplete understanding of the Hippocratic Oath constraints the conversation about conservation ethics

Keywords:

Abstract: *Premium non nocere*—first do no harm—is instantly recognizable as the Hippocratic Oath medical doctors proverbially swear to uphold in practice. The ethical principle of harm avoidance seeps into many judgment-based professions where good intentions can still have negative outcomes.

In the field of conservation, doing no harm is a noble ideal and one often alluded to when assessing risk. But is it operable in practice? How do we weigh, as an example, the *inevitable* harm of *inaction* that comes from knowing a species can only be saved from extinction through assisted migration against the *potential* harm of action including accidental interspecies hybridization, invasiveness, or introducing pathogens into novel environments?

Strict, dogmatic adherence to *premium non nocere* leaves conservation practitioners with few if any tools for action other than monitoring decline and writing policy for others to act upon. Given that there is always at least a rhetorical risk of harm when applying scientific knowledge (as a core tenet of science is the possibility that prevailing ideas are wrong) all actions are potentially harmful. Add to that the fact that conservation practitioners do not have the luxury of infinite time or resources to sort out all potential consequences and are thus always acting from limited sets of data and the risk of harm becomes a near certainty. We can almost never be sure that an action will do no harm because so much of what we "know" is extrapolated rather than directly measured... and directly scientifically assessing the impact of action through experimentation may itself cause harm.

The good news is that "First do no harm" isn't accurately the Hippocratic ideal, but a paraphrasing of centuries of medical philosophy. The Hippocratic Oath as understood and practiced by physicians is more accurately summarized as "try to help, or at least to do no harm" (emphasis added by authors; *Epidemics I*). Adopting this more balanced ethical standard shifts the conversation from one of action/inaction, to an ethical assessment of responsibility, risk, and skill with the goal acting for the greatest net benefit in the face of uncertainty.

Wesley Knapp – Center for Plant Conservation

Title: The Science of Saving Plants: Advancing Conservation Through Research and Collaboration

Keywords: Best practices, Collaboration, Conservation, *Ex situ*, Extinction prevention, Network

Abstract: For over 40 years, the Center for Plant Conservation (CPC) has served as a leading authority on science-based best practices to conserve rare and endangered native plants—with particular expertise in the collection, storage, and utilization of wild rare plant seeds for conservation purposes. CPC is the hub of an 81-partner network found on three continents. The CPC National Collection safeguards the 4,400 most imperiled native plants found in North America north of Mexico. This living conservation resource ensures the long-term survival of rare species through strategic *ex situ* stewardship.

CPC's work is grounded in its *Best Plant Conservation Practices to Support Species Survival in the Wild,* an evolving set of science-based guidelines that inform *ex situ* and *in situ* conservation strategies. Continually refined through research and fieldwork, these guidelines are integrated into CPC's Rare Plant Academy (RPA), a digital hub providing conservationists with educational training materials, a video library, and a knowledge-sharing forum. Through key initiatives such as regional seed collection in biodiversity hotspots across the U.S., pioneering scientific research studies, and cutting-edge database tools, CPC is expanding practitioners' collective knowledge while building capacity and streamlining conservation efforts.

Looking ahead, CPC will continue to lead initiatives and best practices to prevent plant extinction while providing leadership and assistance to plant conservation practitioners in new but essential ways, such as plant taxonomy, data synchronization, and prioritization efforts.

By integrating best practices with cutting-edge research and training, CPC and its partners are shaping the future of rare plant conservation and ensuring a legacy of stewardship for generations to come.

Suvarna Parbhoo-Mohan – South African National Biodiversity Institute & Custodians of Rare and Endangered Wildflowers (CREW) Citizen Science Programme

Title: Empowering Conservation: The impact of citizen science on South Africa's plant diversity and species recovery

Keywords:

Abstract: South Africa has received consistent investment in plant taxonomic research. In 2002, a comprehensive assessment of the threat status of its flora indicated that despite the high record of species documented, there was a lack of data required to accurately assess the rate of extinction of the flora. In response, SANBI and the Botanical Society of South Africa partnered in 2003 to establish a dedicated citizen science initiative, the Custodians of Rare and Endangered Wildflowers (CREW) programme, to train non-specialists to gather information on range restricted endemic and threatened species.

The CREW Programme is probably the only citizen science programme globally that informs national resource governance by contributing to national plant conservation strategy targets, providing data to the national Red List of plants dataset, mainstreaming data into decision making, engaging with higher education institutions to build capacity in the plant conservation sector, conducting *in situ* and *ex situ* conservation practices and more recently identifying species that require recovery. The programme supports Biodiversity Stewardship with site assessments and ongoing site surveys in both private and communal owned land. In collaboration with a host of partners, the programme encourages the sustainable use of plants with focus on the medicinal plant trade and illegal trade of succulent species.

Citizen science programmes such as the Custodians of Rare and Endangered Wildflowers (CREW) and iNaturalist serve as mechanisms of encouraging plant conservation and bridge the gap between scientists and civil society. The This paper shall explore the role of citizen scientists and higher education institutes in monitoring and prioritising the recovery of South Africa's plants.

Nicola Ripley – Betty Ford Alpine Gardens

Title: The Sky IS the Limit: The present state and future stake of alpine plants

Keywords: Alpine, Climate, Conservation, IUCN, Global, Plant

Abstract: The alpine ecosystem covers about 3% of terrestrial habitats in isolated pockets extending nearly from pole to pole. In some of the highest and coldest regions on Earth, it has experienced more pronounced warming than other ecosystems. How will plants, the essential providers of the alpine world, survive in their sky islands?

The isolated nature of mountain regions around the world physically separates researchers from one another and limits data sharing. Establishing an Alpine Plants Specialist Group within

the International Union for the Conservation of Nature (IUCN) will encourage communication among academic institutions, gardens and other research organizations to foster advocates for their conservation.

As a global leader among high-altitude botanical gardens, Betty Ford Alpine Gardens in Vail, Colorado, USA, is currently organizing the IUCN Alpine Plants Specialist Group. The Gardens, in partnership with Denver Botanic Gardens, are authors and coordinators of the 2020 North American Botanic Garden Strategy for Alpine Plant Conservation. Based on the Global Strategy for Plant Conservation, the Alpine Strategy is a blueprint for protecting alpine plants and ecosystems in the United States, Canada, and Mexico, focusing on the role of botanic gardens in this effort. This effort is already well on the way to reaching targets in seed banking, monitoring and documenting alpine plant populations.

Actions and observations made by the IUCN Alpine Plants Specialist Group will expand beyond botanic gardens and North America and can lead the world in documenting the impacts of a warming planet on this unique ecosystem.

Carrie Radcliffe – Southeastern Center for Conservation, Atlanta Botanical Garden & Southeastern Plant Conservation Alliance

Title: The Southeastern Plant Conservation Alliance and Regional Species of Greatest Conservation Need create national impacts

Keywords: Partnerships, Southeastern US, Target 16

Abstract: The Southeastern Plant Conservation Alliance (SE PCA) includes a wide range of stakeholders representing diverse interests and perspectives. Since its formation in 2020, the SE PCA has stimulated collective successes in local, state, and regional plant conservation that are informed by partners' needs and abilities. This has included promoting conservation and recovery of plants listed under the Endangered Species Act (2021-present); conducting a gap analysis of *ex situ* collections (2022), developing the nation's first list of regional species of greatest conservation need (RSGCN) for plants (2023); conducting conservation status assessments for priority species (2022, 2024); and hosting the 3rd Southeastern Partners in Plant Conservation (SePPCon) conference in 2024.

The Southeastern Regional Species of Greatest Conservation Need (RSGCN) list is the first of its kind for plants. The Garden coordinated its creation, on behalf of the SE PCA, by working with experts across the region. This included NatureServe, Terwilliger Consulting, Inc., Flora of the Southeastern United States, and the Southeastern Association of Fish & Wildlife Agencies (SEAFWA) Wildlife Diversity Committee. This tool presents species of conservation concern with regional responsibility and opportunity for collaboration, identifies high level threats and needs, and sets actionable priorities across political boundaries. Its development has provided a forum for the NatureServe Network Member program botanists to conduct collaborative Global Ranking updates; informed State Wildlife Action Plan (SWAP) development; and highlighted approaches for inclusion of Tribal Nations, Indigenous communities, and Caribbean partners.

The SE Plants RSGCN illustrates the critical role of plant conservation and the need to take action in the face of our changing climate by integrating them into broader efforts to conserve wildlife. Identification of ecological systems will inform potential Conservation Opportunity

Areas (COAs), as well as future iterations of the Southeastern animal RSGCN and promote more effective landscape conservation at the regional and national levels.

1530 to 1600 **Tea Break**

1600 to 1730

Workshop 2

Designing a Monitoring Framework for the Global Strategy for Plant Conservation (GSPC)

(Please see hereafter for details on Workshop 3 which will be running at the same time as Workshop 2)

Presenter(s): Carly Cowell – Botanic Gardens Conservation International, Tara Moreau – University of British Colombia, Sean Hoban – The Morton Arboretum & Emily Beech – Botanic Gardens Conservation International (BGCI)

Keywords: Indicators, Framework, Monitoring, Policy

Abstract: The Global Strategy for Plant Conservation (GSPC) aims to halt the loss of plant diversity worldwide through a set of voluntary complimentary actions. Effective implementation of the GSPC Actions requires a robust and adaptive monitoring framework to track progress, assess challenges, and inform progress to achieving the Kunming-Montreal Global Biodiversity Framework (KM-GBF). This workshop brings together experts, stakeholders, and practitioners to co-design a comprehensive monitoring framework that aligns with the KM-GBF.

Participants will explore key indicators and data sources to ensure all GSPC Actions are covered and align with the monitoring framework indicators of the KM-GBF. The workshop will emphasize the integration of traditional knowledge, technological advancements, and participatory approaches to enhance data collection and analysis. Additionally, it will address challenges related to capacity building, and harmonization with other biodiversity monitoring initiatives.

Through interactive discussions and collaborative exercises, the workshop aims to produce actionable recommendations and a roadmap for effective GSPC monitoring, ensuring that plant conservation efforts are data-driven, transparent, and impactful.

The workshop will start with presentations on work already done on developing indicators for:

- Genetic Diversity
- Community inclusion/engagement
- Conservation status of species

Break-out groups will then discuss the GSPC Actions under the 3 main topics; Reducing threats to biodiversity (GBF Targets 1-8); Meeting people's needs (GBF Targets 9-13) and Tools and solutions for implementation and mainstreaming (GBF Targets 14-23). Identifying data sources and indicators and developing a set of recommendations for the GPPC to take forward.

Presenter(s): Tara Moreau – University of British Colombia

Title: Advancing Biodiversity Education, Awareness and Action through Botanical Gardens and the Global Biodiversity Framework

Keywords: Education, Botanical Gardens, GBF

Abstract: The Kunming-Montreal Global Biodiversity Framework (GBF) outlines a plan to foster a harmonious relationship between humans and nature. Communication, education and awareness of biodiversity is essential to achieving its effective implementation. Botanical gardens, with their unique capacity to connect people with plants and ecosystems, serve as powerful platforms for translating global biodiversity goals into local and regional impact. Since 2021, UBC Botanical Garden (UBC BG) has hosted Biodiversity Days, an annual initiative celebrating the UN International Day for Biological Diversity (May 22). Aligning with the Global Biodiversity Framework, UBC Botanical Garden leverages policy-driven programming to showcase biodiversity conservation in action.

The UBC BG is nestled within the Pacific Northwest rainforest at the University of British Columbia on the traditional and unceded territory of the Musqueam First Nation. The Garden is a community hub of biodiversity research, conservation, and sustainability education. In collaboration with a growing number of community partners, Biodiversity Days happens throughout May and includes events such as tours, workshops, student-led presentations, webinars, talks, family nature adventures and more. The goal of Biodiversity Days is to foster deeper community engagement with biodiversity and encourage long-term conservation efforts. By showcasing local initiatives, organizations and individuals taking action, UBC BG aims to inspire participation to prevent biodiversity loss, and to cultivate future biodiversity stewards, scientists, and leaders.

Communicating the complexity of biodiversity is essential to building resilient communities that live in harmony with nature. Biodiversity Days provides an inclusive space to explore the intersections of biodiversity and cultural diversity, emphasizing the need to protect biocultural diversity for future generations. This talk will explore how botanical gardens can bridge science and society, advancing biodiversity education and action at local, regional, and global scales.

1600 to 1730

Workshop 3

Developing a Global Strategy for Fungal Conservation

(Please see above for details on Workshop 2 which will be running at the same time as Workshop 3)

Presenter(s): Gregory Mueller – Chicago Botanic Garden, Glencoe; IUCN SSC Fungal Conservation Committee; Fungal Conservation Network & **Cátia Canteiro** – Society for the Protection of Underground Networks (SPUN); IUCN SSC Fungal Conservation Committee; Fungal Conservation Network

Keywords: CBD, GBF, IUCN Global Species Action Plan, IUCN GSAP Skills Platform, Mycology

Abstract: More than 90% of plants have an association with fungi, and many would not survive without them. Integrating fungi into global conservation efforts is crucial to achieve the Global Strategy for Plant Conservation (GSPC) and Global Biodiversity Framework (GBF) goals and targets. Yet, fungi are rarely considered in global, regional, or national policies or in conservation plans and actions. As evidenced by the success of the GSPC, the potential benefit of having a unifying strategy to help guide fungal biodiversity and conservation initiatives is high. Developing a Global Strategy for Fungal Conservation linked to the GBF that identifies actions to facilitate countries' conservation policies and actions was agreed during a workshop at the International Mycological Congress (August 2024) and was presented during the Congress closing plenary session. A document Contribution of Fungi to the Global Biodiversity Framework was developed and presented at CBD CoP16 in Cali, Colombia. There is a clear interest from both the mycological community and CBD parties and observers in the development of a Fungal Strategy. Drafts for each target identifying the specific targets, actions, research needs, and available resources needed to enable countries to implement it are being prepared for review by the mycological and conservation communities. The Fungal Strategy will be integrated as appropriate within the IUCN Global Species Action Plan (GSAP) Skills web platform to facilitate its uptake by parties. While the basic content of the Fungal Strategy has been agreed, questions on how best to organize the "leadership" of the initiative, disseminate the Strategy, and implement the recommendations remain. Discussion during this workshop will focus on these issues, with the idea to learn from the successful development and implementation of the GSPC and organization of the GPPC.

Fungal Conservation Network. 2024. Contribution of Fungi to the Global Biodiversity Framework. https://zenodo.org/records/14680634

IUCN GSAP-Skills: https://gsapskills.org/

End of Day 1

See you all tomorrow!

Day 2 - 13 th March 2025			
Time	Event		
From 0800	Registration		
0900 to 0930	Introductory Session: Catalysing connections among botanic gardens and indigenous partners		
	Presenter(s): Ari Novy – Director, San Diego Botanic Garden & Salk Institute and Kekoa Cantwell – Tribal Climate Resilience Specialist at San Diego Botanic Garden		
	Keywords: Conservation, Crop Wild Relatives (CWR), Ethnobotany, Medicinal Plants, Sustainable Utilization		
	Abstract: GSPC Actions 9 and 10 require plant conservation activities to include indigenous partners and conservation of agricultural biodiversity. This presentation describes the emergence of a partnership network consisting of botanic gardens, indigenous institutions and tribal governments throughout North America. The network emerged out of a Southwest US collaborative effort among botanic gardens and indigenous partners to share conservation horticultural knowledge related to medicinal plant conservation and utilization. Since then, the partnership has held a Crop Wild Relative-related gathering at Denver Botanical Gardens in 2024 and will hold a second gathering focusing on plant conservation/indigenous partnerships in San Diego in 2025. We report on the history of this emerging partnership group, including lessons learned for successful partnerships, and the outcomes of the two most recent gatherings. The presentation will focus on strategies for botanic gardens seeking to engaging in indigenous partnerships, identification of the unique challenges and opportunities of such partnerships, and next steps for the emerging network.		
0930 to 1000	Keynote Speaker: Gunter Fischer – Senior Vice President Science & Conservation, at Missouri Botanical Garden		
	Title: The importance of functional diversity in ecological restoration		
	Abstract: Many of our planet's terrestrial ecosystems have been modified by centuries of human land use change. Therefore, it is an urgent need to halt and reverse ongoing degradation of ecosystems by actively restoring habitats for human wellbeing as well as to preserve biodiversity for future generations. Especially Botanical Gardens, which are knowledge centers for plant science, conservation, and horticulture, are perfectly suited to lead and consult on ecosystem restoration initiatives in collaboration with governments, corporations, academic sectors, NGO's and wider civil society.		

In ecological restoration programs a lot of efforts were made recently to increase the number of species used to promote biodiversity recovery. Numbers planted in hyper diverse tropical forests vary a lot from a handful to hundreds of species, but the success of these plantings is rarely evaluated and therefore it is still poorly understood, whether number of species is an effective measure for ecosystem recovery. In this presentation I explore whether other factors also need to be considered to assess the recovery of ecosystem functioning. A hypothesis is proposed that functional diversity is more important than species richness.

1000 to 1030

Tea Break

1030 to 1200

Session D

Action 2 - Restoration and *in situ* Conservation

Chaired by aul Smith

(Please see hereafter for details on Session E which will be running at the same time as Session D)

(Online Presentation)

Leilani A. Castillo – University of the Philippines Los Baños

Title: Long Term Ecological Research Plot as a nature-based solution to monitor climate change impacts in Mount Makiling Forest Reserve ASEAN Heritage Park

Keywords: Diversity index, Ecosystem dynamics, Forest ecosystems, Nature-based solutions, Species composition

Abstract: Nature-based solutions' (NbS) provides protection from climate change impacts. The Long Term Ecological Research (LTER) plot is a NbS which aims to monitor and understand changes in the forest ecosystem and to document ecosystem dynamics in understanding the impacts of climate change. The paper presents the assessment of monitoring and growth dynamics based on its initial measurement in 2014 followed by its re-measurement in 2019 in the Sipit Watershed, Mount Makiling Forest Reserve ASEAN Heritage Park in the Philippines. Following the standard protocol of the long-term ecological research network, all trees with a minimum diameter at breast height (DBH) of 10.0cm were identified, measured, and recorded, including total and merchantable heights. Results of the assessment revealed a decrease in the initial number of tree individuals present in the area. From the initial 1,055 tree individuals recorded in 2014, the re-inventory recorded a total of 1,005 tree individuals including new additional 15 tree individuals that have also exceeded the 10.0cm DBH measurement. The assessment revealed a total mortality of 65 individuals which include species of *Antidesma montanum* Blume, *Caryota rumphiana* Mart. *var. philippinensis* Becc. and *Palaquium luzoniense* (F. Vill.) Vidal. The Shannon diversity index (H')

values showed an increase from the initial 3.32 (2014) to 3.42 (2019) after re-measurement. There was also a notable increase in the evenness value from 0.28 to 0.41. Meanwhile, Importance Values (IV) of the species remain the same after monitoring. The results indicate resiliency of the area in terms of biodiversity and floral composition despite being hit by typhoons. Based on these results, management strategies and scientific interventions are being undertaken to maintain MMFR AHP's resiliency and integrity as a model ASEAN Heritage Park. Meanwhile, continuous monitoring is being conducted to record and document the impacts of climate change through time.

(Online Presentation)

Lauma Keire – University of Latvia Botanical Garden

Title: Public evaluation of grassland management techniques: a long-term study at the University of Latvia Botanical Garden

Keywords: Grassland management, Urban lawns

Abstract: Currently, human-made grasslands constitute 90% of Latvia's total grassland area, while natural grasslands cover only 10%, approximately 60,000 hectares. This represents less than 1% of the country's total area. A century ago, natural grasslands covered 30% of the land. The drastic reduction in natural grassland areas is due to abandonment, overgrowth, afforestation, drainage, and inappropriate management practices such as mulching and leaving cut grass on the field.

In the summer of 2021, a solitary, old apple orchard with an area of about 500 m² at the University of Latvia Botanical Garden, in Riga was transformed into a model area for a long-term grassland management and monitoring experiment. This site, accessible to visitors, features controlled plots arranged in a block design to facilitate the study of various management techniques.

The experiment employs six distinct methods, each replicated five times, encompassing initial soil treatments and mowing regimes. Initial soil treatments include the introduction of grassland soil and the sowing of seeds from semi-natural meadows. Mowing regimes vary between once or twice per season throughout the active growth period.

This experimental setup allows for the evaluation of plant diversity under different management practices. The Botanical Garden's website provides detailed information about the grassland trial, including photographs, success stories, and visual comparisons between "grass lawn" and "flower meadow." This resource serves as a guide for landowners and local communities interested in grassland restoration.

(Online Presentation)

Marc Reynders – Meise Botanic Garden

Title: How ex situ conservation is serving in situ restoration: a success story from Belgium

Keywords: Conservation horticulture, Ecological restoration, *Ex situ* propagation, Plant reintroduction, Plant translocation, Seed banking.

Abstract: Meise Botanic Garden has taken an important step towards achieving Target 8 of the Global Strategy for Plant Conservation 2011-2020 (GSPC). At the end of the '80s, the institution was one of the first in Europe to have a seed bank meeting FAO standards for the conservation of the native endangered flora. A recent partnership with a local NGO, involving forty specialised volunteers, has significantly increased seed collections in Flanders over the past four years to reach 75% of the red-listed species at the end of 2024. This is an exceptional result which, to our knowledge, has not yet been achieved by any seed bank in the European Union.

In May 2024, the institution took another big step forward by inaugurating a new state-of-the-art seed bank. Combined with the new Green Ark glasshouse complex, this infrastructure helps to respond to crucial conservation issues and the objectives of the GSPC. With its seed bank, state-of-the-art nurseries and propagation facilities, and most of the country's threatened species banked, Meise BG has all the necessary tools to further strengthen its role in nature restoration projects.

For the last decade, Meise has played a prominent role in both the science and practice of plant reintroductions. Our scientists have authored several key publications in this field and we successfully restored 17 populations of four critically endangered species in their natural environment. Recently, conservationists have again called on Meise's expertise to help restore endangered taxa in Belgium. In two new EU-funded projects, 15 red-listed species are being propagated in our glasshouses based on locally sourced material stored in the seed bank. In 2024, 6,700 plants were already reintroduced into the wild. This year, the propagation of 8,800 plants has been initiated in preparation for upcoming translocations.

(Online Presentation)

Carolina Castellanos Castro, Amalia Díaz Peña and Carolina Alcázar Caicedo

– Instituto Alexander von Humboldt

Title: The role of networks and local communities' involvement in *ex situ* and *in situ* conservation of plants in Colombia

Keywords: KBA, Nurseries, Participatory monitoring, Propagation, Seed banks

Abstract: Colombia, as one of the parties of the Convention on Biological Diversity, is committed to the achievement of the Goals, Strategies, and Programs adopted, including the Global Strategy of Plant Conservation. For this reason, in 2001, it published a National Strategy for Plant Conservation (NSPC) and in 2017 an associated Action Plan, initiative led by representatives from national governmental entities and civil society organizations, such as botanical gardens, universities, and companies, among others, which proposed five thematic areas, along with expected outcomes, focused on knowledge, conservation, sustainable use, education, and capacity building regarding plants. The implementation of the NSPC requires the articulation of multiple actors and the present work aims to showcase three examples of multiple interinstitutional networks that contribute to the implementation of the NSPC by

promoting the integration of efforts and the exchange of experiences focused on seed banking, nurseries of native plants, and Key Biodiversity Areas. A cross aspect in these networks is the involvement of local communities in the implementation of actions in the field, and we will socialize case studies in two regions of the country where plant conservation has been aligned with local interest and opportunities.

Emily Coffey — Atlanta Botanical Garden, Southeastern Centre for Conservation & Southeastern Plant Conservation Alliance

Title: Advancing Plant Conservation: Integrating *Ex situ* and *In situ* Strategies at the Southeastern Center for Conservation

Keywords: Ex situ conservation, Southeastern US, Target 4

Abstract: The Southeastern Center for Conservation (SECC) at the Atlanta Botanical Garden (ABG) is a leader in advancing plant conservation through innovative research, strategic collaborations, and the safeguarding of underrepresented and endangered plant groups. These efforts are critical to supporting habitat restoration and *in situ* management across diverse ecosystems.

The SECC's conservation seed bank and conservation horticulture team specialise in *ex situ* collections management, employing propagation techniques that integrate fieldwork, laboratory research, and nursery production for imperilled species. A core focus of the SECC is enhancing consecration collections through maternal line tracking, micropropagation, conventional and cryogenic seed banking, and the establishment of tissue and DNA banks. *Ex situ* research supports these activities, including viability testing and population genetics, which ate integrated with *in situ* restoration efforts to drive meaningful advances in species conservation.

Case studies from the SECC highlight impactful collaborations with federal and state agencies and conservation partners to advance seed banking initiatives. These efforts have generated critical data to inform the management and restoration of rare plant populations. The newly updated Safeguarding Database serves as a central tool for tracking *ex situ* collections, *in situ* outplanting, monitoring and management, with survivorship analysis capabilities that enable robust evaluation of seed-based conservation strategies.

The SECC collaborates with partners across the southeastern United States and the Neotropics, fostering capacity building and knowledge exchange to address urgent conservation challenges and secure biodiversity's future. This includes the facilitation of the Southeastern Plant Conservation alliance and Global Conservation Consortium for Magnolia.

1030 to 1200

Session E

Implementing the GSPC through botanic garden strategies
Chaired by Maite Delmas, Co-chair, GPPC

(Please see above for details on Session D which will be running at the same time as Session E)

(Online Presentation)

Michelle Price - Conservatory and Botanical Garden of Geneva

Title: The mission evolves: contributions of the Conservatory and Botanical Garden of Geneva to the updated Global Strategy for Plant Conservation

Keywords: Conservation actions, Coordinating expertise, Research, Indicators

Abstract: Botanical gardens are at the forefront of global plant conservation efforts, contributing to the development of species and biodiversity knowledge as well as to the understanding of the genetic diversity, distributions, ecology, biology, germination, and growth requirements of plants through research, cultivation, and experimentation. Contributions of individual botanical institutions, with the human resources and means available to each, can be enhanced through partnerships, communication and the sharing of experiences around common goals. Botanical institutions, such as ours, house living and preserved collections of plants that form the foundation for conservation actions, the long-term maintenance of threatened or non-threatened species in cultivation, and fundamental or applied scientific research on plants. The updated Global Strategy of Plant Conservation (GSPC) and its set of Voluntary Complementary Actions provide the perfect opportunity for us to outline how our expertise and activities contribute to the achievement of the GSPC and how we can measure our progress in line with the 2030 Global Biodiversity Framework targets. The assessment of our activities and reflections on how we can best use our expertise, training, collaborations, research and outreach capacities served to shape our approach and allow for the development of a strategic framework.

Karl de Gendt – Meise Botanic Garden, Meise

Title: How Meise Botanic Garden moves toward GBF targets

Keywords: Biodiversity hotspot, Climate neutrality, Conservation Horticulture, Ecosystem restoration, Metacollection, Seed bank

Abstract: At Meise Botanic Garden, a large part of our efforts is directed towards addressing GBF targets. Through our multidisciplinary research, the Garden has become a knowledge center for thematics ranging from describing plant, fungi and algae diversity to invasive species monitoring, climate change mitigation, illegal timber trade tracing, IUCN redlisting, crop wild relatives conservation and seed germination behaviour. Our collections of over 4 million herbarium specimens and 45,000 living accessions provide an overwhelming source of biodiversity information.

Conservation of plant diversity is a primary objective of the Garden. Our seedbank is an efficient way to conserve genetic diversity of threatened species in Belgium. With continuous efforts since the 1980's, 75% of the threatened species in Flanders have now been banked. Thorough knowledge of seed germination and storage behaviour allowed us to become an

essential partner in EU-funded *in situ* conservation projects for reintroduction and reinforcement of threatened species.

The *ex situ* living plant collections also contain a significant number of threatened taxa. Notably the extensive succulent collections are well documented with at least 50% of IUCN-listed threatened taxa in large genera like *Euphorbia* and *Aloe*. Our new collection management system, strengthened collaborations and population genetic studies should allow us to advance on metacollection management of these exceptional species.

Nearly 50% of our 92 ha domain consists of natural forest and grassland and is a hotspot for local plant and fungal diversity. Conservation goals are met using nature-based solutions and following a management plan that aims for maximal diversity and climate resilience.

Apart from the above, significant financial efforts have been made over the last ten years to align with our goal to become climate-neutral by 2045. Through investments in renewable energy, sustainable construction and restoration we have managed to reduce our carbon emissions by 40%, compared to 2020.

Alexandra Davey – Royal Botanic Garden Edinburgh

Title: The Scottish Plant Biodiversity Strategy - a national plan for implementing the GSPC

Keywords:

Abstract: With a deadline of 2030 for the targets of the Global Biodiversity Framework (GBF) to be met, time is of the essence. The development of national strategies and implementation plans for the voluntary complementary actions of the GSPC is therefore an urgent priority. In Scotland, representative organisations including government agencies, non-departmental public bodies and NGOs, collaboratively developed a Plant Biodiversity Strategy and Implementation Plan corresponding directly to the targets of the GBF, objectives of the Scottish Biodiversity Strategy, and actions of the GSPC. We will share the key features of the Strategy and explain the process by which it was developed, hoping to provide a 'best practice' example of how national policy can be aligned to international commitments for the protection, restoration and sustainable use of plant biodiversity.

(Online Presentation)

Eduardo Fernandez — Rio de Janeiro Botanic Garden Research Institute (JBRJ); Brazilian National Centre for Plant Conservation (CNCFlora); IUCN SSC Stand-alone Brazil Plant Red List Authority (BP-RLA)

Title: Integrating research, policy and action to conserve Brazil's Botanical Megadiversity: state of the art and prospects towards 2030

Keywords: Action Plans, Brazilian Flora, Conservation Strategies, GSPC, Prioritization, Threatened Plants

Abstract: Led by Rio de Janeiro Botanic Garden Research Institute (JBRJ) through Brazil's National Centre for Plant Conservation (CNCFlora), the implementation of the Global Strategy for Plant Conservation (GSPC) in Brazil has achieved remarkable progress over the past decade, advancing research, policy, and tailored actions to halt plant diversity loss. Here we provide an in-depth review towards the targets of GSPC until 2020, and discuss prospects for its continuous implementation until 2030. Key achievements include the Flora e Funga do Brasil online portal, engaging over 1,000 taxonomists to document over 50,000 species of plants, algae, and fungi—half of which are endemic—with 250+ new species described annually. Of 35,111 terrestrial native plant species documented, 9,419 (27%) have been assessed for extinction risk, with 40% classified as threatened. National Conservation Action Plans for over 830 threatened species are undergoing, developed through multi-sectoral collaboration and in line with Brazil's National Biodiversity Strategy and Action Plan (NBSAP). JBRJ's infrastructure—including herbarium collections, ex situ living collections, DNA and germplasm banks, and training programs—has been pivotal in advancing research, education, and integrated conservation. CNCFlora's scientific expeditions to understudied regions have expanded knowledge of Brazilian flora's distribution and ecology, guiding targeted in situ conservation efforts, such as protected area establishment. By leveraging advanced information systems like ProFlora and fostering collaborative networks, CNCFlora has accelerated the detection and conservation of threatened species, ensuring their scientific recognition and legal protection. These initiatives underscore Brazil's leadership in plant conservation, combining research, policy, capacity building, and community engagement to meet GSPC targets and inspire global efforts to halt biodiversity loss. The challenge now is maintaining current commitment while tackling rapid habitat destruction and limited resources. Moving forward, CNCFlora/JBRJ aims to fully align with the GSPC new targets, ensuring the safeguarding of Brazil's extraordinary botanical heritage.

Nicola Schönenberger – Conservatory and Botanical Garden of Geneva

Title: Bridging the gap between conservation practitioners and plant geneticists in Switzerland

Keywords: Conservation genetics, Conservation practice, Genetic diversity

Abstract: Genetic diversity is recognized by the Convention on Biological Diversity as one of the three levels of biodiversity, and the Kunming-Montreal Global Biodiversity Framework requires signatory states to preserve genetic diversity of all species. In Switzerland, national biodiversity policies name genetic diversity as a key conservation priority, however, it is often overlooked in action plans for priority species and nature conservation practices. Yet, genetic diversity is the raw material for species evolution and adaptability, and thus essential for functioning ecosystems.

With the increase of ex-situ cultivation, reintroductions and population reinforcements of threatened plants, the demand for genetic data has intensified in recent years. While multiple Swiss academic laboratories hold the expertise to carry out genetic studies, they are not sufficiently connected to the community of conservationists and are often unable to understand the constraints of conservation practices. Conversely, regional authorities, who

oversee conservation programs, generally lack expertise in genetics and are not sufficiently coordinated at the national level.

To bridge this gap, we launched the platform GENSCOP (Genetic Species Conservation Platform) supported by the Swiss Federal Office for the Environment and four research laboratories. It channels requests from regional authorities and practitioners, linking them to the expertise and resources of the laboratories. An expert commission provides scientific guidance on the study design, data interpretation and translation into conservation recommendations. By doing so, GENSCOP acts as an interface between scientists who produce and interpret genetic data, conservationists who need inference from the data, and the authorities who need to invest financial resources most efficiently to conserve threatened species. An initial call collected more than 50 project proposals on various topics covering species identification and population origin, hybridisation and introgression, or assessment of genetic diversity and inbreeding levels. Nine projects will be executed by the platform over the next two years.

1200 to 1330 Lunch

1330 to 1500

Workshop 4

Developing a Reporting Framework for Voluntary Complementary Actions under the Global Strategy for Plant Conservation

(Please see hereafter for details on Session F which will be running at the same time as Workshop 4)

Presenter(s): Carly Cowell & **Megan Barstow** – Botanic Gardens Conservation International (BGCI), **Peter Wyse Jackson** – Missouri Botanical Garden & **Maïté Delmas** - Muséum National d'Histoire Naturelle

Keywords: Reporting, Policy, GSPC Voluntary Complementary Actions

Abstract: The Global Strategy for Plant Conservation (GSPC) plays a critical role in supporting the implementation of the Global Biodiversity Framework (GBF), a set of Voluntary Complementary Actions (VCAs), which allows stakeholders to contribute flexibly to the GSPC's aims to scale up plant conservation globally. However, to maximize their impact, a structured reporting mechanism is needed to track progress, showcase achievements, and facilitate knowledge sharing.

This workshop aims to co-design a practical and efficient reporting framework for VCAs, identifying key reporting fields, data requirements, and a streamlined submission process. Participants will collaborate to determine essential metrics for reporting and will explore digital tools and platforms to facilitate reporting and accessibility. Through review of previous reporting exercises and interactive discussions, workshop participants will contribute to the development of a robust reporting process. The outcomes of this workshop will help deliver

	the GSPC mandate to develop a reporting process for the VCAs which will enable reporting by individuals, networks or national authorities.
1330 to 1500	Session F
	Implementing Action 4 in Ex situ Collections Chaired by Mark Richardson
	(Please see above for details on Workshop 4 which will be running at the same time as Session F)
	Kathryn Eyles – Australian Seed Bank Partnership
	Title: Ex situ conservation is key to reversing Australia's plant biodiversity loss by 2030
Keywords: Conservation <i>ex situ</i> , Recovery, Research, Seed banking	
	Abstract: In June 2024, Australia's governments agreed national targets in six priority areas of the Kunming-Montreal Global Biodiversity Framework (GBF) under the Convention on Biological Diversity (CBD) to halt and reverse biodiversity loss by 2030. <i>Ex situ</i> seed conservation is a core means of safeguarding plant biodiversity to assist Australia meet its national biodiversity targets for 2030 as well as the complementary actions in the updated Global Strategy for Plant Conservation to support implementation of GBF Targets 1-8.
	Australia has built a significant foundation for plant conservation action from over two decades of collaborative seed banking, research and knowledge sharing through the Australian Seed Bank Partnership. This collaborative effort accounts for almost 500,000 accessions across 13,000 species with collections for at least 64% of nationally threatened plant spices, providing critical insurance for future plant conservation, research and recovery actions.
	Australia's increasing use of genetic and genomic research for conservation planning is informing the restoration of endangered plants and their constituent ecosystems, as well as improving our understanding of species vulnerability to exotic pathogens, particularly myrtle rust, and severe events driven by climate change like bushfires.
	This science is further enabling novel horticulture interventions to create living collections within Botanic Gardens providing additional insurance against native plant loss in the wild. Practice is also shifting towards maternal line seed colleting to underpin future genomic research to improve the design and effectiveness of recovery projects for those plants. Investment in seed banking of #Australia's plant diversity is an affordable no regrets measure
	providing the germplasm to support a suite of allied plant conservation actions. This will be demonstrated using case studies of research and recovery projects being delivered by Australia's conservation seed banks and their partners to reverse plant biodiversity loss.
	(Online Presentation)

Kimberley Shay – Laukahi: The Hawai'i Plant Conservation Network

Title: Assessing *Ex situ* Collections of Hawaiian Native Plants

Keywords: Ex situ, Hawaiʻi, Gap assessment, Species of Conservation Importance (SCI), Plants, conservation

Abstract: Approximately 90% of the 1,376 native Hawaiian vascular plants are endemic, yet the flora is among one of the most threatened. According to the International Union for Conservation of Nature Red List of Threatened Species assessments, ~45% (629 species and subspecies) of Hawai'i's plants are threatened with extinction, and hundreds still need to be assessed. Ex situ conservation prevents extinction and supports recovery of Hawaiian plants. To understand how well native plants are conserved in ex situ collections, Laukahi: The Hawai'i Plant Conservation Network assessed 52 collections of seed banks, micropropagation labs, greenhouses, living collections, and genetic repositories of 868 Species of Conservation Importance (SCI). SCI include all Hawai'i's rare plants and other ecologically and culturally important species. Each facility received a score for each SCI based on how representative its collection is of the extant wild plants. We found 742 (85%) of SCI are held in ex situ collections and 568 (68%) are held at more than one facility. While there is room for improvement in duplicating collections at more than one facility, the Network continues to secure more diversity than in the 2012 (73% of 724 SCI represented) and 2020 (83% of 790 SCI represented) assessments. Network partners should continue prioritizing collecting unsecured SCI, collecting certain populations of SCI, and duplicating collections at multiple institutions. The Laukahi Network is well suited and committed to securing Hawai'i's native plants through collaboration. Additional steps Laukahi may take to advance plant conservation include 1) developing a fruit phenology dataset to guide future seed collections and 2) helping programs standardize their data based on best practices to enable metacollection curation and analysis. This work is urgently needed to protect Hawai'i's endangered plants.

Tina Stanley – Center for Plant Conservation

Title: Collaborative plant conservation in a biodiversity hotspot: California Plant Rescue

Keywords: California, Collaboration, Network, Prioritization, Seed collection

Abstract: California Plant Rescue (CaPR), a collaborative initiative focused on *ex situ* conservation efforts in the state of California, formed in 2014 to help meet suggested targets of the 2020 Global Strategy for Plant Conservation and continues to make progress towards Target 4 of the CBD Goals. The diversity of organization types in the network helped secure state financial support in 2019, resulting in CaPR now maintaining 94% of California's rare, threatened, or endangered native plant taxa (California Rare Plant Rank 1B) in *ex situ* collections, primarily seed collections (Complimentary Action 4c). In efforts to make collections, the group also regularly updates population information for target taxa, allowing for updated conservation assessments and statuses (Complimentary Action 4a).

While state funding immediately impacted collections, increasing members' rates of rare plant seed collection and allowing collectors to seek species further afield or otherwise difficult to collect, early successes in the formation of CaPR allowed the group to make the most of the funding opportunity. The annual rate of new California rare taxa secured in conservation seed collection quadrupled after CaPR's 2014 formation. We have identified several factors in CaPR's history, governance, and membership we believe are key to this success. CaPR members cooperate under a Memorandum of Understanding which outlines the sharing of data, participation in annual meetings, the role of a coordinator, adoption of policies, dispersal of shared funding, and more. Support from the Center for Plant Conservation in building and hosting our shared database was a key feature for understanding the breadth, quality, and patterns within our collective seed bank accessions. We plan to draw on the database further as we look to make the *ex situ* conservation collections more robust – capturing more genetic diversity across populations and taking climate change, threats, and evolutionary distinctiveness into account in our prioritization.

Valerie Pence & Megan Philpott – Center for Conservation and Research of Endangered Wildlife (CREW), Cincinnati Zoo & Botanical Garden

Title: Cryobanking Exceptional Plants for *Ex situ* Conservation to Contribute to the GSPC Target 4

Keywords: Cryobanking, Cryobiotechnologies, Cryopreservation, Exceptional, In vitro, Tissue culture, Tools

Abstract: With the potential impacts of climate change, habitat loss, and unsustainable harvesting on in situ conservation, ex situ conservation is increasingly important for threatened species. While conventional seed banking can be used to conserve most seed plants, there are species for which seed banking will not be workable, and many of these are predicted among tree species. Many exceptional species will require cryobanking for effective, long-term ex situ conservation, but accomplishing this will be challenging, due to the time, expertise, and resources needed. Gaps in information, science, and technology exist, and filling those gaps could make exceptional plant cryobanking more efficient and scalable. Several online resources are being developed for the Exceptional Plant Conservation Network webpages (Cincinnati Zoo and **Botanical** Garden, http://cincinnatizoo.org/epcn), to facilitate research and improve efficiency for exceptional plant conservation using in vitro and cryobiotechnologies. These include an EPCN Directory and Global Working List of Exceptional Status, which can help fill gaps in identifying exceptional species and who is working on them. Other tools include a Media Comparison Tool for in vitro media, Hormone Calculator, and the Comparative In Vitro Database, which have been created to help facilitate protocol development and improve efficiency in in vitro work. Developments in other labs, such as droplet vitrification and its iterations, have helped broaden the effective range and efficiency of cryopreservation, while regeneration of buds from leaves can provide meristems that are more easily prepared for cryopreservation than traditional shoot tip isolation. While these all have the potential to improve efficiency, further research into seed biology, plant physiology, and stress responses is needed to bring

	cryobanking to the scale needed to effectively and efficiently conserve the thousands of threatened species that are predicted to be exceptional. (This work supported by grant MG-252118-OMS-22 from the Institute of Museum and Library Services.)			
	Andrew Wyatt – Missouri Botanical Garden			
	Title: Aligning botanic garden horticulture and living collections to the Global Strategy for Plant Conservation complimentary actions			
	Keywords: Collaboration, Conservation Horticulture, Curation, Living Collections			
	Abstract: Botanic Gardens must continue to align collective living collections and horticultural expertise to avert plant extinction, combat climate change, share capacity, technology, and processes to increase impact. This presentation will highlight how the Missouri Botanical Garden is pioneering a vision for its horticulture and living collections, aligning its curation and horticultural activities to support a wide array of GSPC complementary actions. Practical action is delivered through fieldwork, collections development, propagation, and cultivation. Processes support knowledge building, recorded and sharing. The presentation will delve into the core curation and collections development processes that Missouri Botanical Garden employs to manage its living collections and integrate conservation horticulture. Examples of local and global partnerships will be highlighted, illustrating how these collaborations are nurtured, established, and integrated into the development and management of the living plant collections as an <i>ex situ</i> conservation resource. The presentation will also spotlight future opportunities to amplify our impact across various areas of work associated with the GSPC complimentary actions.			
1500 to 1630 Tea Break				
1630 to				
1800	GPPC Business Meeting			
	End of Day 2			
	See you all tomorrow!			

Dav 3 - 1	14 th March	2025
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Time	Event		
'''''	Event		
From 0800	Registration		
0900 to 0930	Keynote Speaker: Damian Wrigley – Manager of Living Collections and Conservation at Botanic Gardens of Sydney		

Title - Biodiversity is more than a buzzword - How networks and genuine collaboration are long-term drivers for biodiversity conservation under the Global Strategy for Plant Conservation.



Abstract: Botanic Gardens have driven the development and adoption of the Global Strategy for Plant Conservation since its inception in 2003. Over the past 22 years, the success of plant conservation projects and efforts has in large part been achieved by embracing the diversity of expertise within our organisations, and across our local, national and international plant communities, institutions and multilateral environmental agreements.

Australia's contributions to the Global Strategy for Plant Conservation have been driven largely through dedicated networks across governments, NGO's,

philanthropy and individuals, with some private sector support. Recognising, valuing and supporting these dedicated networks to take a risk on new opportunities while continuing to deliver on business-as-usual actions, has resulted in demonstrable and more sustainable plant conservation outcomes.

While Australian botanic gardens and plant-focused organisations are continuing to learn from our global peers, we too have learnings to share that may assist others to take the next steps towards plant conservation under the Global Strategy for Plant Conservation. With each year that we collectively implement the new Strategy, it is critical we recognise the past efforts of plant conservation experts and the contributions they have made to where we are today. As our knowledge base improves, it is on each of us to respect, value and champion the contributions that botanic gardens and the plant community make towards global biodiversity conservation outcomes.

Much like a diverse environment will provide substantially better ecosystem services, our networks and collaborations that reflect the diversity within our communities are more capable of pollinating blooming ideas and developing fruitful ways of working, especially when actions are rooted in sustainability principles. In the long-term, championing and supporting these approaches will provide substantial benefits for the world's plants and those of us that rely on them.

0930 to 1000 **Keynote Speaker: Paul Smith** – Secretary General at Botanical Gardens Conservation International (BGCI)

Title - Scaling up conservation action for the world's threatened tree species.



Abstract: Target 4 of the Global Biodiversity Framework calls for us to Ensure urgent management actions to halt human induced extinction of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly reduce extinction risk, as well as to maintain and restore the genetic diversity within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex

situ conservation and sustainable management practices.

How can we achieve this for plants most effectively? BGCI advocates a rational, cost-effective 'Global System' for the conservation of threatened plant species, in which conservation work is highly targeted, shared, and knowledge exchanged to reduce duplication and cost. Following IUCN's prioritise, plan, act, monitor cycle this approach can be carried out for all groups of plants that have been comprehensively assessed for their conservation status. One such group of plants is trees, which are not only important components of biodiversity in their own right, they are keystone species ecologically, integral to the life cycles of millions of other species.

The Global Tree Assessment (GTA) is the largest red listing project ever undertaken, involving >1,000 tree experts over a period of 10 years. Now considered to be comprehensively assessed, at least 16,425 (29%) of the world's 57,451 known tree species are threatened with extinction – more than all of the world's threatened mammals, birds, reptiles and amphibians combined. While recovering over 16,000 tree species is a daunting prospect, there are >3,000 botanical and forestry institutions in our network, and by working on this problem collectively, we have every chance of preventing tree species extinctions and – by extension – the other species that rely on those trees in their life cycles. In this presentation, the speaker will outline how such an approach might work.

1000 to 1030 Tea Break

1030 to 1200

Workshop 5

Policy Tools and solutions for implementation and mainstreaming (GBF Targets 14-23)

(Please see hereafter for details on Workshop 6 which will be running at the same time as Workshop 5)

Presenter(s): Rachel Hoffmann – Plantlife, **Tom Livermore** – Royal Botanical Garden, Kew & **Carly Cowell** – Botanical Gardens Conservation International (BGCI)

Title: "How should we work with policy and decisions-makers to facilitate the delivery of the GSPC?"

Keywords: Cross-sector, Collaboration, Implementation, Policy, Toolkit, Focal points

Abstract: Delivery of the voluntary complementary actions of the GSPC (hereafter GSPC Actions) requires coordination and collaboration across a broad range of stakeholders, including scientists, practitioners, NGOs, indigenous Peoples and Local Communities (IPLCs) and policy- and decision-makers.

Successful collaboration is underpinned by mutual understanding of the roles, responsibilities and needs of these different groups. This interactive workshop will discuss how best to work with key stakeholders and policymakers to ensure implementation of the GSPC.

The workshop will explore how collaborative efforts will facilitate and support the <u>Decision</u> adopted at COP16 that Parties were invited to:

- Develop/update national and regional action plans and incorporate them into initiatives including National Biodiversity Strategies and Actions Plans (NBSAPs)
- Include progress towards GSPC actions in their national reporting against the GBF
- Consider appointing national focal points for the GSPC, where they do not already exist

Workshop participants are encouraged to share their experiences of working with policy- and decision-makers which have led to successful conservation outcomes. In particular, how we support governments to deliver the GSPC Actions through regional and national plans, programmes and initiatives and the tools that can be used to help with delivery and reporting.

The workshop will include a breakout discussion exploring the following themes:

- How does/should the GPPC support the Parties to implement the GSPC, particularly in the context of the GBF?
- Do delegates have existing connections with government representatives that can be used to make approaches to promote and discuss GSCP implementation?
- What is the role of the GSPC focal points and how do we best make connections with these to help implementation of the GSPC?
 - O Is existing guidance for focal points still relevant?
- What tools can be identified or perhaps need to be developed to meet the needs described above (e.g. the <u>Plantlife GSPC toolkit</u>, BCGI GardenSearch and PlantSearch)?
- How to embed reporting on the plant actions into national reporting.

1030 to 1200

Workshop 6

Examples of voluntary complementary action projects in urban green infrastructure and urban plant diversity as coordinated by botanical gardens

(Please see above for details on Workshop 5 which will be running at the same time as Workshop 6)

Presenter(s): Glenda Abney – Missouri Botanical Gardens

Keywords: Biodiversity, Green infrastructure, Invasive species, Native plants, Rainscaping, Urban

Abstract: Urban green infrastructure and urban plant diversity are key voluntary complementary actions that clearly support GSPC and GBF and yet may not be as strongly included in many botanical garden efforts. Scientists, policy makers and practitioners can work together to advance key components of GBF Target 12 and GSPC actions 12a and 12b. Missouri Botanical Garden's (MBG) Sustainability division will present on how these actions are included in the greater St. Louis region, using native plants and biodiversity as the anchors of multiple projects. We will moderate a panel of regional experts and other workshop attendees to share additional examples supporting this target and actions. MBG has been instrumental in leading the ever-expanding movements in our area including promotion and implementation of urban native plant and biodiversity efforts, promotion of the benefit of ecosystem services, and removal of invasive species projects. These efforts, along with the long standing Whitmire Wildflower Garden at our Shaw Nature Reserve, combine to prove the benefit of natives, and how they meld well with green infrastructure efforts and increase urban plant and animal diversity. Sample projects include: rainscaping grants, invasive bush honeysuckle removal, native plant policy adoption, coordination of BiodiverseCity STL, urban tree planting, promoting pollinator gardens, training youth in career opportunities and professionals in best practices, and including these topics in regional green schools and green business programs. All of this work is done by collaborating with multiple regional cities and municipalities, non-profits, parks, and other agencies to increase impact, showcase the benefits from green and blue spaces, support planning, and provide local access to nature. Identification of agencies with needs and funds, to work with Garden staff with the expertise to positively impact green infrastructure and plant diversity in the urban areas, has allowed development of a model that produces real results.

1200	to
1300	

Session G

Implementing the GSPC at different scales

Chair Carrie Radcliffe

(Please see below for details on Session H which will be running at the same time as Session G)

Michelle De Pringer – Denver Botanic Gardens

Title: Strategies for providing the best available knowledge on population trends

Keywords: Matrix population models, Imperfect detection

Abstract: As a public facing urban garden, Denver Botanic Gardens has the directive to address a wide range of issues from urban planning to rare plant risk assessments. We help prevent the loss of biodiversity through population studies of rare and threatened species. We are developing genetically appropriate native plant material for use in restoration, studying sustainable harvest of medicinal plants, and monitoring species brought into garden displays for potential invasiveness. Through our North American Botanic Garden Strategy for Alpine Plant Conservation, we are facilitating ex-situ conservation, conservation planning, and knowledge transfer of efforts for this at-risk ecosystem. We are studying agrivoltaics at our urban farm and in our urban setting, are working to improve ecosystem functions through tree planting and stormwater management. However, a persistent challenge is making our findings available to policy makers and practitioners. To add population size and growth stage context to restoration and conservation efforts, we have modeled expectations of transient population dynamics by life history traits. We also address the impact that unmodelled variance in detection has on finding the signal from the noise of our studies. Just as population dynamics depend on life history traits, it is clear that management actions may differ by vegetation type. Our future goals are to use the International Vegetation Classification to examine how the effects of conservation actions depend on habitat types. Use of a standardized classification system can help generalize results across jurisdictions and taxa and improve our ability to share best available knowledge.

Sam Young – California Global Biodiversity Working Group

Title: Think locally, act globally: California as a case study for the importance of subnational engagement to achieve global biodiversity targets

Keywords:

Abstract: California is one of the 35 globally significant biodiversity hotspots, largely driven by the richness of its unique flora. With more than 6500 recognized plant taxa, over 2300 of which are found nowhere else in the world, California's plant diversity rivals that of many nations implementing the Kunming-Montreal Global Biodiversity Framework's (KMGBF) 23 targets. As an environmental leader and subnational government of one of the only two countries not party to the UN Convention on Biological Diversity (UNCBD), California is in a unique position to bring "think globally, act locally" to life. The California Global Biodiversity Working Group (CGBWG) is an informal coalition of state agencies, local governments, legislators, academia, NGOs and community organizations seeking to locally implement the KMGBF targets. At the UNCBD's 15th and 16th Conferences of Parties (COP 15 and 16), the CGBWG coordinated a California "delegation of delegations" to increase ambition, build partnerships and exchange knowledge on best practices to advance the KMGBF's implementation, and bring momentum and commitment to seeing the KMGBF implemented back home. As COP 17 approaches past the half-way mark to 2030 targets, it will be more critical than ever to align plant conservation efforts such as the Global Strategy for Plant Conservation (GSPC) Objectives, KMGBF targets, and subnational programs such as California's 30x30 roadmap, KMGBF targets 2 and 3, and GSCP 2011-2020 Objective II. This presentation seeks to share lessons learnt, how successes were achieved, flora focused case studies of projects in California that connect to the KMGBF and GSPC, and outline a path for next steps for realizing the implementation of the KMGBF and GSPC targets in California in a manner that is repeatable for other subnational governments and stakeholders so that they too can put "think globally, act locally" into action.

(Online Presentation)

Olivia Murrel – Manchester Metropolitan University & Chester Zoo

Title: Critical carnivores: The conservation potential of *Nepenthes* in *ex situ* collections

Keywords: Accession data, Botanic gardens, *Ex situ* conservation, Hybrids, Metacollections, *Nepenthes*

Abstract: Nepenthaceae is the largest pitcher plant family and is monotypic with only one genus: Nepenthes. The center of diversity is Southeast Asia, but many species are narrow endemics and are threatened with extinction. Nepenthes faces threats not only from the frequency of endemism, but also from threats to native habitats and prevalence in the illicit plant trade. Despite the precarious position of this genus in the wild, Nepenthes is widely held in botanic garden collections worldwide; however, little is known about the conservation status of this genus ex situ. The objective of this study is to determine which species are held in collections and to what extent they represent the in situ genetic diversity. To achieve this, we have adopted the zoological model for endangered species conservation by consolidating known accession-level data about Nepenthes in collections. With this dataset, we hope to support more informed breeding decisions and material exchanges. In this first stage of research, we gathered accession data from 81 institutions worldwide and found that 86% of the genus is represented in gardens, but 58% of these represented species have fewer than 10 individuals in living collections. While this indicates good coverage in terms of number of species, there are still relatively few individuals in collections. Populations are small and are at risk of inbreeding depression if not managed with genetic diversity in mind. With this research, we aim to begin addressing the need for an action plan for the long-term sustainability and conservation of Nepenthes in ex situ collections.

Sean Hoban – The Morton Arboretum & University of Chicago

Title: Indicators for assessing and reporting on genetic diversity for the GSPC

Keywords: Genetics, Adaptation, Populations, CBD, Reporting, Policy

Abstract: Genetic diversity is important for biodiversity restoration, management, protection, monitoring, climate adaptation and benefit sharing (GSPC actions 2, 3, 4, 8, 11, and 13). Achieving the GSPC, as well as the CBD GBF, will require assessing the genetic diversity status,

and loss or maintenance of adaptive capacity, for large numbers of species.

Ideally, genetic diversity assessments should leverage quick and affordable methods. However, DNA based studies of within-species' genetic diversity remain expensive and time consuming, and we lack even basic genetic data for most species. I will present one solution to this challenge of assessing genetic diversity in an affordable, feasible, accessible, and inclusive way. I will focus on "indicators" for genetic diversity, based on minimum effective population sizes and conserving genetically distinct populations. The indicators, first described in 2020, build on core conservation biology and genetics principles. They are a part of the CBD GBF Monitoring Framework agreed to in Montreal in 2022. I will present the concept of the indicators, examples for several plant species, and the results of deploying the indicators for 900+ species in nine countries. Results suggest that although most species have lost only moderate proportion of populations, the majority of extant populations assessed are below the Ne 500 threshold, and many populations are below Ne 50. The results suggest that many populations are already experiencing or are on the precipice of rapid genetic erosion, with consequences for their survival. Although this approach has imperfections, indicators can help plant conservationists identify species and populations maintaining genetic diversity, assist in planning interventions for such species, and make genetic concepts approachable to the public and policy makers

1200 to 1300

Session H

Strategies for conservation, with a focus on Central and South America and the Caribbean Chaired by Chad Washburn

(Please see above for details on Session G which will be running at the same time as Session H)

Mike Clifford – Reverse the Red

Title: Aligning Partners and Strategies to deliver CBD Targets

Keywords:

Abstract: Delivering species recovery at the pace and scale needed requires creativity, innovation and new strategies. We'll explore positive examples of how we can tackle complex species recovery at scale, both at the species level and the national level. We will look at creative partnerships and whole of society and whole of government approaches to species conservation. We will explore how strategic action can tie directly to delivering on CBD Targets and goals. Though dialog and participation, we want to learn from your perspective and hear your insights. This session will inspire and bolster our hope and optimism and increase the collective understanding about the opportunities and barriers facing threatened species. Together, we can reverse the trends of the IUCN Red List.

Ethan Fried – Leon Levy Native Plant Preserve & Bahamas National Trust

Title: Implementation of the Global Strategy for Plant Conservation in The Bahamas

Keywords: Bahamas, Caribbean, Global Strategy for Plant Conservation

Abstract: The Bahamas has made progress on the Global Strategy for Plant Conservation through a partnership between the Levy Foundation and the Bahamas National Trust (BNT) to create the Leon Levy Native Plant Preserve (LLNPP) on Eleuthera. The LLNPP was designed and built to support plant conservation and the Bahamas commitment to the Global Biodiversity Framework specifically targets 1 – 6, 8, 9, 11, 12, 14, 15, and 20 – 23. The LLNPP emphasizes Target 20 as an overarching focus to facilitate achieving all other targets with an emphasis on reducing threats to biodiversity in general. To increase in-country botanical capacity an intensive eight-week plant taxonomy and ecology internship for university age Bahamians was created. For conservation, training, and education, the LLNPP has naturally occurring populations of five endemic species and has added 30 endemic species to its living collections (33 % of the 89 endemic species). The BNT has been mapping the vegetation of the national parks to develop GIS capacity for country wide vegetation mapping. The LLNPP has developed Caribbean Dry Forest and Dune restoration protocols in the national parks and with private land owners. A conservation horticulture program has been established producing stocks of endemic and native species for restoration and outreach. The BNT has established 33 national parks across nine island groupings covering ~ 10 % of the Bahamas vegetation and representing all terrestrial ecosystems within the archipelago. The Bahamas has developed invasive species removal programs and protocols for restoration in Caribbean Dry Forest and Dune ecosystems. As a small island nation, the Bahamas faces an existential threat from climate change through sea level rise, and increased storm duration and intensity. Coastal restoration and resilience programs are fundamental to protect the shoreline of the archipelago and reduce the risks to biodiversity from climate change.

(Online Presentation)

Ana María Benavides – Jardín Botánico de Medellín

Title: Action plan for the conservation of Colombian magnolias: A Strategic Approach to Biodiversity Preservation

Keywords: Knowledge Generation, Communication, Education and Management Instruments

Abstract: The Magnoliaceae family, comprising over 300 species of trees and shrubs, is renowned for its ornamental, industrial, and medicinal value. Colombia hosts 42 Magnolia species, positioning it as South America's most diverse country for this genus. Magnolias play a crucial ecological and economic role, particularly in rural areas where their timber has been overexploited, and most species are threatened. We present a National Magnolia Conservation Plan for Colombia to address these challenges, aligning with the Global Strategy for Plant Conservation and key biodiversity targets. The plan was created with the

participation of biodiversity managers, experts and policy makers. This plan aims to conserve Magnolia species and safeguard critical biodiversity areas through four strategic action lines: Knowledge Generation, Education and Communication, Conservation, and Management Instruments. These lines translate into ten key objectives: (1) Identify species distribution, abundance, and threats; (2) Implement a national monitoring program and establish participatory conservation groups; (3) Develop propagation protocols utilizing traditional and in vitro methods; (4) Design and implement educational programs and public outreach strategies; (5) Enforce protection strategies and habitat restoration projects; (6) Strengthen ex-situ collections in botanical gardens and promote germplasm exchange programs; (7) Identify sustainable use opportunities and develop pilot projects; (8) Promote regulatory frameworks to update risk assessments and manage conservation policies; (9) Identify financial incentives and secure funding for conservation initiatives; and (10) Establish a national network to coordinate conservationefforts.

By implementing this plan, all Magnolia species in Colombia will have baseline conservation data and active strategies supported by governmental agencies, NGOs, academic institutions, and local communities. The plan is designed to contribute to global biodiversity conservation goals by ensuring integrated management, effective restoration, sustainable use, and resilience against climate change, thereby securing the long-term viability of Magnolia populations and their ecosystems.

(Online Presentation)

Pablo Dovico – Fundación Temaikèn & Center for Species Survival Argentina

Title: Conservation Efforts to Reverse the Red in Vascular Endemics Plants Populations of Misiones, Argentina

Keywords: Endemic plants, Misiones, Conservation, Fundación Temaikèn, Biodiversity, Restoration

Abstract: The objective of this work is to share with the botanical community the efforts that Fundación Temaikèn is making to conserve species of vascular plants endemic to the province of Misiones through innovative and effective strategies.

A total of 16 species of vascular plants endemic to Misiones Province (32% of the provincial total) grow exclusively in grasslands with sandy substrates in specific sites, such as Teyú Cuaré, San Ignacio, and near Loreto and Candelaria. Most of these species face critical danger, as their populations are small, restricted to limited areas, and exposed to anthropogenic threats, including road construction, soil extraction, fires, and invasive alien species. Since 2011 Fundación Temaikèn has led conservation project for these endemic species, focusing on research, mapping, population monitoring and cultivation in the Osununú Reserve nursery, which is managed by the foundation.

This initiative has resulted in significant achievements: the identification of new species, population assessments, municipal and provincial regulatory proposals for their protection, and the cultivation of seedings for population restoration. A notable success is the cooperation with INTA (National Institute of Agriculture Technology) to create a germplasm

bank and develop in vitro multiplication techniques for *Hedeoma teyucuarensis*, a critically endangered species with only two specimens left in the wild.

Looking ahead, Fundación Temaikèn is committed to its efforts to "Reverse the Red." bolstered by the newly established Argentina Species Survival Center (CSS-Argentina) in partnership with the IUCN Species Survival Commission (IUCN-SSC). The centre applies globally validated methodologies to identify conservation priorities, evaluate, plan, act and communicate. It fosters efficient, holistic, and effective conservation strategies, emphasising capacity-building for biodiversity conservation and strengthening connections between conservation, communities, and human well-being. The Red List categorisation of these plant species, previously lacking IUCN categories, has been completed as part of this project, furthering the protection of Misiones' unique botanical heritage.

1300 to 1400 **Lunch**

1400 to 1530

Workshop 7

The strength of collaboration through networks and their contribution to the GSPC (Please see hereafter for details on Workshop 8 which will be running at the same time as Workshop 7)

Presenter(s): Megan Barstow, Noelia Alvarez, Greetha Arumugam, Carly Cowell, Joachim Gratzfeld & Kirsty Shaw — Botanical Gardens Conservation Internation (BGCI), Silvia Alvarez-Clare — Morton Arboretum & IUCN SSC Centre for Species Survival: Trees, Mark Richardson — Botanic Gardens Conservation International USA (BGCI-USA) & Chad Washburn — Naples Botanical Garden

Keywords: Networks, Communication, Capacity building, Awareness, Botanic Gardens

Abstract: The GSPC, like the KMGBF, is ambitious. For it to be delivered we need strong global commitment and engagement for plant conservation action. Nowhere is this better demonstrated than in several regional, taxonomic and other technical networks taking coordinated action towards specific goals. Many of these networks are formed of botanic gardens, already leading the way with plant conservation action who we will hear from in this session.

Networks are fundamental to enhancing collaborations across plant conservation, sharing expertise, building capacity across nations and demonstrating positive impact. Network contribution can also be at different levels, varying from organizations leading for instance single species conservation to multi-species programs with numerous stakeholders. The work undertaken by these networks and their members contributes to several GSPC Actions. But the existence of the networks themselves directly addresses *Objective 3 Tools and solutions for implementation and mainstreaming*, including Actions 14, 20, 21 and 23.

This panel session will have representatives from several of BGCIs networks including the Global Conservation Consortia, the Central American and Caribbean Botanic Gardens Network, The International Plant Sentinel Network, and the North American Garden Network.

This panel session will have four segments

- Overview of networks
- Presentations from panel members on their networks (including videos from other network leaders such as Southeast Asia Botanic Gardens Network, Red Sudamericana de Jardines Botánicos)
- Panel discussion
- Q & A with the audience

This session will explore not only the contribution of networks to activities such as capacity building and plant conservation, but it will also provide a platform for sharing successes, challenges and case studies of the variety of work they engage with. From the session we will prepare a short summary report of the work of networks, formulate the next steps for their contribution to the GSPC and share ideas for expansion and greater inter-regional exchange.

1400 to 1530

Workshop 8

Learning from Crisis (2x discussion groups)

(Please see above for details on Workshop 7 which will be running at the same time as Workshop 8)

(Discussion Group One)

Presenter(s): Kathryn Eyles – Australian Seed Bank Partnership & **Damian Wrigley** – Botanic Gardens of Sydney

Title: Learning from crisis: Australia's emergency conservation response following the 2019-2020 bushfires

Keywords: Collaboration, Impacts, Plants, Recovery, Wildfires

Abstract: Australia's 2019-2020 bushfires were unprecedented globally, lasting roughly eight months and burning over 10 million hectares from north to south, including 20% of temperate forests across southern Australia. 2019 was Australia's hottest and driest year on record, triggering heatwaves and severe fire weather, the national accumulated Forest Fire Danger index, the highest since records began in 1950.

The scale of the impact necessitated a strategic response to ecological recovery. An Expert Scientific Panel was established to assess and identify ecosystems, plants and wildlife at risk in the bushfire affected regions. This involved close collaboration across governments, non-government and private sector organisations, botanic gardens, herbaria, research

institutions, the National Environmental Science Program (NESP) and Threatened Species Scientific Committee (TSSC).

The Panel identified priority activities to guide recovery, with 810 priority species and ecological; communities requiring urgent management intervention. Work commenced while the fires were burning and progressively adapted as regional assessments provided new information. This guided allocation of over 10 million AUD for impact assessments and recovery, including (\$3.31m) to undertake rapid surveys of affected plant communities, emergency seed collection, research and propagation.

The collective expertise and experience across the Australian Seed Bank Partnership made an impressive contribution to the recovery effort, with rapid flora assessments, seed collections, germination, trials and propagation activities conducted for over 700 native plant species.

Additional funding for the NESP enabled real time research about the recovery, and the TSSC recommended that *Fire regimes that cause declines in biodiversity*, be listed as a key threatening process, which was adopted into national environmental law.

There are important learnings from Australia about the value of mobilising networks and cross-sector collaboration, following catastrophic fire events. There were also missed opportunities to establish longer-term monitoring of ecological recovery to understand vulnerability and establish funding communities for future preparedness.

(Discussion Group Two)

Presenter(s): Emiliano Sánchez Martínez, Beatriz Maruri Aguilar & María Magdalena Hernández Martínez – Jardín Botánico Regional de Cadereyta, Gabriela Rocha Álvarez – Chicago Botanic Gardens & Noemí Hernández Castro – Desert Botanical Garden, Phoenix

Title: Illicit international trade of Mexican succulent plants: discussion and proposals to achieve KMBF Target 5

Keywords: Illegal plant trade, KMBF, Repatriation, Threatened Species

Abstract: The group will discuss topics associated with the plants trade component of target 5 of the Kunming-Montreal Biodiversity Framework. Mexican Cactaceae will serve as the primary source for data and inspiration for ideas.

Plant poaching of Cactaceae is a cyclical process in Mexico, reinforced by the discovery of new species that are sought-after by plant collectors abroad. Additionally, there is a continuous hunt for iconic plant species whose populations are in decline. These occurrences have been properly documented for years. Illegal plant trade channels and networks of distribution have evolved. Today, they rely on sophisticated tools and technology, and individuals operating both in the field and online.

The evolution of the illegal trade of cacti has gone faster than the Mexican environmental regulatory updates and alignment to international agreements. CITES has facilitated the traceability of exported cacti species and has recognized seed trade as the primary activity.

Addressing this problem requires an international, layered approach including education to all levels of society—from foreign plant collectors to domestic plunderers. It also requires the improvement of horticultural practices to restore populations of threatened species and to

legally fulfill the market demand for succulent plants. Additionally, legal measures must be discussed and put in place to ensure the quick and adequate management of aspects such as the repatriation of batches of Cactaceae seized in other countries and their return home.

The discussion group will bring together specialists from Mexico and the United States and is convened by the Cadereyta Regional Botanic Garden. This garden has been documenting the devastating effects of the illegal plant trade and running the campaign "Leave them in their land" ("Déjalos en su tierra," in Spanish), that raises awareness of the illegal poaching of plants and discourage their illicit trade.

1530 to 1600 Tea Break

1600 to 1645

Work Planning

GPPC members, session chairs, presenters and other interested parties are invited to take part in a work-planning session to compile, keys ideas, themes and next steps for the implementation of the GSPC.

This will be presented in the closing of the session and communicated to the wider GSPC audience following the conference.

1645 to 1700

Closing

Thank you for your participation and discussions.

Please keep in touch with us!

Sign up to BGCI's Cultivate Newsletter to keep up to date with the GSPC

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